Practical FINANCIAL ACCOUNTING

Advance Methods , Techniques and Practices

Dr. K. S. Vataliya

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(Advance Methods, Techniques & Practices)

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Financial Accounting is an Important subject of modern world. That is why we bring out this book of **Practical Financial Accounting** with advance methods, Practices and in a inimitable style. The students businessmen, traders, industrialists and professionals must know financial accounting to real life situations. The book opens up the gateway of analysis to the world of accounting to those who go in for the study of accounting methods and techniques academically as well as practically. This book has been written in a "Teach Yourself" style strictly following a student friendly approach and essentially meant to serve the matter for their examination as a tutor at home.

This book is useful for B.Com., B.B.A., M.Com., M.B.A., C.S., C.A., I.C.W.A. students and professionals. The present edition of the book has several unparalleled features which make it distinct from other books. Every chapter is logically set and graded. Some of them have been even sectionalised to facilitate the readers. Power of grasping the subject and thereby grow self-confidence in the mastery of it. The essential topics are :

Essential Functions, Principles and Standardisation of Financial Accounting, Advanced Mechanised Accounting, Data

Processing and Programming Languages, Sensitivity for Business Alternatives, Practical Accounting of Material, Production and Labour, Financial Decision Making, Financial Leverage, Ratio Analysis and Financial Statements etc.

I am confident that above features would make this edition an invaluable asset to students and professors of commerce, management and accounting. I wish to express my sincere thanks to several individuals who have been a source of inspiration and support both personally and professionally. Readers views, comments, criticism and suggestions are welcome.

Author

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ESSENTIAL FUNCTIONS FOR FINANCIAL ACCOUNTING

The society in general and the business community particular have the capacity to provide a large number of teaching aids. It is for the teacher to locate such aids and evaluate them. The local newspaper, the national dailies, the economic and business dailies, the economic and business magazines are all full of enrichment material for teaching of commerce. A close contact with local business personnel will also provide rich resources and so it is desirable for the commerce teacher to interact with local business people and to welcome opportunities to widen his horizon beyond the class room by associating with the business leaders of the community. Foreign business magazines and periodicals are also potential sources of teaching aids for commerce education. Some of the famous business magazines are Journal of Business Education, the Business Education World, and The Balance-sheet.

Statistics and formula; a moving panorama of the world in which we live-right now, while we are living in it not as a dreary drill of text-books and tests. In short I feel that one of broadcasting which is most helpful contributions to educational and one of its real responsibilities to it self and its listeners is the popularising of education itself".

Radio and tape recorder have made possible the recording and reproduction, as also, the storing and dissemination of sound and

voice. Being primarily concerned with the spoken word, the radio breathes life into dead words and can be a source of inspiration to speakers. The radio uses expression and sentence-structures, which are more speakable and which are more easily comprehensible. On radio the human voice rides at a terrific speed circulating the earth seven times in second. Recording on tape and disc has further made it possible for the spoken words to be captured, preserved and repeated when needed.

Use of Radio Broadcast in Teaching of Financial Accountancy: The use of radio broadcast is quite important in teaching of commerce if it can be properly utilized. For its proper utilisation following points should be kept in view:

(a) Radio broadcast is simple an aid to teaching accountancy and not a substitute for it. It is just like a laboratory for experiment, a trip etc.

(b) It is desirable to hear such a broadcast in class room instead of a auditorium of any other large room.

(c) For making out best utilization it is essential to select the broadcast very carefully on the basis of probable value in furthering the pupil's learning.

(d) election of the radio broad casts can be done much in advance so that teachers get enough time to plan for better preparatory and follow-up activities.

Accepting and assimilating criticism which they would not ordinarily receive in the class-room.

The relationship between the instructor and the production expert determines the quality of presentation. The instructional expert, normally a qualified academician too, often tends to regard the production experts as the 'technician' without any academic stature. This tendency should be curbed before any worthwhile production can take place.

Television is a visual method and to attempt the production of good instructional programme without a versatile artist is to attempt to produce dairy products without the source of milk.

Organisation of the total effort should include, besides instruction and production specialists, an expert in programme

system analysis, who is responsible to analyse the educational needs of the educational institutions and to recommend the most efficient use of media.

An educational psychologist should be an integral member of the team for testing and evaluating the result of the instructional methods as well as for advising on method to be used. A great deal of research is necessary to theorise Educational TV's impact on learning process.

Television in Accounting Education: The use of TV education in India is becoming more and more popular. Now we find a good number of educational programmes on our TV sets. There is a regular educational service for school and college students and a number of model lessons are shown on TV in the educational programmes.

So far there has been a provision of open circuit television in our country and the use of closed circuit television has not been introduced. The closed circuit television is a type of micro-level local arrangement generally limited to a single schools. It is used to transmit sound to a limited network connected by cable or microwave system. It is not received by other TV sets which are not connected to this network. Moreover the signal is not required to meet the commercial broadcasting regulation.

Growth and development. The teaching aids are the stimuli for learning 'why', 'how', 'when' and 'where'. It is 'hard to understand principles' which are usually made clear by the intelligent use of skilfully designed instructional aids.

The significance and the educational importance of audiovisual teaching aids has been noted down by the many Commissions in their report as follows :

It is hardly necessary to emphasize the role that audio-visual teaching aids, film and radio talks, can play in the liberalizing of the accounting education. In some states they have been developed to such an extent that most of the colleges are able to obtain such aids from the Education Department. We recommend that a central library of educational films should be available in each state and the films of great value should be sent from the central government to the states periodically. We recommend also that educational films

suited to Indian conditions should be taken and made available to schools and colleges of our country.

As regards to radio, we are glad to learn that through the All-India Radio (AIR) arrangements have been made for school and college broadcasts. It is hardly necessary for us to emphasise that such broadcasts should be done by well qualified persons and should create an interest in the subject so that the boy's curiosity can be roused to learn more about the subject. Nothing is calculated to produce in the child an aversion for such broadcasts as the monotonous and none too graphic description that some times is given by persons not quite familiar with the psychology of the young mind. It should not be treated as a routines duty which can be discharged by any teacher in the area. Care must be taken to see that an expert panel of head masters and teachers is constituted to take decision on : (i) the subject to be dealt with, (ii) the manner, in which it is sought to be dealt with, (iii) persons competent to give such talk. If school broadcasts are conducted on these lines, they will form a very efficient supplement to education.

Audio-Visual Teaching :

(A) Best Motivators : They are the best motivators. Students work with more interest and zeal. They are more attentive. Students in accordance with the patterns and principles set by the society.

(B) Television : Television is one of the commonly used teaching aid in U.S.A. for accountancy. In India a beginning has been made to use television as teaching aid. In a study conducted in U.S.A. it has their homes spend about 23 hours every week on televiewing.

Education programmes through television can make available many needed and for inaccessible learning experiences, to the students, which lend efficiency to the class-room instructions. It also brings about continuing cooperative planning by teachers, supervisions, learning material experts and skilful television production teams. Good and effective educational television of context analysis and of selection and inter-related use of this most appropriate instructional media.

Significance and Merits of Teaching Instructions through Television :

(a) Availability of Direct Stimuli : Learning can be accomplished more effectively by televised instructions than by

conventional methods. Proper use of Television's illustrative technique can provide a more direct impact as compared to a direct lecture or text-book. This is accomplished through a direct pictorial representation of fact or theory, utilising static or dynamic visualisation. Pictures provide a stronger and more direct stimuli to student thought an understanding in comparison to words.

(b) Consistency in Teaching-Learning : Communication by speech is a learning skill. Seeing the thought stimuli provoked by sign begin shortly after birth and comprise the base of experience on which sensory reaction and knowledge are built. Through the use of visual media, consistency is built up into the instructional system and thus it is more reliable for students.

For the teaching of accounting these things are also useful. These things have their effect on the sense organ of students and so a co-ordinative teaching is possible. In the accounting education today an attempt is made to co-ordinate the working of Head, Hands, Eyes and Ears. It can be achieved by proper use of modern teaching aids.

The modern teaching aids occupy a significant place in the process of education. Aids are of three types :

(a) Traditional aids: Text books. Black-board etc.

(b) Visual aids: Pictures, Sketches and diagrams etc.

(c) Audio-visual aids: Radio, T.V. Films etc.

In the present day society for imparting accounting education we need many types of modern teaching aids. These teaching aids are needed to impart education of accounting in a modern way. Audio-visual aids have brought about a revolutionary change in the accounting education system. Even more sophisticated accounting teaching aids may be available in near future and such sophisticated and advanced accounting teaching aids may be available for use in teaching the coming generation.

Audio-visual teaching aids or devices or technological media or learning devices are added devices that help the teacher to clarify, establish, correlated and coordinate accurate concepts, interpretations and appreciation to enable them to make learning

more concrete, effective, interesting, inspirational, meaningful and vivid. The aim of teaching accounting with technological media is "clearing the channel between the learner and the things that are worth leaving."

The important assumption underlying audio-visual teaching aids is that learning clear standing-stem from self experience. The teacher of accountancy subject must 'show' as well as 'tell'.

Audio-visual teaching aids give significant gains in informational learning, retention and recall, thinking and reasoning, activity interest, imagination, better assimilation and personal.

The selection of modern teaching aids to be used for accounting is difficult because of the fact that instructional material need for different subjects of commerce programme are almost limited. The government sanctions grants and financial aid for the purchase of such aids, from, time to but the amount sanctioned is limited. For these reasons we have to be very careful in our selection of audio visual aids. This pick and choose of the material must be done by teachers most cautiously, intelligently arid wisely. Some efforts should be made to eliminate such material which distorts facts. For a proper selection the schools must collect a very detailed information about various items available from various sources and exercise their good sense in the choice of their material. It is always better to have a committee of teachers for making the selection of such teaching aids because of the following reason:

"Blind buying is always hazardous, the committee should establish and follow the policy of seeing before purchasing. It is well to remember that new models, equipments and materials are often advertised before they are ready for distribution. No matter how attractive they appear on paper or in the salesman's talk, they should not be bought. Every new product has 'bugs'. Competitive demonstrations or try outs under identical conditions represent on excellent method of obtaining comparative data. A wise salesman will always welcome such an opportunity. If he does not he evidences a lack of confidence in his product and should be avoided."

The following criterion may be used for selection of the material to be used as an accounting teaching aid.

- It must supplement the text-book information.
- It must represent correct, real and concrete examples.
- It should be commonly used in business and/or Government offices.
- It should be easy enough to enable even the beginners in the Business jobs.
- It should be interesting, comprehensible, concrete, clear, and concise.
- It should be capable of being used effectively.
- It should be free from any undesirable propaganda and advertising.

Flannel Board : Generally the accountancy teacher finds it convenient to depict items on the flannel board. Various items are made out of chart paper, pieces of sand paper or cotton are pasted on the back side of each item. Instead of writing with a piece of chalk various items are stuck against the surface of the flannel board.

Flannel board is more useful to depict certain diagrams, results etc. particularly when we have to make clear interrelationship or the continuity of various steps. Flannel board introduces novelty and change in the class atmospheres.

Projective Aids : In this type of accounting teaching aids are included as aids like film strips, opaque pictures, motion pictures etc.

Film Strips : Following advantages accrue in the use of such teaching aids :

(a) The film strips can give new colour and attraction to different ideas in commerce.

(b) The image can be kept before the students as long as we desire. The diagrams of results etc. can be shown again and again.

(c) These do not burden the minds of students and can be shown even in off hours.

A film-strip contains. Series of still pictures about 24-48 frames arranged in a sequence.

About the Utility of Films as Teaching Aids : Edison a great scientist, remarked, "The only text-book needed will be for the teachers own use. Films will serve as guide posts to these teacher-instruction books and not books as guides to the films. People will learn from films every grade from the lowest to the highest. Films are inevitable as practically the sole teaching method."

Suitable films can be obtained from universities and departments of education of different states. Films can also be borrowed from Ministry of Broadcasting, Ministry of Education and Publicity department of states. Films can also be loaned, free of charge, to schools and colleges by certain foreign embassies.

The films strip include certain diagrams and situation in a proper sequence. The ideas are beautifully presented before the students. However, the teachers should plan the use of a film-strip and see for himself before using them for the students. The teacher should know the details and other points that have to be emphasized. In India films are not much in use but in foreign countries they are more used.

Education Films : Broadly speaking, a film is of a ^ multiple method of communication and learning. It presents facts in a realistic way, dramatises human relationships, arouses emotions and transmits attitudes. It may be used for the communication of ideas, attitudes and experiences to the masses of the people outside the class-room. An educational film has been described as the greatest teacher because it teaches not only through the brain but also through the whole body. It has a very powerful influence on the minds of children and in shaping their personality. The main aim of educational film is to elevate and educate the

Economically Viable : Utilisation of video helped learning system and internal video feed-back techniques hold promise for meeting the pressure of information, requests, while at the same time maintaining favourable cost benefit ratios especially with the use of INSAT.

Services of Super Teacher : Through television 'the super lecturer' or 'master teacher' is available at number of places simultaneously, without the expense of time and toil for travel.

Education of Great Number : Television is capable of providing the best possible instructions for a very large number of students.

Multiplication and Magnification : Television is an instructional and teaching tool that makes possible multiplication and magnification of distance and time factors and act as storage of accomplished and tested instructions. Multiplication implies the extract reproduction of an instructive situation with transmission of an unlimited number of students, for example the magnification and distribution of 'live' surgical techniques and magnification of minute biological reactions, specially in circumstances where normal observations would be difficult.

Efficient Use of Educational Television : Television, a complex tool for possible development of excellent instruction, can be effective only if properly used by good craftsman. The key to efficiently, inspirational and practical educational television is co-operation among progressive administration, a dedicated and sincere faculty and an educationally aware and technically knowledgeable staff. There is no other medium of instruction which relies as heavily for quality on the interaction and interdependence of the team of experts; the manager, the educator, the artist and a number of other persons to be selected as much as for their ability to cooperate with others as for their competence in their respective fields.

Radio : The potential of the radio teaching as an instructional aid is being recognised more and more over the world. R.G. Reynolds writes, "Radio is the most significant medium for education as its broadest sense which has been introduced since the turn of the century. As a supplement to class-room teaching, its possibilities are almost unlimited. Its teaching possibilities are not confined to the fixed hours of the school day. It is available from early morning till long after midnight. But utilising the rich educational and cultural offerings of the radio, children and adults in communities, however remote, have access to the best of worlds stores of knowledge and art. Some day its use as an educational instrument will be as common as text-books and black-boards".

Fradric Wittis has rightly remarked, "I like to think of education by radio as a timely, vital and dramatic thing, a system of learning or acquiring more information; a means of widening ones horizons or enriching ones life and breaking down prejudices through

inspiration and not perspiration; an education by desire and not by discipline; a pattern of swiftly changing pictures, event with keen interpretations, not

The broadcast be evaluated keeping the following factors in mind :

(i) Do the materials presented contribute to the attainment of objectives of the educational programme.

(ii) Is it authentic and all details are accurate?

(iii) Does it have unity?

(iv) Is the programme suitable for the grade level for which it is being considered?

(v) Will the programme arouse interest and motivate the listener to read more about the subject presented?

(vi) Does the programme summarise the main points and hence fix them in the students mind?

(vii) Is the programme presented in a interesting way?

(viii) A Radio broadcast may be considered only an assignment for further study.

(ix) The teacher should make a sincere effort to assess the results of a broadcast.

Motion Pictures : Motion pictures are also used as teaching aids for teaching of accountancy. In their usual display they resemble the TV programme but they differ in the following respects :

- TV programmes are available on a definite date and time where films can be seen at any time.
- Teacher has no control on TV programme but the film programme can be adjusted by the teacher.
- Some good films help in imparting certain factual information and developing performance skills.
- Film bring about a chance in the attitude of a child.
- Short single concept film has more advantage.
- Film increase learning by repetition of some key points.

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2

PRINCIPLES OF FINANCIAL ACCOUNTING

Financial Accounting Method has first step in collecting business data and information is compiling a set of adequate definitions of the categories concerned so that there can be no confusion one the part of the reporters. In the private business organisation there is some confusion in revenue between taxable and nontaxable sales, and there is always the possibility of confusion in classification of business expenses unless they are carefully designated by accountant. In the modern commercial world there are various manuals of accounts published by trade associations, each adapted to specific business needs.

In the semi-public field of the public utilities, the regulatory bodies publish recommended set of accounts and procedures. For local governments the State Municipal Finance Act and the state governments publish recommended systems of accounts.

The collection of business data and information usually begins with manual recording. The business data may be transposed to punch cards or put on tapes or disks for tabulation by electronic machine accounting-assuming there is a sufficient volume of business transactions to warrant the use of high-speed machines.

The intermediate step in mechanization, if the volume of business activities of a company is not high, is manually operated accounting machines. These have a disadvantage in that they cannot

automatically store business data and information to be retrieved by the machine itself.

If computers are used and the program is properly designed, the business machine can store and tabulate the details of the transactions, prepare reports, and print them out as a final result. The rapidity of the operation is important to all segments of the economy, but the interpretation of the business results is still a human function and management still has to make the decisions based on the reports rendered by the computer information system.

Accounting postulates and principles denote many propositions (assertions) about accounting. 'Postulates' refer to those basic business propositions which describe the accountant's understanding of the business world in which the modern accounting functions are performed. These are generalisations about the environment of accounting which are based upon a more or less comprehensive view and understanding of the modern business environment. The term 'principles' on the other hand is used to denote those important propositions which are based on the postulates and refer expressly to accounting problems related to modern business.

Postulates are the important assumptions on which business principles rest. They are derived from the economic and political environment of that country and from the modes of thought and customs of all parts of the business community. To be more precise, postulates are assumptions which are reasonable as well as necessary and which are not arbitrary or capricious in nature. To the extent these accounting assumptions conform with reality, as perceived, they strengthen accounting principles and they are accepted as accounting postulates. In ordinary discourses accounting postulates are often left unexpressed or implied.

Accounting principles are also described as accounting conventions. This does not mean that every proposition which accountants accept by convention is always a valid one. Describing accounting principles as convention is intended to convey the idea that they are generalisations or inferences drawn from a large body of business data and that they are not intended to be literal descriptions of reality.

Accounting principles or conventions are sometimes called as concepts. This is not strictly appropriate. An accounting concept consists of a coordinated set of ideas about a given thing. A concept may be complete and well established, or rudimentary and subject to dispute. A complete accounting concept contains ideas about what the thing is, what it is not, and what its relationship to other things is. Mutually understood accounting concepts are a prerequisite to communication and the exchange of ideas in modern business world. Concepts of intangible things are more difficult to develop as abstract ideas because direct observation is impossible; they are also more difficult to establish through agreement because differences of opinion cannot be settled by common observation in modern business world.

There is general agreement among professional accountants of an economy about certain concepts which underlie or permeate accounting principles, e.g., (1) Entity Concept, (2) Going Concern Concept, (3) Money Measurement Concept, (4) Concept of Consistency between periods for the same entity, (5) Concept of Conservatism, and (6) Material Concept.

Some times accounting concepts are also known as 'Basic Accounting Postulates'. Let us examine the most important accounting postulates or concepts.

Basic Accounting Postulates :

Accounting records are based on quantitative data for only quantitative data can help in making rational, economic business decisions of modern world.

Goods and services manufactured by an organisation are distributed through exchange and are not directly consumed by the manufacturers. This important accounting postulate suggests that self-consumption of goods by manufacturers does not comprise a large part of the economic system of a country.

Economic activity of a country is supposed to be carried on by clearly identifiable legal or economic business entities. Accounting records of a business are thus maintained and accounting results are summarised in terms of particular business entities. Whether it

is a proprietorship concern, a partnership firm or a joint stock company, the business is considered a separate business entity and its affairs are distinguished from those of its owners. Thus, accounting income is measured as it accrues to the separate business entity in the form of realised increases in net assets, not as amounts payable to owners. Likewise, an obligation of the business entity to owners is treated as a liability of the business entity and shown on the Balance Sheet in spite of the fact that in a more conventional sense the owners owe a portion of the debt to themselves.

Every economic activities are generally carried on during specific periods of time. Any report pertaining to the any business activities should be identifiable clearly with the period of time involved.

Money is the common denominator in terms of which all business transactions, i.e., exchange of goods and services including labour, capital and natural resources are measured. The accounting records and reports must clearly show the monetary unit used for accounts. Many business transactions could be stated in physical or time units of measurement. However, the diversity of units would make record-keeping and particularly summarisation of position and results of business operations very cumbersome.

In the absence of evidence to the contrary, a business organisation is viewed as remaining in operation indefinitely. Obviously, the most probable situation for company in general is that it will continue to operate for an indefinite period of time. The important significance of this postulate is that it removes the liquidation idea from the accountant's viewpoint. The probability that specific productive assets could be liquidated only at a loss, or the fact that if a company ceased operation, certain liabilities would mature immediately and need payment in excess of their present value is not allowed to become a basis for accounting for assets and liabilities. Besides, the going concern postulate gives the logical basis for recording probable future economic benefits as assets and probable future outlays as liabilities of an organisation. This does not imply assuming permanent existence of the company, but simply that it will continue to exist long enough to carry out present business plans and meet contractual business obligations.

This proposition has the effect of broadening the scope of accounting beyond the limitations of liquidation value and of strictly construed legal rights and obligations as in the case of accounts receivables, inventories, equipment and buildings, intangible assets and also liabilities of a concern. Accounts receivables are shown as the amount of the anticipated future cash receipts, not at the present realisable (liquidation) value of the receivables in the market. Minor legal defects, if any, in the business transactions are ignored for accounting purposes of the company. Besides, provision for doubtful debts is not based on immediate market (liquidation) value nor on the right to sue and obtain judgment. Inventories, work in process and finished goods are assumed to be worth more than the raw materials on the basis that the work in process will be completed and finished goods sold in the due course of business activities of a going concern. The immediate market value of work in process is usually lower than the market value of materials before processing, e.g., white paper is worth more than printed pages unless process of assembling the printed pages into books is completed and the books can be sold at a price above cost. In the case of depreciable assets like building and machinery, the effects of random changes in the immediate market prices can be ignored because it is assumed that the going business concern is interested in using up the services of the fixed assets rather than selling them in the market. The amount of depreciation annually charged is also based on an estimated useful life of the fixed asset with the underlying assumption of a going concern being in operation at least as long as the useful life of the fixed asset and recovering the undepreciated cost of the fixed asset from future revenues of the concern. Again, when costs are allocated to future periods as in the case of prepaid expenses, research and development expense and cost of patents, trade marks etc., it is assumed that the company will continue to work in the years to come. On the other hand, estimated liabilities contingent upon future eventualities (even though not legially enforceable) are also taken into account on the basis of the 'going concern' concept of accounting.

When the continuity of operations is accepted as a valid proposition, it follows that accounting reports have also to be on a

continuous basis. Financial reports of the company are thus actually prepared regularly and are interrelated. Thus, estimates made in the past financial period are usually adjusted in the following years' accounts if they are found in retrospect to be too high or too low.

Accounting records of the company should be always based on factual business information. Changes in assets and liabilities, and the related effects, if any, on revenue, expenses, retained profit, etc. should not be given formal recognition in the accounts of the country till the point of time at which they can be measured in objective terms. The important element in the objectivity of any observation or interpretation is the agreement of competent person as to what has been observed or experienced. The term objective evidence, then, means evidence that is sufficiently clear cut so that there will be very little difference in their interpretation.

The consistency postulate of accounting implies that the procedures used in accountancy for a given company should be appropriate for the measurement of its financial position and its activities and should be followed by the company consistently from period to period. This does not mean that once a particular procedure has been adopted by the company it must never be changed. Changes should be made, if necessary, but the change of procedure must be fully disclosed along with the monetary effects of such changes on the financial statements of that company. The user of financial statements is entitled to believe that the procedures used in arriving at the reported income and state of affairs during the current period were consistent with those used in the previous period, unless a change in procedure is reported as an integral part of the financial statement. Moreover consistency does not mean uniformity or even comparability among independent units of business activity. What is needed is consistency of procedure between periods for the same entity, and disclosure of change, if any, made in a particular period. The significance of the consistency postulate will be fully realised if it is understood by the company that changes in accounting data from period to period, and the direction and relative size of such changes, may be more significant than the absolute amounts reported by the management of that company at any given time. In order that accounting data may be

interpreted and compared over time, it is very necessary that shifts from one accounting procedure to another should not be made capriciously by the company.

Transactions of business entities are reflected in the accounts in terms of the monetary unit at the time of the transaction, and there is continued use of the same money of account, even though there are changes in the purchasing power of money during the intervening period. This postulate shows that the 'Rupee' or 'Taka', or 'Pound-Sterling' is a useful standard measuring unit. In other words, the financial records and statements of the company prepared on the basis of those business records should reflect the historical money costs. It is admitted by chartered accountants that this is an unrealistic accounting postulate as it implies that fluctuations in the value of money should be ignored. It is, therefore, suggested that management of the company may include in their periodic reports to owners comprehensive supplementary statements which present the effects of the fluctuation of money value upon net income and upon the financial position of the company.

According to this postulate accounting reports of the company should disclose that which is necessary to make them not misleading. This applies not only to business transactions and events that have occurred during the period covered by the financial statements, but also to material events that occur after the balance sheet date but before financial statements are released. Typical examples of such events are : sale or destruction of a fixed asset of value, a significant decline in the market price of raw materials, etc. which may have a material bearing on the probable future earnings and position of the business entity. In short, there should be a full disclosure of material known facts which will aid an informed reader of financial statements in interpreting accounting results. Disclosure of facts may be made in the body of the statements and in supplementary or accompanying notes.

The chartered accountant should not attempt to record business events which are so insignificant that the work of recording them is not justified by the usefulness of the results. In actual practice there

is no exact line of difference between material business events and immaterial business events. The decision depends on judgment and common sense. However, a general definition of materiality is as follows : A statement, fact or item is material, if giving full consideration to the surrounding circumstances, as they exist at the time, it is of such a nature that its disclosure, or the method of treating it, would be likely to influence or to make a difference in the judgment and conduct of a reasonable person.

The main purpose of this accounting postulate is to insure that the uncertainties and risks inherent in any business situation are given adequate consideration in books of accounts of the company. It is a guide to the exercise of judgment where evidence is conflicting or not clear, and suggests that matters of serious doubt be resolved in the dkection of understatement rather than overstatement. Thus, this postulate requires that reasonable provisions should always be made for potential losses in the realisation of recorded assets and in the settlement of actual and contingent liabilities. To put it differently, if the accountant has reasonable choice, he should ordinarily show the lower of two asset amounts for a given item, or should record an event in such a way that owner's equity is lower than it would be otherwise. Again conservation is said to imply the dictum - anticipate no profit and provide for all possible losses. Sales, revenue and income are not to be anticipated; and should be recognised only when realised i.e., on completion of sale and delivery. Besides, all known liabilities and losses should be recorded in books of accounts regardless of whether the definite amounts are determinable. However, the postulate should not be applied to make an uncompromising virtue of understatement of assets and income of the company. The intention is not to condone or encourage understatement in the face of evidence to the contrary.

Principles of Financial Accounting :

The accounting principles which underlie accounting records may now be studied here in detail. These are best expressed as "general laws or rules adopted or professed as a guide to action, as a settled ground or basis of conduct or practice".

Accounting postulates are derived from experience and reason; after postulates so derived have proved useful, they become accepted as principles of accounting. And when this acceptance is sufficiently wide spread they are referred to as the "generally accepted accounting principles". However, as applied to accounting practice, the word principle does not shows a rule from which there can be no deviation. Nor does it imply that it admits of no conflict with other accounting principles. The some important accounting principles are explained below :

The world Value' as used in accounting signifies the amount at which an item is shown in accordance with the accounting principles related to that item. Taken in this sense, balance sheet values generally represent cost to the accounting unit or some modification thereof; but sometimes they are determined in other ways, e.g., on the basis of market values or cost of replacement. The principles of valuation generally followed are as under :

Monetary resources and quick assets are carried on the balance sheet of the company at figures closely approximating present values. For example, cash and bank balances, marketable securities, bills receivable, sundry debtors or book debts represent the present realisable value as on the date of the balance sheet.

Productive resources like inventories of materials, stores, spare parts as well as land and buildings, plant and equipment etc., are shown in the balance sheet of the company at cost. In other words, such assets are shown at the original amount spent in purchasing the assets which represent their potential services at any given time. Obviously, the potential services of business assets are realised over a short period in the case of short-term productive resources called current assets like inventories and prepaid expenses, while long-term investments in land and buildings, plant and machinery, patents, etc. yield their services over a number of accounting periods.

Since a liability is an obligation to pay money or convey assets other than money or to render service, the valuation of liabilities on the balance sheet is in terms of cash or cash equivalent necessary to discharge the obligation at the given date. These obligations result from past transactions and need settlement in the future. Some of the common business.

The amount of business liability may be definite at the balance sheet date, or it may be dependent on future occurrences that are not controllable by the company, in which case the amount has to be estimated. If a reasonable estimate of the liability cannot be made, the existence of new liability has to be disclosed in the balance sheet of that company or as a note to it. However, these liabilities where the amount only is uncertain should be distinguished from other possible liabilities which may or may not become liabilities in the future. These are known as 'contingent liabilities' as their occurrence is contingent upon or dependent upon future business eventualities. Examples of contingent liabilities are as follows :

(i) Matters in pending law suits;

(ii) Claims of employees under law, the interpretation of which is uncertain;

(iii) Uncalled amount on partly paid up shares held;

(iv) Additional taxes proposed which may not be finally approved;

(v) Claims for damages in dispute.

If payment of a liability is to be delayed, it should be valued at the present discounted amount fixed by using a market rate of interest of the future payments necessary to discharge the obligation. In other words, if the liability is to be discharged later the appropriate amount to be reckoned is that sum which, if invested now e.g., in a sinking fund, will provide the sums needed at maturity even though in fact no explicit sinking fund or other investment device is actually used.

The word 'realisation' is used by chartered accountants mostly in reference to revenue although it may refer to earnings, losses, expenses, assets as well as liabilities. Revenue results from the sale of goods or services and is measured by the charge made to customers, clients, or tenants for goods and services furnished to them. It also includes gains from the sale or exchange of assets other than stock in trade, interest and dividends earned on investments and increases in owner's equity. Revenue is usually treated realised and hence recognised in the accounts of the company at the time of sale.

It is easy to understand that at some time in the productive process in fact continuously there is an increase in the monetary value of the resources used as inputs. This increase cannot be directly valued on a continuous basis. The realisation principle offers a solution to this problem. When a business acquires assets in exchange for money or promise to pay money the accountant assumes an even exchange of values, i.e., no gain or loss is supposed to occur at the time of purchase. In tracing the flow of costs internally, the assumption of an even exchange continues to control accounting procedures. For example, in allocating raw materials, labour and overhead costs to products and inventory, the allocation is limited to the actual costs incurred, and the fact that there maybe an increase in value beyond the costs is ignored. Somewhere along the line, however, there is objective evidence that the value of the output is more or may be less than the cost of the inputs. When such evidence becomes conclusive, the accountant stops, dealing solely in costs. The value of the output is measured and revenue emerges on the accounting scene. The realisation principle gives a set of rules to guide when a change in the value of output should be recognised in the accounting records. It is unrealistic, of course, to assume that the entire change in value occurs at a particular time. However, the flow of product in most businesses being continuous the error involved in the practical compromise with reality is not usually material and may cancel out period by period.

The most widely accepted evidence of realisation accompanying a sale of goods is : "a completed transaction with outsiders which transfers possession of, and usually title to the product in return for money or a promise to pay money at some future date."

From the legal point of view, a sale is completed by the passing of title. This is however a technical matter. A convenient procedure for looking revenue from day to day is usually employed without stressing legal niceties. The act of invoicing together with actual delivery or consignment to a common carrier gives the most popular occasion.

The reasons why revenue is recognised to have been realised at the time of sale and not before, are following :

- It is at the time of sale that the amount of revenue can by objectively determined and verified.
- At any point prior to sale, the expected sale price of non-standard goods and the ability to sell them at a given price are such uncertain factors that they do not, in the minds of most businessmen, constitute good enough evidence to justify an upward revaluation of the products.
- For most business firms, actual sale is the most important element in the earning process. Until a sale is made the future stream of revenues is in this sense 'unearned'.

Although revenue is generally recognised to have been realised at the time of actual sale, it should not be assumed that recognition of revenue is subject only to this rule. Accountants do also record revenues at many other stages in the productive process of company. Some such cases are discussed below.

Revenue recognised during production : Construction projects for dams, bridges, buildings etc. undertaken on a contract basis need considerable large period of time to complete. In such cases, production is the major element of the earning process; the final sale (recovery of the contract price) is assured by a binding contract subject to satisfactory performance by the producer. Under these conditions, to recognise revenue only at the point of final sale (i.e., completion of the construction work) would result in a very uneven income generation for various accounting periods. Therefore, as construction work proceeds, parts of the completed work are revalued and a percentage of the ultimate contract price is recognised and recorded as revenue earned from that contract.

Revenue recognised when production is completed: When goods dealt with are of standard grade or quality and can be sold on an organised market at prices that can be objectively determined at any time, inventories may be valued at selling prices i.e., at net realisable value. This implies recognising income as soon as production is complete. Examples of such goods are gold and precious metals, agricultural commodities, etc.

Revenue recognised when cash is received: It is sometimes argued by accountants that sale itself is not a satisfactory evidence

of realisation, and that revenue ought to be recognised only when cash has been collected from customers. The cash basis of accounting is really an application of the aforesaid view. On this basis, revenue is recognised only when cash is received and expenses are recognised at the time cash is paid out. This principle is also upheld under the 'installment sales' method, in which the sales agreement gives for payment in periodic installments. Postponing the recognition of revenue beyond the point of sale helps the business unit to postpone the reporting of taxable income and hence to defer the payment of income tax.

Under ideal conditions, all costs should be identifiable with some element of revenue, for it is by incurring costs that revenue is earned. But this method cannot be upheld in practice. Many costs have to be assigned or allocated to the accounting period rather than to the elements of revenue. Initially all costs incurred either produce some assets or provide some service the benefits of which are expected to yield present or future revenue. As the benefits are used up or expire, The portion of the costs applicable to the revenue realised is charged against revenue. The identification and measurement of costs which have expired and matching them against applicable periodic revenues is an important consideration in accounting. The accrual basis of accounting helps in the proper matching of accounting revenues realised with their related costs. The pattern of assigning costs and expenses to periods needs to be coordinated with the policies and circumstances controlling the realisation of revenue. Thus, expired costs to be charged against the current period revenue must be distinguished from unexpired costs inventories, prepaid expenses, deferred expenses and fixed assets to be charged against the revenue of future periods in order to present net income fairly. When more than one accounting period is affected, the cost must be allocated between the periods that benefit from the use or sale of the goods or services.

Basically, the principle of matching cost with revenue involves two separate questions: (a) What criteria should be used as a basis for associating costs with present and future periods; and (b) How shall the expiration of product and service factors be measured.

The time of revenue recognition is a primary determinant in distinguishing between expired and deferred costs. However, it may be impracticable and perhaps unnecessary to identify some specific costs with related revenues in a cause and effect sense. Therefore, the matching principle suggests that costs i.e., product and service factors given up should be related to revenues realised within a specific period on the basis of some discernible positive correlation of such costs with the recognised revenues.

All costs and expenses are related directly or indirectly to the earnings of revenue. When costs are directly identifiable with specific revenues they are written off in the same accounting period in which the revenue is recognised in the accounts in order to effect a proper matching of revenue and expenses. Costs that are common to more than one activity are allocated between those activities on cost insurance basis such as time or use factors.

The benefits received from some assets expire in comparatively uniform rates over a period of time that is predictable with a high degree of certainty e.g., prepaid rent, interest, insurance premium, etc. In these cases, the allocation of cost between expenses and assets is based on the ratios of the time elapsed and the remaining useful life to the total time period expected to be benefited from the cost incurred.

If the rate of asset expiration is erratic or unpredictable, reliable measurement is not possible. Hence a subjective basis of allocation is adopted for assigning the cost between expenses and assets. If there is substantial doubt or uncertainty as to whether benefits may reasonably be expected to be realised in future, the problem is resolved by charging the whole of such costs against current revenue.

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3

STANDARDISATION OF FINANCIAL ACCOUNTING

They are representatives of the countries which proposed the establishment of this committee in the conference which was held in 1972 in Sydney, and their supporters at that time. They are: USA, UK, France, Germany, Netherlands, Canada, Mexico, Japan, and Australia. The representatives of these countries are permanent and determine the admission of other countries, i.e., associate members.

This category comprises the member' countries who later on joined the committee.

Specialised in accounting and financial reporting like the International Coordinating Committee of Financial Analysts.

The IASC was set up to achieve the following objectives:

To formulate and publish, in public interest, accounting standards to be observed in the preparation and presentation of the financial statements.

To promote the worldwide acceptance and observance 1 of the international accounting standards issued thereby.

To work generally for the improvement and harmonisation of regulations, accounting standards and procedures pertaining to the presentation of financial statements.

The task of achieving the aforesaid objectives is entrusted to the Accounting Standards Board (ASB). This Board comprises

representatives of up to 13 member countries and 4 organisations having interest in the area of financial reporting. It could be interesting to note that the ASB members, in April 1989, were the accounting profession bodies of Australia, UK, Canada, France, Germany, USA, Netherlands, Denmark, Italy, Japan, Jordan, Korea, South Africa and International Coordinating Committee of Financial Analysts.

The accounting professional bodies of the member countries have taken upon themselves the obligation to support the objectives of IASC through the observance of the following matters:

To publish the international accounting standards which are approved by the IASC in their respective countries.

To persuade the accounting standards setting bodies of the member countries to comply with all material respects of the international standards, while formulating their own standards.

To persuade the business and industrial communities and the securities markets of the member countries to comply with requirements of their national standards, the latter being set up in the light of their international counterparts.

To persuade the professionals in accounting to comply with the standards approved by IASC while discharging their duties. In the event of departure from these standards, it should be clearly stated with appropriate disclosure of the consequences of such departure.

To foster the universal acceptance and observance of the international standards.

The standard setting process which is adopted by the ASB of IASC resembles the same process adopted by the FASB of USA in formulating its statements. This may reflect the influence of the US profession on IASC. In this process, the ASB of IASC selects the problem to be studied through the representatives of the member countries of IASC. Thereafter, it assigns a working party (Steering Committee) to study it. This committee consists of 4 members including 1 member belonging to each of the Board and the group of developing countries. After a thorough study of the issue concerned, the committee presents point-outlines to the Board. The

later, in turn, comments on those outlines and in the light of these comments the committee prepares a preliminary draft on the proposed standard. The Board reviews this draft and circulates it among all IASCs members for comments. In the light of the result of the study and the comments, the committee revises the exposure draft and submits it to the Board for approval. If it is voted by at least two-third of the Board members, it will be sent to IASCs members who, in turn, publish it in their respective countries for commentary purpose within six months from the date of issue. These comments are studied by the Steering Committee and thereafter, the final draft is revised and submitted again to ASB for approval which requires the favour of 75 per cent of the Board members. If approved, the draft will be issued as a distinctive standard. So far, the IASC has issued 29 standards. These standards along with their exposure drafts are usually issued in English language, and their translation to any language is possible with the need to mention that the translation is that of the approved text. The name of the accountancy body which has undertaken the task of translation must also be clearly mentioned. Further, there is no enforcement power to the standards issued by IASC. Therefore, its influence varies from country to country, depending on the degree of the compliance of the governmental agencies and other interested parties in the information reporting of the country concerned.

IASC's Contribution to the Development of the Accountancy Profession in Developing Countries with Special Reference to SAARC : The developing countries are reeling under the influence of the developed nations. This influence is attributed largely to the historical link between the developed nations and former colony, i.e., developing country. As a result to this rule, the structure and organisation of the corporate sector, company law and the accountancy profession in the developing countries resemble their counterparts of the developed nations. Furthermore, the developing nations have a backward accounting and information reporting system. These nations, being around 70 per cent of IASC members, expect a lot from this committee to serve their interests and solve their problems. As response, the IASC has a dual effect on the developing nations as follows:

(1) The IASC motivated these countries to establish their accounting standards setting bodies which, in turn, formulate their national accounting standards. These bodies promised to integrate, to the extent possible, the international standards of IASC *is* their standards in addition to take over of the charge of harmonisation and development of the accounting profession and reporting system within their jurisdiction.

(2) The IASC has issued many standards to solve the problems of the developing countries to enable them meet the informational needs of the interested parties efficiently. For instance, Latin, American countries suffer from the problem of high inflation. This problem is encountered by IAS-29 entitled 'Financial Reporting in Hyperinflationary Economies'. Further, other international accounting standards can also be used by the developing countries.

It is believed that IASC has not yet met the needs of the developing countries satisfactorily. Therefore, a special committee affiliated to the IASC conducted several visits during the period (1987-89) to many developing countries. The aim of these visits was to examine the degree of response of these countries to the international accounting standards. The committee concluded that:

Some countries adopted the standards as national ones without any modification. These countries give due consideration to the prevalent circumstances and business environments within their jurisdictions before they finally approve the standards as their national ones. Zimbabwe and Pakistan are a clear example of this category.

Some countries adopted the international standards after a thorough study thereof. Thereafter, the conflicting issues between the contents of the standard and the prevailing circumstances of the country are identified and the proper guidelines to avoid the practical problems that may exist, are stated in a forward to the corresponding standard concerned. This group of countries is presided by Malaysia and Malawi.

Some countries took more advanced step by issuing their own standards, each of which implies the compliance with the

requirements of at least two international standards. Tanzania represents a clear example of this category. In 1984 it issued 3 Tanzanian SSAPs complying with the requirements of 16 international accounting standards.

Some countries take the international standards as bases to formulate their national standards. They give the corresponding standard a due consideration while formulating their own. Some of these countries are Kenya and India. The ASB of the latter rises to integrate these standards to the extent possible, while formulating its own.

The South Asian Association for Regional Cooperation (SAARC) which comprises India, Pakistan, Bangladesh, Nepal, Sri Lanka, Maldives and Bhutan have been responding to the standards of IASC. Region-wise, their joint accounting association entitled 'South Asian Accounts Federation' (SAFA) promised to consider the IASC's standards while establishing the regional standards which are to be observed by the member countries for the sake of harmony in reporting and accounting practices across the border. But this association has not .practically achieved any material progress since 1984 because of the political differences among the SAARC members.

Nation-wise, these countries have variably availed the services of IASC while formulating their own standards. In India, the ASB of ACAI was established in 1977 as a response to the admission thereof to the IASC's membership. The ICAI also promised to do its best to propagate the standards of IASC in its own capacity, and to give a due consideration to these standards by integrating them to the extent possible while formulating the Indian accounting standards.

In Bangladesh, the Institute of Chartered Accountants of Bangladesh, through its Technical and Research Committee, adopts the IASC's standards; and modifies them, when necessary, to conform with its statutory requirements. In this regard, the committee studies the relevant international standards to the problem for which it is assigned; and issues an exposure draft to be submitted to the ICAB. In turn, the latter publishes the draft for the sake of the comments of public. In the light of these comments the

draft is finalised as a distinctive accounting standard. Since 1983, the ICAB has issued 12 accounting standards.

The Institute of Chartered Accountants of Pakistan (ICAP) has been more strict to the international accounting standards. Only 3 out of the first 24 IASC's standards are not adopted by the ICAP as national ones. The behaviour of ICAP, in this regard, is in conformity with the statutory requirements stated in section 234 (3)(I) of the Pakistan's Companies Ordinance 1984. The latter provision requires the listed companies to comply with the requirements of IASC standards while preparing and presenting their annual accounts.

In Nepal, Bhutan, Maldives and Sri Lanka, the accounting profession is very backward. This is because of the state of disorder in these countries due to the political problems, poverty and lack of the efficient human resources which is qualified to bear the responsibility of developing accounting profession within these countries. It is interesting to note that the Nepalese nationals interested in practising the accounting profession used to join the ICAI of India. It is because there is no institute which may offer training course in accounting in Nepal.

The standardisation in accounting and financial reporting practices is of a recent origin. The standard is technically viewed as the best alternative (accounting method and the corresponding technique) of an accounting treatment. If it is properly applied, the qualitative objectives of disclosure, viz., comparability, fairness and adequacy of the information reported, etc., will be enhanced.

Accounting standard setting has been a very effective mechanism in encountering the maladies and variations in accounting and information reporting practices on national, regional and international levels. Despite being young, accounting standard setting bodies have widely been spread on various levels in the globe. For the first time, standardisation was started in UK in December, 1969. Currently the British statements of practices are very influential. This influence is observed more in countries like India, Bangladesh, Pakistan and Middle East, etc., which were formerly under the rule of Great Britain. The development of the US standardisation has extensively occurred. Currently, the AICPA

issues these standards. The American standards are also very influential in the world. It is because of the economic and political strength of the USA. So far, it is observed that British standards are less in number than the American ones. The British ones are very durable and wide in the scope. They are viewed as general rules. Although the American standards surpass the British ones in number, the latter ones enjoy a better quality.

The accounting standards setting in India is a sample of the influence of UK. The Indian standard is deemed to be a relatively developed and independently formulated when compared to other developing nations. So far the IACA's council has issued 11 standards and 3 statements. The statements are mandatory since the date of issue, while the standards gain their mandate in a phased manner; currently, 7 standards are mandatory.

Many international conferences, forums, etc., were organised for the purpose of maintaining harmony in accounting and financial reporting practices around the globe. The formulation of IASC in 1973 has been the most fruitful result of these efforts. This committee contains two categories of membership, viz., the founders, which are USA, UK, France, Germany, Netherlands, Canada, Mexico, Japan and Australia; and the associate members (who joined later on). These members are required to endeavour to propagate the international accounting standards issued by IASC; integrate them, to the extent possible, in their national standards; and persuade the interested parties in financial reporting about their merits within the jurisdiction of the accounting professional bodies of the member country.

The IASC has tremendously contributed to harmonisation of the accounting and reporting practices on national level. Many countries were encouraged by this body to establish their own standardisation bodies. In respect of harmony, the standards of IASC are found to be a integrated wholly or partly by the professional bodies which represent their countries in the IASC's membership.

The procedures of standardisation adopted by various accounting standard setting bodies are quite similar. A consensus is maintained on identifying the problem; issuing an exposure draft

and publishing it for the commentary of the public including the professionals. These comments are studied thoroughly and in the light of the findings the exposure draft is revised and finally issued as a distinctive accounting standard.

The IASC has contributed to the development of accounting practices and enhanced the quality of information reporting in developing countries. Some of its standards were totally restricted on treating accounting issues of developing countries, e.g., IAS-29, 'Financial Reporting in Hyperinflationary Economies' for Latin American countries, etc. Other standards are also fit for the use of these countries. The IASC incited the harmony of reporting on regional level. The clear examples are the EEC directives which consider the relevant international accounting standards. The SAFA of SAARC has not yet materially witnessed any achievements, but the members thereof are availing the facility of standardisation made by IASC. In this regard, India formulates the contents of relevant accounting standards issued by IASC. Bangladesh seems to be less independent. It sometimes adopts the same standard as a national one with little modification. The influence of IASC is very apparent in Pakistan. The later is supposed to adopt all the standards in consonance with section 234(3)(1) of Pakistan's Ordinance, 1984. Finally, IASC has encouraged the international flow of cash when the investors hope of obtaining information easily about the investment chances in other countries. In spite of its tremendous contribution, IASC reels under the influence of the advanced countries like USA, UK and Netherlands and has no obligation on others to adopt its standards.

United Kingdom :

The Institute of Chartered Accountants of England and Wales (ICAEW) has shown a keen interest on developing the accounting and reporting standards to cope with the economic effects generated with the advent of the Industrial Revolution in Europe. To provide enough information to the owners, the balance sheet was prepared for the first time. To protect the owner's interests, the British Government promulgated the Companies Law. This law requires the directors of the entity concerned to provide reliable and fair information on the position and the performance thereof.

In 1942, the ICAEW published a series of recommendations on accounting principles implying description of the prevailing accounting principles and methods in practice. In 1960s it was observed that these recommendations included a great diversity due to the availability of various accounting alternatives that could be used by accountants while discharging their duties. The diversity range was widened because every accountant used to adopt a different set of alternatives in preparing the accounts of the same concern. It was observed that the results of performance and the financial position of an entity, if prepared by two accountants, used to differ startlingly. This situation created a common concern in the British street which ultimately led to a harsh criticism of the profession and a loss of confidence in the information provided thereby. The shareholders and creditors were in critical conditions because they were unable to get the reliable and adequately disclosed information to underlie their economic decisions. In 1969, the ICAEW published its first statement of intent, affirming that it would "establish definitive accounting statements". This statement led to the formation of Accounting Standards Steering Committee in the early 1970. A few months later, the Irish and Scottish Institutes of Chartered Accountants joined the committee. Thereafter, the leading bodies of certified accountants, viz., Management Accountants Association (1971) and Association of Public Sector Accountants (1976) joined the Committee. In 1975, the Committee was recognised and renamed as Accounting Standards Committee (ASC). A six member consultative committee representing the aforesaid accountancy bodies which are already members of ASC was formed. This committee, namely, Consultative Committee of Accounting Bodies (CCAB) is responsible for approving and

United States of America :

In the USA, the accounting profession has considerably developed after the First World War to cope with the changes in social, economic and political circumstances prevailed in First World War. This development came to adjust these changes with the informational needs of parties interested in reporting. It took the shape of modification and changes in accounting and reporting

conventions, principles and techniques. Their main purpose has been to maintain the fairness, truth and adequacy of the information disclosed in the basic financial statements so that the readers can form their correct decisions. The American Institute of Certified Public Accountants (AICPA), which was established in 1896, used to issue guidelines to the Certified Public Accountants (CPAs) from time to time. These guidelines have passed through various changes depending on the body, which used to issue them. Accounting Research Bulletins were issued by the Accounting Procedures Committee (APC) of AICPA over the period 1953-59. The Securities Exchange Acts 1933 and 1934. Vide these Acts, any company willing to trade its securities to the public is required to furnish its data in a prescribed form. Simultaneously, it also has to prepare prospectus containing certain information required under the SEC Act 1934. These Acts serve as rules, standards of accounting and disclosure in reporting the informational needs of the present and potential investors. It is pertinent to note mat the SEC has been closely working with the members of the US accountancy profession to develop and evolve the accounting standards.

Accounting Principles Board (APB) came into existence in 1959 after the Accounting Procedure Committee (APC) had failed to meet the needs of public at large. It aimed at regaining the confidence of the public in the financial reporting system prevailed up to 1959. Its aims were also to achieve the objectives of the programme set up by AICPA in maintaining the appropriate practices and narrowing the areas of differences through the minimisation of the alternatives adopted in reporting system. Briefly, this body was promulgated to "make or authorise the public pronouncement on accounting principles". From November 1962 to June 1973, it issued Slopinions and 15 accounting research studies. Since its establishment, the Board was facing sharp and heaped criticisms from many parties; the industrialists described it as rigid and interfering in the legitimate rights of the corporations. Further, it was accused that it quickly responds to the pressure of the outside parties. Its organisational structure was also criticised on account of having comprised part-time practitioners. Hence, other parties like companies, government, etc., were not represented in the body of

APB. These factors led to the loss of the faith of the professional, academics and the business enterprises in the Board. In 1971, the Wheat Committee was established to overcome the critics aroused against the structure and the functions of APB. Ultimately, the Committee proposed that the APB should be wound up and replaced by a new accounting standards setting body entitled Financial Accounting Standards Board (FASB) in 1972. This proposal was simultaneous with a report issued by the AICPA. The latter, FASB, was viewed as the most important step in the development of US profession since the APB was established.

The FASB has the same characteristics, which were proposed by the Wheat Committee. It enjoys complete autonomy because of being a private body. But it is affiliated to the Financial Accounting Foundation (FAF), the latter being a private agency in the USA. Hence, both FASB and FAF are free from any political pressure. The FAF designates the Chairman of FASB who, in turn, selects other staff members as follows: 3 CPAs and the 3 remaining members are selected from other professions/other sectors provided that every member should have extensive knowledge and experience in financial accounting and reporting. The 7 member Board is supported by a task force to assist it in setting up priorities and defining the problems while discharging its duties. The Board also enjoys a broader support of the Financial Accounting Advisory Council whose membership comprises 20 experts representing the profession, the industry and other interested parties. While formulating the standard.

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EFFECTIVE FINANCIAL ACCOUNTING METHODS

The asset is assumed to have a life of so many working or producing hours and each of the period is charged with total proportion of the total estimated depreciation which the hours that the asset is used during the period bear to the total estimated working hours. In budgeting the depreciation charge for a year the number of productive hours each asset will be used during the period will have to be estimated. It is counted in terms of working hours. This method is used for costly machines where a fair estimate of the life of the machine in terms of working hours can be formed. The depreciation is calculated per ton according to the output of the year. Under this method a minimum annual charge is sometimes adopted irrespective of the fact that production has not reached the minimum. Those assets the use of which can be measured in terms of miles, e.g., a car. This method appears to be fair as the depreciation charged will be according to the advantage taken from the asset. There are difficulties of keeping records in this method. When a machine is older its production may be less valuable because of poorer quality or reduced demand for the product. A use charge on declining unit basis may then be appropriate for the earlier units of product on being charged at a higher rate than later units produced when the machine is older.

Revaluation Method :

Many persons call it appraisal, inventory, or annual valuation method, where any mathematical basis of depreciation is not possible, the assets are revalued at the end of the financial year. Because it is not possible to estimate the life of such assets with any precision, this method equated depreciation with the loss of asset value and in effect involves a determination of the value that remains in the asset at the end of each period expired. The difference between the book value of such assets and the value after revaluation is the measure of depreciation. If the valuation exceeds the book value the difference is not taken into account. The valuation must be according to 'going concern'. This method equates depreciation with the loss of the asset value and in effect involves a determination of the value, that remains in the asset at the end of each period rather than the service value that has expired. Valuation is done by someone having knowledge of the asset.

It is useful, however, in valuing fixed assets like small tools, livestock, patents, copyrights and other assets of this nature which are constantly changing and whose period of life is most uncertain. This method is used only in case of total lines, readily movable from place to place where it may be too much to maintain accounts of each single items in which breakage and theft rather man usage or time are the effective factors of depreciation would be difficult to apply accurately and where no other method can be employed to secure satisfactory results at the end of each financial period. This method is useful for depreciation on small tools of manufacturing company.

Following are some other methods of calculating the amount of depreciation. These are :

In this method an endowment insurance policy will be taken on the life of the asset from the insurance company which will agree to pay a definite sum of money at the end of a specified period in return for certain annual premium payable to company.

Job Method :

Whenever special equipment is purchased for a particular job or co..tract the difference between the cost and salvage value of

such equipment is charged as depreciation against the job or contract for which it is purchased. Such a method of calculating depreciation is often referred to as the job method.

Combination of Time and Usage Factor :

It is possible to estimate the percentage of depreciation of an asset which is a function of time and the percentage which is a function of usage then a combination of some of the methods is used. For example, if the depreciation of a machine is judged to have caused 50 per cent by usage and 50 per cent by the passage of time the depreciation formulas for the charges.

Let us assume, to illustrate this possibility, that an asset costing Rs. 10,000 will presumably have no net salvage value and may be expected to last 5 years and furnish 10,000 units of service. With these conditions management may decide to show each year's depreciation in regardless of physical activity, and also show that fraction of half the depreciation amount of Rs. 5,000 which the number of service units received during the years bears to the total expected throughout service life.

An alternative procedure is to determine depreciation for entire group of assets by use of a single rate. The basis for grouping may be similarity in life estimates or other common characteristics or it may be broadened to include all assets within a functional class such as office equipment. When depreciation is computed on the basis of a composite group of assets of different life spans, it is necessary to develop a rate based on averages. This may be done by computing the annual depreciation for each item in the group and dividing the total depreciation for the group by the total cost of the assets.

As new assets are added to the group and old assets are retired, it is assumed that the mix remains relatively unchanged. No gain or loss should be recognised on the retirement of item within the group. Instead the asset account is credited for the cost of the asset and the accumulated depreciation account is debited for the excess of cost over the amount realised from the discard. Any deficiency in the amount of depreciation recorded on the shorter lived assets is presumed to be balanced by excessive depreciation on the longer

lived assets. When composite rates are used, they may be applied against the total cost of the group of assets on some reasonable time basis or some reasonable assumption may be made regarding the timing increases and decreases in the group. A common practice is to assume that additions and retirements during the second half occurred on the first day of the following year.

Regardless of whether depreciation is computed for each individual unit or for composite groups, the effect of obsolescence or inadequacy on life of an asset is particularly difficult to forecast. Any system that provides for the allocation of depreciation in a systematic and rational manner fulfils the requirements of good accounting.

Under this method all the assets are grouped together and a flat rate of depreciation is charged. This method is very unscientific and should not be adopted. It is not permissible under the Companies Act of India.

Utility companies usually create their depreciation reserves by setting up a percentage of their gross revenue. At first thought, this appears entirely illogical as it would seem that the amount of depreciation depends upon the cost and life of the assets rather than upon the amount of revenue produced by them. But on the other hand, the life of fixed asset is influenced by the extent to which it is used so that the gross revenue basis of computing depreciation may be defended by this reasoning, the more gross revenue, the more use, the more depreciation. For tax purposes, however, the depreciation must be computed on the basis of the cost and life of the property.

Harold Bierman Jr. has developed rate of return method of depreciation which is based on the present value (discounted value) of future stream of revenues expected from an asset.

In this method the total depreciation accrued as of a particular date can be determined by physical examination of the asset. This method has serious objections especially as a means of determining successive periodic charges. The physical condition of an asset often gives no clue of the extent of elapsed service life. This method throws light on the question of remaining life on a physical basis

but it is inadequate as a means of recognizing the impact of obsolescence and other non-physical factors. For many kinds of depreciable assets, no method of examinations are available which will furnish reliable evidence of either expired or remaining life.

Some persons recommended from time to time for the adoption of depreciable rate represented by various well-known curves including the vertical parabola, the logarithmic curve, the ellipse, the horizontal parabola, the cubic parabola, and on this assumption it is argued that as possible no single curve represents the manner in which depreciation occurs, the problem should be solved by the adoption of several curves. It is obvious that such methods would give no useful results.

In the case of wasting assets such as mines and quarries depreciation such a sum is provided each year for depreciation as represents the expired capital outlay on the basis of output compared with the estimated total contents of the mines. This method provides that amount should be written off in the production account each year according to the number of units actually obtained. This method is used in the case of mines, quarries, etc., where an estimate of total quantity of output over the life of asset should be available.

In this method, the actual original cost of the asset is ascertained and to this amount is added the estimated cost of repairs over the whole life of the asset, the scrap value of the asset at the end of its life being deducted from the add amount. The result shows the total cost of the asset over its whole life and dividing this by the estimated number of years of the life of the asset, the result is annual depreciation provision.

This method is rejected on the ground that repairs and maintenance cost should be dealt with separately. Its combination with depreciable cost serves no purpose because it will not affect the basic factors of depreciation.

Under this method the cost of plant units (less salvage) is charged to expenses in the year in which the asset is retired from services. Under the replacement method the original cost of fixed asset is retained in the asset account and the cost of all replacement replacement method is somewhat analogous to the use of life in

costing inventories in that the asset account will always reflect the cost of the first unit of each type of property acquired by the company. Under the retirement method the property account will show the cost of facilities actually in use.

This method is strongly advocated by some public utility companies. In an economy where there is good deal of inflation, as asset may be purchased today at a certain price, its estimated life being say 10 years. At the end of 10th year the cost of replacing the asset may increase by say 75 per cent. Now if the depreciation is charged on the basis of original cost, there might be difficulties as the historical cost is not sufficient to cover the full replacement cost. Under these circumstances this method is followed by some accountants. This method does not conform to good accounting practices and is criticised on the grounds that no depreciation will be charged against revenues until the first retirement occurs. Not only is the income misrepresented in the early years of service life, but at all times the full investment in the productive facilities will appear on the balance sheet despite the fact that portion of service life has expired.

Now it is argued that the charge to operations in each period will be determined by the number of property units replaced during that period and the character of the replacement. The probability that the cost of replacements or retirements in any period will coincide with the cost of asset services used during the period is rather slim. The force of this objection is increased when it is likely to vary in response to the availability of funds for capital expenditure and the stage of business cycle. Furthermore, the value of the asset will by no means be equal to that of the one replacing it. There would also be an uneven distribution of the burden of depreciation as only in the year of replacement does revenue bear to renewal charge entirely relieving most of the years and overcharging that in which the replacement takes place.

The method is used public actuly explained in part by the fact that utility plants are typically composed of large numbers of interrelated elements whose individual costs is small. Under these conditions service life is difficult to estimate and the distinction

between maintenance and replacement is often difficult to draw. A wide variety of methods have been developed for measuring depreciation. Like inventory methods, depreciation methods should be evaluated in comparison with each other according to the following general criteria :

It should provide a useful measure of income for the current period as a basis for appraising past performance. It should match the long term asset cost which expires during each period with the periodic revenues to which those cost are related. It should furnish information useful to the management in planning future operations. An important application is its effect on the past and planned rate of return on assets. Depreciation has dual effect on its measure. Its amount for the current period is a deduction in computing income and the unexpired amount of the asset which the method shows as being related to the future in one of the assets upon which the rate of return is computed. It should be relatively simple and inexpensive to apply. The effect of the depreciation method upon the periodic amount of income tax expense is also a critically important matter because of its complexity. It is not usual for a business to use one method of depreciation for computing Its taxable income and another for measuring its business income. It should help to provide a useful measure of financial plant and equipment which is used in measuring the financial position of the business is the difference between the original cost and the total amount of accumulated depreciation on the depreciable assets which are acquired for use rather than for sale. It should help to provide a useful measure of the income of future accounting periods. The understated cost of an asset at the end of the current accounting period is postponed to future periods in which it is subject to expiration. It should be useful in promoting effective use and protection of the economic values represented by the depreciable assets. The policy of distinguishing between capital and revenue is also very important in this connection. It should be objective, orderly, not subject to manipulation for the purpose of influencing reported results artificially.

Various methods of charging depreciation followed by a business organisation will have quite different effects upon the

finances of the company. No one method of depreciation will ever satisfy all persons and no one method exists or will be designed which will apply equitably to all the different kinds of fixed assets. An appraisal of methods frequently develops into an argument in which personal preferences are emphasized. Practical operating conditions in any one plant should be the primary force in arriving at a decision concerning the correct method to adopt under those given circumstances.

Since the managed accounting resources are relatively scarce and limited, anyone involved in some way in the management of resources is necessarily concerned with the effective utilization of the resources available to him in discharging the economic functions for which he is responsible. Production costs - direct and indirect - can become a threat to competitive survival without constant vigilance on management's part. Regular, selective pruning is required to weed out unjustifiable expense, yet at the same, time retain the occasional increase expected to produce long-term savings. In any business, but especially in those in which prices are established competitively, costs must be controlled if profits are to be realized year after. There are many indications that American management in general is aware of the importance of cost control. The team of prominent British accountants who visited American companies to study the ways in which management used accounting services reported (Management Accounting, Anglo-American Council on Productivity): "When Ernest R. Breech was made chairman of the board of directors of the Ford Motor Company in recognition of his contribution to the great improvement in that company's condition, he said that early in his career he had adopted the view that whether a company prospered or failed depended to a large extent on cost controls. Since owners are basically dependent upon the presence of profits for dividends, and since most owners make investments for long-run investment and not for speculation, the effectiveness of cost control techniques and actions affects their return on investment and the long-run safety of the principal contributed. Workers have a general and specific interest in the effective utilization of resource by business firms. In a general sense they will benefit through the increase in the availability of consumers

goods at reasonable prices. In a specific and direct sense, they will benefit through continuous employment and increased compensation. Labour cost control does not mean reduction of wages but increasing productivity so that labour cost per unit is decreased, or at least not increased, as absolute wages increase. Jones reports results mutually satisfactory to the company and its employees. Through the operation of our incentive plan . . .we have increased our machine efficiency by one-half . . . our production flow has been smoothed, resulting in a cheaper operation and at the same time satisfying a large customer demand. A notable reduction in delays and downtime has been accomplished. Our operators take pride, even a proprietary pride, in their work and have substantially increased their earnings.

According to Blocker and Weltmer (Cost Accounting) creditors of various kinds are concerned with, and often seek, information concerning the presence and effectiveness of cost control systems. They add: "It has become a policy of many banking institutions that no loans will be made to industrial firms unless such concerns have complete cost accounting systems which produce reports showing satisfactory trends." The level of costs incurred by a particular firm and by a particular industry affects the customers' standard of living through the prices paid to cover the costs. Firms or industries with excessive costs, and perhaps excessive prices, are potentially unstable and face decline or failure. Such declines and failures have a disruptive effect on the economy. On the other hand, St. Peter expresses the conviction that those business leaders who succeed in reducing operating costs are not only improving their own economic status, but they are also further expanding job opportunities and contributing substantially to a prosperous and stable economy.

Certain concepts are basic to any plan to achieve effective utilization of the productive resources of a firm. These concepts are analysis, control, budgets and reports. The first two concepts are discussed immediately below, while the last two are discussed later in this section.

The basic meaning of analysis is "the separation and examination of anything to distinguish its components parts and study their relationship to the whole."

In cost accounting, analysis involves the separation and examination of physical facts, or dollar cost data, to distinguish particular measurements in either physical units or type and magnitude of costs. The purpose of analysis is to obtain control over costs. Analysis aids in the discovery of defects in methods, physical facilities, manpower and organization.

Control is described in a few words by Lang-McFarland-Schiff (Cost Accounting) as "the guidance of the internal operations of all divisions 'of the business to produce the most satisfactory profits at the lowest cost." The Cost Concepts Committee of the American Accounting Association, as reported by Anthony. The essential nature of control involves not so much the correcting of past mistakes as the directing of the current and future activities in such a manner as to assure the realization of management plans. In a sense, control becomes methods of motivating various members of a business organization to assure actions on their part which are to the benefit of the firm. Normally, such action will involve the carrying out of the adopted plans of management.

These statements indicate that control involves the making of decisions, based on relevant information, which lead to plans and actions that improve the utilization of the productive assets and services available to management. Most authorities agree that planning is the basis for control, information is the guide for control, and action is the essence of control. This applies to small firms as well as those of moderate or operations. Others are more refined and formal, the reuslt of careful accounting or statistical analyses, or engineering study.

Usually, none of these techniques stands alone as the only control device. Rather, combined techniques are used, often to complement each other, in groups appropriate to the cost control problem at hand.

In order to ensure that the control devices provided will be understood and used, many companies let those responsible for performance take an active part in developing the control techniques (see "Human Reactions to Standards and Controls" in this section).

In the small plant, without adequate staff personnel, or the large plant with a multitude of operations, gradual development is

the most feasible approach and in the long run probably the soundest approach. Keller states, for example:

In tackling the problem, take one item or operation at a time, study it, establish basic data for measurement and comparison, and then use these data to provide management with specific ways and means for controlling and reducing the costs. Standards and budgets are the most effective tools for accomplishing this. However, the greates mistake which could be made would be to attempt to set up a complete system of standard cost accounting and budgetary control and put it into operation throughout the plant as of one date. The area selected as a starting point would be one in which a major segment of the total cost of production is being incurred.

Lang-McFarland-Schiff (Cost accounting) distinguish two kinds of control, control at the source and control through reports. They indicate the important role visual observation still plays, while recognizing that it is not adequate by itself.

Control at the source takes place at the operating level, usually on the basis of physical, on the spot observation by the foreman or other executive responsible for the performance of the men under him. Because of the size and complexity of modern business, control at the source is not always possible and even where it occurs it is supplemented by reports at different managerial levels where each level is held responsible for action at the next lower level.

Visual or physical methods of inspection and the visual alertness productive workers or service workers, such as departmental salvage men, can provide timely clues within each work day to minimize losses due to faulty method or faulty materials. Division recommends taking advantage of these timely clues to increase cost consciousness and the understanding of the cost effect of specific causes of higher cost.

Cost accountants and other staff personnel responsible for installing and operating a cost control system need to consult frequently with first line foremen or department heads so that the system will provide significant information which is helpful in improving the utilization of men, materials, and machines. Dudick emphasizes the primary importance of a through basic

understanding of physical operations and of the interchange of ideas between the cost accountant and production supervisors.

Since they are a quantitative expression of actual performance, actual costs play a role in measuring performance to obtain clues for cost control actions. It is generally recognized, however, that past actual costs are not the best yardstick for measuring current performance. Oles expresses this viewpoint as follows:

It may be said that there are three outstanding arguments against simple comparison of present with past. First, a comparison with totals made up of details which have altered is a poor comparison. This is merely another way of saying that the comparison upon which so many executives place great stress is of no real value, since it deals with an entirely different set of conditions. Second, prior year figures may be difficult to compile in accordance with the current classifications used for accounting. If any semblance of similarity of basic data is to exist, an attempt must be made to reclassify prior figures, taking into consideration not only changes which have occurred but the rearrangement of data required to meet present conditions. Third, prior year records of performance may never have represented satisfactory performance. There is nothing in prior year figures, as such, to indicate that they are worth using as a standard of comparison. These standards must be independently constructed, and neither budgetary control nor cost reduction can be effectively secured without them.

Some contend that even a reporting of actual performance compared with a budgetary or standard yardstick does not of itself provide control. Anthony (Accounting Review, vol. 32) states that it is primarily the foreknowledge of supervisors that they are going to be measured which produces control.

Cost reports describe what has already happened; therefore they cannot be used to control events, since no one alter or undo what has already been done; therefore, a control report cannot really control anything.

One explanation of this apparent paradox is obvious, namely, that cost reports provide the basis for actions such as praise, criticism, or suggestions for change, all designed to improve future

performance. We think, in addition, there is another, more subtle way in which cost reports influence performance, and indeed influence the very performance being reported on. Advance knowledge of the fact that a report on performance is going to be prepared can be an important stimulus to good performance on the part of the person being judged.

Regular reports of physical measurements (amount of material used in gallons, pounds, feet, etc. amount of materials wasted, units spoiled, labour or machine hours used, idel man or machine hours, units transferred from operation to operation and to finished goods) are necessary for effective quantity control, which is the basis for proper accounting and cost control. Gillespie (Cost Accounting and Control) stresses the primary importance, and some uses, of physical measurement.

Quantity control is intended to provide safeguards at a number of points. In the first place, it is a safeguard of the accuracy of the unit product costs computed by the cost department. If the quantities on which unit costs are based are wrong, the unit costs are wrong. Quantity control is intended to ensure the accuracy of quantities used by the cost clerk.

Quantity control is a means of protection against excess incentive wage payments. When a piece-rate wage payment plan is used, the quantities reported to the payroll department for labour payment are usually checked against quantities produced as shown in the production and cost records. Likewise it provides indication of shortages in materials on hand that may have been caused by loss, theft, unauthorized use, or unauthorized shipment.

While such information is customarily only used monthly to derive figures for the flow of costs through appropriate general ledger accounts, it needs to be known daily and weekly in order to achieve better utilization of a firm's resources through the efforts of the production planning department and of those executives and supervisors concerned with taking cost control actions in production operations.

Through the use of statistical sampling techniques and probability theory, physical measurements of actual use can be

related to one another or to standard physical requirements. Such statistical interpretation can assist management in focusing on those factors of production which are out of control.

Statistical methods are applicable where measurements are subject to variation. Measurement of spoilage, waste, man-hours required per unit, etc. will vary in an operation despite careful planning and attempts to standardize and control all the variables of production. Men, materials, and machine are fallible, and working conditions are not always identical, and so all are subject to individual variations. The laws of probability have been applied in so many of the physical and social sciences that it may said that the laws of probability provide an almost universal yardstick for measuring and controlling variation. Simpling techniques, which are based upon the mathematical laws of probability, offer a good deal of promise for increasing the effectiveness of managerial accounting and for reducing the cost of cost control.

In recent years statistical investigations have been made and applications developed and refined by various types of businesses, governmental agencies, and public accounting firms. This experience has served to establish the applicability and usefulness of statistical techniques over a wide range of problems. Hart asserts that this demands that members of the accounting profession re-examine their data processing criteria:

In data accumulation and processing, unnecessary costs are often incurred because accounting standards of accuracy are used in the quantification of data for planning and control. However, management seldom needs the same high accuracy for control, which is required when accounting for the company's cash.

Hence, before information is gathered and processed, accountants should determine just what degree of precision is required for planning and control. In so doing, they cannot afford to neglect scientific techniques which are being successfully used in other professions where the problems of analysis and interpretation are just as difficult as in the accounting field.

Vance predicts that relatively small business firms, which cannot afford elaborate control techniques, may find that sampling techniques will prove a satisfactory substitute:

Where a substantial volume of product is made or some process or operation is done frequently and no continuous, formal cost accounting is done, we can gather cost information and, therefore, exercise cost control by estimating the unit cost from a sample. For example, we may take a sample of time cards for a certain operation and estimate the unit labour cost from them for the period in question. Note that this invokes all the advantages of other applications of sampling theory. We can determine how large a sample to take to give the degree of precision we want n the estimate. We can balance the cost of the sampling against the quality of the result we want. We can use the devices of scientific sampling to determine what items to include in the sample. We can eliminate, if we are careful, the biases that result from use of personal judgement alone in selecting and evaluating samples. In view of the fact that complete, formal cost accounting is often considered much too expensive to justify its use in small industrial operations, this should appeal to many cost accountants and to many management as a means of obtaining cost data scientifically at a very reasonable cost.

A standard cost system is one of the most important tools used in controlling costs. Three sections of this handbook are devoted to this subject, the sections of setting Standard Costs, Operation of Standard Costs, and analysis and control of Standard Cost Variances. The last section includes a discussion of the use of statistical techniques in determining which variances from standard require investigation and corrective action.

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5

CORPORATE ACCOUNTING TECHNIQUES

The business organisation ABC incurred many other expenses like rent for office and showroom, maintenance of office staff and other miscellaneous expenses for selling goods. Without incurring these expenses, perhaps the firm could not have managed to execute sales and do business. These expenses were:

Net Income or Business Income :

This amount of Rs. 2,600 is the total of expenses for doing business or operating expenses. If we deduct this amount of 'doing business' from the 'Gross Profit' of Rs. 14,400, we arrive at 'Net Profit' of Rs. 11,800. This is also the Net income of the business concern and also known as the 'business income'.

Depreciation of Fixed Assets :

It would be quite appropriate to refer here to the 'invisible expense' in the form of loss of value in the fixed assets like machines and tools, furniture or buildings, etc. These fixed assets are used for quite long periods-sometimes ten to fifteen years. Obviously the total cost of such fixed assets cannot be considered either as merchandising cost or cost of doing business for a year. It has to be spread over the years of life to these items. That part of the cost of these assets which is to be accounted for during an accounting

period (say a year) is called 'Depreciation'. Depreciation is the loss of value of any fixed assets by its use and wear and tear during the period of accounting. And obviously this has also to be accounted for before arriving at business income.

While discussing above the business income, merchandising cost, gross profit, expenses of doing business, net profit or net income, we took the example of a business organisation ABC, which falls under the category of Industry. There may be other business units falling under the category of Traders or which provide commercial services or advisory services. The principles for calculations remain the same. The number of items and the amount of expenditure will be more under merchandising cost for an industry, whereas there shall be more items and amount of expenditure under 'expenses of doing business' for a trader. The same will be still greater in case of business organisation providing commercial or advisory services. Let us be still more clear and have an illustration.

Business Income :

Business Income is the balance income which remains after deducting the following from the amount received from sales and other profits (commission, Interest, etc.):

(i) Cost of goods sold,

(ii) Expenses incurred during the business operations (Management and Operation expenses),

(iii) Depreciation on assets, and

(iv) Other business losses (Loss by fire).

Thus net income for the period is the excess of revenues realised luring the period by a specific business concern over the cost expired (including losses) during the same period, it must be noted mat private income of the owners is not included in business income.

Merchandising Cost or Cost of Goods Sold :

The cost of goods sold includes all expenses incurred on goods sold up to the stage of their being made available for sale. For calculating cost of goods sold it is desirable to find the value of stock in the beginning as well as at the end of the year. If we include

net purchases i.e. purchases, minus purchases return in opening stock, it becomes the cost of goods available for sale, it also include all direct expenses like wages, cartage and local taxes are also included in it. We deduct closing stock from the cost of goods available for sale, then it remains the cost of goods sold.

Financial position of a businessman is assessed through his possession the cash and other assets that he owns. But if what he owes others, be more than what he owns, he would become insolvent. So it is not alone the quantum of his cash and other assets what matters, but its relative excess over his liabilities. Likewise if the assets of a business organisation are substantially more than its liabilities and capital the financial position of the business organisation is assumed to be sound.

The capital is the amount invested by the owner of the business in the firm. If after a certain period the capital increases and goes on growing the financial position of that business organisation is said to be continuously improving. On the other hand if on account of continued losses the capital goes on reducing, the financial position is said to be not good. Continued losses year after year may lead to insolvency of such business organisation. So if a business organisation earns profit, year by year, the financial position of such a business organisation is said to be good.

For assessing the soundness of a business organisation, another point is to be considered. Business operations go on every day and every organisation pays its creditors and receives from its debtors. If a business organisation is not in a position to pay off the claims of the organisation either immediately or at short notice, the financial position cannot be treated as good. Such a situation is possible even though the assets may be quite much more then the liabilities and capital. In other words liquid assets should always be sufficiently much more than the sundry creditors, to maintain sound financial position of a business concern.

Thus the two criteria of judging the financial position of a business firm are :

(i) Profit-earning capacity, i.e., the ability of the business organisation to earn profit.

(ii) Ability to pay off debts promptly, *i.e.*, the organisation business should have sufficient funds to pay off immediately the debts that become due to it from time to time. This is known as liquid ratio or the acid test ratio.

Let us take an example. Shyam Ltd. started business on 1st Jan., with Rs. 60,000. At the end of the year they earned Rs. 35,000 as net profit. This 'net profit' helps assess the financial position of the firm by enabling one judge the 'profit earning capacity' of the firm which is say 25% The financial position can be considered quite good as this earning ability is quite higher than normal rate of investments in bank and elsewhere. There is yet another important point to be considered. That is the firm's capacity to pay off promptly the debts mat become due. Now suppose this organisation invested most of its resources in long term investments and is not in a position to pay off to the creditors for goods bought, or salaries and wages, *etc.*, on time. In such a situation the financial position of the organisation cannot be considered to be good, in spite of the fact that the total assets may be more than liabilities and the organisation commands greater profit-earning ability. It is therefore very essential for a business organisation to stay 'solvent', *i.e.* be able to pay promptly any debt that becomes due to it. That is possible only when the firm keeps its cash and liquid assets sufficiently much more than its current liabilities.

"Often income is secured at the expenses of security control, and the security and control are maintained by sacrificing income". As such most financial structure represents a compromise between the different objectives.

The analyst will like to determine whether the capital structure of a company is in fair proportion to the assets possessed by the company. As to what proportion of debt or net worth is reasonable, no hard and fast rule can be laid down. The general principle to be kept in mind is that debt should be kept within such limits that the company can face adverse possibilities of business depressions without fear of insolvency. It must be remembered that funded debt is considered always hazardous. According to H.G. Guthmann, for the public utilities, the maximum percentage for funded debt in the

capital structure may be set at 60 per cent. For example, if a company has earned 6 per cent on each Rs. 100 of investment it could offer to pay an interest rate as high as 5 per cent on each Rs. 60 of borrowed funds and still show interest expense of only Rs. 3 or one-half of earnings. The general opinion however is that debentures should occupy a similar place in the capital structure. It is therefore necessary for a company to maintain its capital structure in such a way that when profits for a particular period are insufficient.

When we want to start writing accounts of a new firm, we must bring the highlight belt on the "Create Company" and press enter button on the keyboard.

- Name, here the name of the firm whose accounts we want to write is to be entered e.g. Balaji Books.
- Then there would be "Mailing Name." Usually Company name and Mailing Name are the same. But if the firm wants to use a short name it can write that name here e.g. "Balaji." Generally nothing is written in mailing name.
- Now Address of the firm is to be given. Of course, it is not compulsory to write address. The firm may write it or may not write it.
- Income-tax number suggests PAN number which is Permanent Account No. allotted by Income-tax department. If the firm is not paying income-tax, there will be, no PAN. But for partnership firms and companies, it is corr.puls6ry to file income-tax returns and so they have to obtain PAN. Of course, it is not compulsory to write PAN number here.
- Then there are two sales-tax numbers : one, from the state where the firm is situated and second, inter state sales-tax number. This inter-state sales-tax number refers to the registration number allotted by Central Sales Tax Authorities. This is also optional.
- Then there is Currency Symbol suggesting the short form of currency in which accounts are to be written. Tally shows Rs. by default. Of course this can be changed to pound (£) or dollar ($) also.

- Now there are three details to be filled. Maintain will show Accounts only or Accounts with Inventory or Inventory only. As we are writing only accounts, we will select Accounts only by pressing enter button, when the highlight is on Accounts only.
- Now the financial year for which we want to write accounts will have to be written. There one date will be already there, say, 1.04.04. Now-we want to write accounts of Financial year 2006-07. So we will type 01.04.2006 and the same date will automatically appear with Books beginning from also. For changing the given date 01.04.2004 to 01.04.2006 we have to press F2 key in the button tool bar given on the extreme right of the page. There will appear date on which we can type 01.04.2006.
- There is details about "Use Security Control" means whether you want to keep your accounts and use code number for that. By default No is already written. So we will not change it and proceed further.

In the second part of this page there will be certain additional information, which are preset in the software and we do not make any change in it. (1) Base currency symbol means the symbol of the currency in which accounts are to be written. There Rs. is written by default and we do not make any change. Then there is on item of 'formal name' of currency, where Rupees is already written, so we do not make any change, and we proceed by pressing Enter key. In the next item it is asked as to in how many decimal points we want to have the results. There 2 is already written and that is enough. So we do not make any change. Those who want to have more than two decimal points in accounts can make the change. On the left hand side it is asked whether we want to show amounts in millions. There 'No' is written because in India we do not use millions, (million - Ten lacs 10,00,000) Now it is asked whether we want to put a space between Accounts and Symbols. The answer is already written in the software as "yes". We generally use space between Rs. and amount. For example, Rs. 80,000. So we do not make any change.

When all these details are filled up, the name of the firm is included in the list of "Select Company". Thus the company is said to have been created for accounting purposes in the Tally.

Now press the Escape (Esc) button on the key board and come to Gateway of Tally "Accounts Info."

Now, we have to start writing accounts. The first thing that we have to do is to open necessary ledger accounts. In the above table, bring the highlight belt on Ledgers. For this purpcxse use arrow key on key-board and press arrow key in the lower side and come to ledgers Then press 'enter' Key.

Suppose, we want to open Purchases Account. For that against name, type "Purchases Account." Then there would be reference number, which you may fill. Now going downwards there will be the word "Under" which suggests the group under which that account is to be shown. Here by pressing space bar on key-board, the list of groups will appear, which shows groups of accounts under which a particular account is to be shown. Here type Purchase A/c. Similarly prepare Sales A/c.

Now open the personal accounts of traders or suppliers from whom goods are purchased. Against Name, write the name of one of the suppliers and for our purpose put a small - (dash) and write P beside it to suggest that he is a person from whom we purchase goods, Now, against "Under" write the name of group "Sundry Creditors." Thus open accounts of all suppliers.

Similarly, we open accounts of our customers, those to whom we sell goods. Beside it write the word - S to suggest that they are the persons to whom we have sold goods. Now move to the heading "Under" where we have to show the group of accounts. Here in the list of groups we give enter to "Sundry Debtors" and the group Sundry Debtors will appears.

If the firm is a sole trader, the Capital Account is to be opened and it has to be "Under" Capital Account group. Similarly open Drawings A/c. If it is a partnership firm open separate capital account of each partner. Open accounts of fixed assets like Land and Buildings, Machinery, Furniture etc. and show "Under" the group "Fixed Assets." Open Investment A/c "Under" the group

"Investments." Among current accounts, Cash A/c is not to be opened, because it is ready in the software, divided into two parts : Receipts and Payments.

When entries for cash transactions are to be made, by pressing Esc. key, come to Gateway of Tally and then bring the highlight on "Voucher Entries" and press enter. In voucher entries page on the right side page, there are some keys. For recording payments, press key F5 so that payment page will open. There write the name of the account for whom payment is made. For recording cash receipts, press F6 key and Receipt page will open. There type the name of the account from whom cash is received. There the word Cr. will be written or To is written suggesting that particular a/c is credited and cash account is debited. Thus no Cash Account is to be opened.

Now, to record bank transactions, Bank A/c has to be opened. For that we go to Accts. Info to ledger and press "Create" where the page for opening ledger account will open. There write the name of Bank e.g. State Bank of India, Kalawad Road Branch. Then "Under" write the name of group "Bank Accounts."

Now open expense accounts, one by one. There are two types of expenses in business. Those expenses which are related to purchases and are to be shown in Trading Account are called "direct expenses" and are to be shown "Under" the group "direct expenses." e.g. carriage inward. So when we will make a vouch entry for direct expenses, it will automatically go to Trading A/c on the debit side.

Similarly, those expenses which are administrative, selling or financial in nature and are to be shown in Profit and Loss Account are called "Indirect Expenses," So while opening accounts of such expenses, they are all to be shown "Under" indirect expenses.

If any of the ledger accounts opened as above has an opening balance (e.g. Bank A/c, Debtors A/c, Creditors A/c. etc; it should be written on that page. The amount is to be written on right hand side when the highlight belt or cursor comes on right hand side.

Once all ledger accounts are opened, the business transactions are to be recorded. Remember that if in a transaction, a particular

ledger account is involved, and that ledger account is not opened as above, no entry is accepted by software.

For making records of transactions, we have go to "*Gateway* of Tally" and take highlight to "Voucher Entries" and press enter. With this, necessary page for entries will open.

1. Here, decide for what type of transaction, you want to make entry.
2. If cash expenses are to be recorded, open Payment page by pressing F5 key on the right hand side. There write the name of the expense paid beside Dr. (Here, there may be word By also instead of Dr.) e.g. if salary is paid, write "Salaries A/c." Now the highlight belt will go to right hand side to write the amount there. Then after pressing enter twice, you come to Cr. (or To) where you have to write either Cash or Bank. Immediately, beside the name of this account, the present cash balance or bank balance will appear. If payment is made by cheque, there will be space on the lower part where cheque number and other details are to be shown.
3. If Cash Receipt is to be recorded, press F6 key and Receipt page will open. Against Cr. write the name of the account from whom cash is received e.g. Interest A/c. Then press enter twice, and the word "Dr." will appear. Write Cash or Bank beside it. The amount has not to be written, because here the same amount will automatically appear, which we have written against Cr. Again when we write cash or bank, there will appear the present cash balance or bank balance after this transaction.
4. Thus every time we write the name of account beside "Dr." or "Cr." the highlight belt will go to right side for recording amount of transaction.
5. We now record "Credit Purchases" : First of all press F8 key so that Purchases page will open. There the firm name will be the account to be debited "Dr." There write Purchases beside it. Here it is not necessary to write the whole word "Purchases." Just press key P on board and all accounts starting with P will appear on right side. With the help of

Arrow key go to Purchases in that list and give enter. So beside Dr, Purchases A/c will be written. Now the highlight will go on right side where amount of purchases is to be written. Now press enter twice and we will come to "Cr." line. Write the name of the supplier from whom we have purchased goods. (Here you have not to write the whole name of supplier. Simply press the first letter of his name on keyboard and there will appear on right hand side, a list of all suppliers beginning with that letter. We bring the highlight on the name of the supplier with the help of arrow key, then press enter so that automatically, the name of the supplier will be printed beside Cr. and alongwith the amount to the credit of that supplier will also appear).

Now the highlight will be on right hand side to record the amount of purchases.

Now go on pressing enter and the Computer will ask whether the details recorded are to be accepted yes or no. If you press enter or press Y key, the entry will be accepted and recorded.

6. If Credit Sale transaction is to be recorded, press F9 key on right side. This will open Sales page. There the word "Dr." would be there where you have to write the name of the Customer to whom goods are sold on credit. (Here again, the whole name of customer is not to be written. Simply press button of the first letter of customer's name. Suppose, his name is Anil Jain. Then press S key on board and on right side a list of all customers whose name starts with letter S will appear. Bring highlight to the name of customer whom you want to debit, and press enter. Thus the name of particular customer will automatically be printed beside the word "Dr.")

   Now the highlight will move to right side, where the amount is to be written. If you want to write entry for two or three customers in the same entry, in the next line again "Dr." will appear where you write the name of another customer. If entry is to be made for third customer, again in

the next line the word "Dr." will appear where you can write the name of the third customer.

After pressing enter twice the word "Cr." will appear, beside which write the word "Sales A/c." You have not to write that, as automatically "Sales A/c" will appear as it is a Sales page and even amount written on debit will also automatically appear.

7. Remember that no posting to ledger accounts is to be made in Tally. When we make voucher entry, it is automatically recorded at all places wherever it has the effect, e.g. purchased goods of Rs. 40,000 from Gupta & Co.. Here in voucher entry, we have made entry on Purchase page by pressing F8 key. Hence, it will be automatically recorded in Arvind Gupta & Co.'s A/c and purchases will be recorded in Trading A/c. This transaction will be recorded in Trial Balance and Creditors will increase in Balance Sheet, for which we have not to bother.

8. Secondly, we have not to prepare Trading A/c, Profit and Loss A/c, Balance Sheet or even Trial Balance. All these will be prepared by the Tally itself when we make voucher entries. If you open Balance Sheet and bring highlight on Net Profit and press enter, Trading A/c and Profit and Loss A/c will open showing gross profit and net profit made so far. If Trial Balance is to be seen, then on Gateway of Tally, press Display by pressing enter. This will give a list of matters which are displayed. There an item will be "Trial Balance" and if enter key on it is pressed, the whole of trial balance will be seen showing balances of all accounts for which voucher entries are made.

Steps in Journalising : Before we can journalise business transactions, we must think, on the basis of the rules about effect of the business transactions on assets, liabilities, expenses, gains, etc., of the concern. On this basis the accounts to be debited or credited will be determined. Then the accounting entry will be made in the journal, as shown above.

It should be noted that the papers or documents supporting the business transaction an establishing its veracity are known as

vouchers. These should be filed in proper order, together with necessary references, so that in times of need these can be referred to. An entry in the journal may appear as follows :

2007	*Particulars*		*Rs.*	*Rs.*
May 15	Cash Account	Dr. 53	775	
	To Mohan	37		775
	(Being the amount received from Mohan in payment of the amount due from him.)			

We will now consider some individual business transactions :

1. Ayush commences his business with Rs. 5,000. This means that the organisation has Rs. 5,000 cash. According to the rules given above, the increase in an asset has to be debited to it. The organisation also now owes Rs. 5,000 to the proprietor, Ayush, as capital. The rules given above show that the increase in capital should be credited to it. Therefore, the journal entry will be :

	Cash Account	Dr.	Rs. 5,000	
	To Capital Account			Rs. 5,000

2. Out of the above, Rs. 500 is deposited in the bank. By this transaction the cash balance is reduced by Rs. 500 and another asset, bank account, comes into existence. Since increase in assets is debited and decrease credited, the journal entry will be :

	Bank Account	Dr.	Rs. 500	
	To Cash Account			Rs. 500

3. Furniture is purchased for cash, Rs. 200. Applying the same rule as above the entry will be :

	Furniture Account	Dr.	Rs. 200	
	To Cash Account			Rs. 200

4. Purchased goods for cash, Rs. 770. We can see that the required entry is :

	Goods Account	Dr.	Rs. 770	
	To Cash Account			Rs. 770

5. Purchased goods for Rs. 1,000 an credit from M/s Shyam & Sons. It will be seen that stock of goods increases by Rs. 1,000 and therefore the goods account should be debited. Rs. 1,000 is now owing the supplier; his account should therefore be credited, since the amount of liabilities has increased. The entry will be :

	Goods Account	Dr.	Rs. 1,000	
	To Ram Sons			Rs. 1,000

6. Sold goods to M/s Sunita Sons for cash, Rs. 600. The amount of cash increases and therefore the cash account should be debited; the stock of goods has decreased and therefore the goods account should be credited. The entry will be :

	Cash Account	Dr.	Rs. 600	
	To Goods Account			Rs. 600

7. Sold goods to Ravi on credit for Rs. 627. The stock of goods has decreased and therefore the goods account has to be credited. Hari now owes Rs. 627; that is an asset and therefore Hari should be debited. The entry is :

	Hari	Dr.	Rs. 300	
	To Goods Account			Rs. 300

8. Received cash from Ravi, Rs. 300. The amount of cash has increased therefore the cash account has to be debited. Hari no longer owes any amount to this firm, i.e., this particular form of assets has disappeared; therefore the account of Ravi should be credited. The entry is :

	Cash Account	Dr.	Rs. 627	
	To Manish			Rs. 627

9. Paid to M/s Shyam & Sons Rs. 1,000. The liability to M/s Shyam & Sons has been discharged; therefore this account should be debited. The cash balance has decreased and therefore the cash account has to be credited. The entry is :

	Ram Sons	Dr.	Rs. 1,000	
	To Cash Account			Rs. 1,000

10. Paid rent Rs. 100. The cash balance has decreased and therefore the cash account should be credited. No asset has come into existence because of the payment; the payment is for services enjoyed and is an expense. Expenses are debited. Therefore the entry should be :

	Rent Account	Dr.	Rs. 100	
	To Cash Account			Rs. 100

11. Paid Rs. 7500 to the clerk as salary. Applying the reasons given in (10) above, the required entry is :

	Salaries Account	Dr.	Rs. 7500	
	To Cash Account			Rs. 7500

12. Received Rs. 819 as interest. The cash account should be debited since there is an increased in the cash balance. There is no increased in any liability; since the amount is not returnable to any increase in any one, the amount is an income. Incomes are credited. The entry is :

	Cash Account	Dr.	Rs. 819	
	To Interest Account			Rs. 819

When transactions of similar nature take place on the same date, they may be combined while they are journalised. For example, entries for (10) and (11) may be combined as follows :

	Rent Account	Dr.	Rs. 100	
	Salaries Account	Dr.	Rs. 7500	
	To Cash Account			Rs. 7600

Usually the business transactions in a firm are so numerous that to record the transactions for a month will require many pages in the journal. At the bottom of one page, the totals of the two columns are written together with the words "Carried Forward" in the particulars column.

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6

METHODOLOGY OF HUMAN RESOURCE ACCOUNTING

The accounting procedure of most of the companies reflect the level of inventories, the investment in the plant and equipment and the condition of plant and equipment. But much less attention is given to what might be called intervening factors, which significantly influence the end results. These factors include such qualities of human organisations as loyalty, skills, motivations and capacity of effective interaction, communication and decision making. In point of fact, human resource accounting, when properly applied, tends to correct measurement of production.

Methodology :

To identify those business organisations which have HRA system, the annual reports of 150 top public sector and 150 top private sector undertakings were scanned for the period 1992-93 to 2005-06. Apart from this a small questionnaire was sent to 150 top public sector and 150 top private sector undertakings. As a result 50 organisations were identified, of which 10 were found publishing, such information in their annual reports in supplemental form The remaining 40 organisations had historical cost based system designed to generate output for internal decision-making only.

A pretested questionnaire was administered to the managers, who actually operated the HRA systems, of ten companies to collect detailed information regarding the operational part of the systems.

It was found that all the selected organisations which publish HRA information use the Lev and Schwartz model of economic value using an employee's anticipated future earnings as a surrogate of his value.

The practices of all the ten selected organisations regarding accounting of their human resources were studied. The practices of only five organisations are documented here.

Company HE is an engineering goods manufacturing company. It was the pioneering organisation in installing HRA system in India in mid 70s. Its HRA system is based on the modified version of the model proposed by Lev and Schwartz. This system provides the value of human resources grouped in six categories.

Salary is the surrogate used by HE for determining the value of its human resources. As it is difficult to plot at which salary level in each grade an employee is, the mean of the grade is taken. 'Salary' includes both direct and indirect variables.

The average salary is projected till retirement, i.e., 60 years, taking into consideration the increments as per the terms of the grade and the possibilities of career growth. To account for the increment factor, a weight goes up to 1.25. To take into account the career growth of employees of the company, a career chart is prepared. The career chart shows that in the years to come how many vacancies will arise at each level/rank in the company and I also which level/rank employees will be promoted. The company provides weights for efficiency also. The process of providing weights for efficiency follows a defined pattern every year irrespective of the category of the employee. In the very first year HE provides such weight of 95 per cent and it gets reduced by 5 per cent every year till it reaches 75 per cent.

The projected salary stream is discounted at 12 per cent rate by the company. The rationale of using this discount rate is that it is the rate which this company uses as the minimum rate of return in its capital budgeting decisions.

Company EC renders engineering and technology consultancy services to the society in the field of petroleum refining, petrochemicals, cement, etc.

Being essentially a consultancy business organisation, EC has attempted to assess the value of its human resources , grouped in four categories, using the Lev and Schwartz model for the first time in 1980-81. However, it discontinued the system later on. HRA system, though abandoned, is discussed because EC is in the process of redesigning the system.

The valuation process used by this company was 'salary' based which included both direct and indirect benefits given to employees. Further, an average of the minimum and tine maximum basic pay against each level was taken. A charge of various allowances, provident fund, bonus and 'additives' was added to the average basic pay. 'Additives' was included to reflect the incidence of expenses like medical, leave travel concession, casual leave, etc. The per cent change of 'additives' was calculated by the company every year by relating the actual quantum of such expenses to actual Salary.

The salary stream was projected till the retirement , age of 60 years. For this purpose the employees of the company were grouped in nine age-groups of 5 year each. The valuation period was taken as the difference between the retirement age and the mean age specific to a particular age-group of employees. An increment factor of 5 per cent per year (compounded) was taken to reflect the increase in salary in the valuation process.

The projected salary was discounted at rate of 10 per cent to calculate the present value by the company.

Company OL is engaged in exploration, drilling and production of oil in our country.

It values its human resources on the basis of the Lev and Schwartz model taking salary as surrogate of value. The system generates single absolute figure of value and does not provide categorised-value of its human resources by the company.

'Salary' includes both direct and indirect expenses. The expenditure on employees as shown in its audited accounts is taken

as the starting doing since it represents the actual amount paid by the company.

The projection of expenditure on employees is made at a compound rate of 10 per cent for every four years and at 25 per cent for every fifth year. The rate of 10 per cent purports to take care of the increase in salary because of price rise and increments. The rise of 15 per cent (out of total 25 per cent in the fifth year) represents the impact of pay revision on the salary bill, as OL has a policy to revise pay every five years.

The projection of salaries by the management of the company is made for a period of 20 years and not up to the retirement age.

The projection salary streams is discounted at a rate of 12.25 per cent as this rate represents the rate at which the Government of India advanced the latest loan to OL.

Company MT organises and undertakes the exports from India of minerals and ores.

It values its human resources by using the Lev and Schwartz model. The final output of the system is presented by the company in two categories, viz., officers and staff. The organisation has actually grouped the employees in fourteen categories while carrying out the valuation exercise of human resources.

'Salary' is used as basis of valuation for this purpose. It includes both direct and indirect benefits provided by the company.

The salary stream is projected up to the retirement age of 60 years by loading the average salary at a rate of 10 per cent every year, which takes care of increments and price rise, for all categories of employees of the company except chairman and directors whose salaries are projected on the basis of actual increments likely to be given during their association with the organisation.

The valuation period is taken to be the difference between the retirement age of the average age. Average age is calculated for each level/rank of employees.

The projected salary stream is discounted at the rate of 12 per cent to calculate its present value. This rate being the required rate of return used by the Government of India and by the company in evaluation of capital budgeting proposals of this company.

Company PC is engaged in the manufacture of chemicals and petrochemicals goods.

It uses the Lev and Schwartz model to value its human resources with certain modification. The value of human resources is published in the annual report classified in six categories of employees.

The valuation process is 'salary' based. The weighted average annual gross salary is computed along with the weighted average age and the number of employees for each category. The salary stream is projected up to the retirement age of employees. While projecting the salaries an annual increment factor is taken into account. The possibility of promotion of its employees based on the general promotion policy of the company is also taken into account for valuation of human resources.

The projected salary stream of employees is discounted at the rate of 17 per cent, i.e., its weighted average cost of capital, to calculate the present value of human resources of the company.

The study of the HRA systems of the five selected organisations provides an overview of the wide variations that exist in the practices followed to value the human resources. Though these organisations followed the economic value approach and used the Lev and Schwartz model, yet the process of accounting for the human resources differed considerably from company to company.

Salary is used as a surrogate for value by all the selected organisations assuming that employees will contribute at least equal to the salary paid to them. The mean of the grade is taken, as it is difficult to carry out the valuation exercise on the basis of actual salary level of employees. But the process of calculating mean salary differs from company to company. Though most of the organisations have calculated simple mean, Company PC uses the weighted average salary as a surrogate of value.

The valuation period for which the salaries are projected represents the time span for which the employees are expected to stay with the organisation. The final value calculations depend much on the length of the valuation period. But the practices vary widely from company to company. Company HE prepares a career

chart and on the basis of the same determines the valuation period. Company EC takes the valuation period equal to the difference between the retirement age and the mean age of each age-group of employees. Company OL has assumed the valuation period of 20 years arbitrarily. Company MT and Company PC use average age of for the determination of valuation period.

In our view projection of salaries for the duration of valuation period requires two variables. Firstly, what will be the pattern of movement of employees in the company, i.e., whether employees will continue to occupy the present position or will they by promoted by the company. Secondly, at what rate incidence of increase on salary due to increments and inflation should be taken. As regards the possibility of promotion, most of the organisations have assumed the employees will continue to occupy the same position at which they are at the time of valuation. Such an assumption is inbuilt in the Lev and Schwartz model. But Company HE and Company PC have considered the possibility of promotion. As regards the second variable, i.e., the rate of increment of salary, different organisations have used different rates in the research. For example, Company HE uses the rate of 5 per cent which is not compounded annually. Company EC uses a compound rate of 10 per cent. Company EC uses a compound rate of 10 per cent. Company OL uses 10 per cent for every four years (compounded annually) and 25 per cent for every fifth year during the study.

To discount the projected salary stream of organisation to calculate the present value, again different organisations use different rates. In the study organisation PC uses the discount rate of 17 per cent, which represents its overall cost of capital. Company HE and Company MT use 12 per cent discount rate , as such rate represents the minimum rate of return used in their capital project evaluation processes. Company OL uses 12.25 per cent rate which happens to be the rate at which the government of the same cut off rate for the evaluation of human capital projects as used for the evaluation of physical capital projects conceptually wrong and questionable.

In this study organisation HE has considered a discounting factor on present value of salaries to account for efficiency. No other organisation has followed such a practice during the study.

The human resource accounting differs considerably in India in every aspect. Though the model used by various selected organisations to account for human resource is the same, i.e., the Lev and Schwartz model, the way the model is operationalised differs widely in this research. There is no uniformity of practices regarding calculation of mean salary, determination of expected tenure, projection of salary-stream for the expected tenure and the calculation of present value using a discount rate. It is suggested that the professional accountancy bodies like the Institute of Chartered Accountants of India and the Institute of Cost and Works Accountants of India should take more active interest in the subject of human resource accounting and take steps to develop and recommend a uniform approach to human resource accounting for Indian companies.

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7

ADVANCED MECHANISED ACCOUNTING

The many types of uses of computers in a business system can be classified into following two categories :

(A) Routine repetitive accounting jobs;

(B) Decision making and managerial jobs.

Since the computer can work at a very high speed, a number of routine accounting and other functions can be processed through the computer. These include deposit accounts in a bank, maintenance of sales analysis, credit control, pay roll, maintaining cash book and other accounting records and maintaining store record, etc.

The most important accounting use of the computer is in the areas of decision making. Since the computer can process a lot of accounting information and can co-relate a number of variable, it is of big help in inventory control, production scheduling, market research and distribution logistic, etc. The accounting use of computer is in such applications which could not be handled before the advent of computers. Therefore, the management of a modern business concern can plan its production, keep check on its inventories, work out the best methods of distribution of products and reach the most optimum course action through the help of modern computer.

Computerised Accounting: It is often thought that computerised accounting systems are very expensive and that it needs a very heavy initial capital investment which must be supported by large annual recurring expenditure. It is also believed that smaller business units cannot have such finance to use computers at all.

The smallest fourth generation computer being offered in India today costs about Rs. 40,000. Such computers are small only when compared to the international standards, otherwise they are very capable and will perform the important accounting applications of every types. Larger computers are available at rental going up to Rs. 8,000 per year. Other expenses include installation charges freight, sales tax, air conditioning of the computer room, false flooring furniture and storage facilities for cards, etc. Recurring cost consist of rental for the computer and overheads for floor space, electricity and power. Other important recurring costs include cost of cards and stationery and expenditure on the salaries of operating and programming staff. Thus before a computer is purchased careful analysis of its costs as compared to the benefits likely to accrue, must be done. There are many examples where computers were purchased without considering the possible applications and such companies found them to be very expensive. Smaller companies who can not afford a computer or larger companies who do not require it, can make use of the services of the various computer bureaus operating in India. These concerns charge from about Rs. 300 to Rs. 800 per month for the various computer applications. Such bureau is good for a client with experience in electronic data processing who wishes to buy cheap computer time. Many business concerns in India are using the services of these bureaus for selected accounting applications.

An accounting machine in effect does the same work as is normally done by an accounts clerk. It mainly consists of :

(i) Copying details say date, number, particulars, quantity, rate, amount, etc. from one set of records, usually original vouchers on to another, i.e., a book of prime entry, ledger, etc.

(ii) Analysing and consolidating figures through addition, subtraction, etc. so as to provide meaningful information relating to each account to management of a concern.

Proving the accuracy of the accounting work. Summarising the accounting information for the preparation of final statements of account necessary for reviewing the working of the business over a period of time.

Though accounting machines carry out all the processes for mentioned, the number of steps taken from posting the vouchers to the preparation of final statement of accounts are fewer than those needed under the manual system. This is because the basic data does not have to be copied out again and again. This eliminates errors and makes for greater accuracy. The system followed, however, depends upon the type of computer used. Ledger posting machines work directly on vouchers but the different types of accounting statements that they are able to prepare are limited by of products is another function done by computer. Credit management, funds management, investment management, personnel management and production management are some important functions done by computer.

It refers to reconciliation of all those transactions that have involvement of more than one departments or branches. The number of such transactions being handled is so large that it generates huge volume of data to be processed. Computerisation of inter-branch reconciliation system has improved the efficiency of company. For the purpose of reconciliation, data to be processed can be categorised as (a) statements and (b) vouchers.

The data on statements are processed, edited and rectified. The rectification cycles are continued till this data becomes error free. This error free data on the statements are than used to update the relevant information in the computer. The computer is also used to print out reports on balances, discrepancies, missing statements, etc., for control.

Batch processing is used for carrying out edit cycles for vouchers, advises or manifolds is used to update the department or branch ledgers in the computer.

The idea that no customer should be refused and thus create large stock of finished goods. This means a big dent in company's profits due to investment in large amount in finished goods as well perform their functions. The computerisation of the top level functions invloves operations like :

(i) generation of reports to assist the management in policy formulation and organisational performance evaluation,

(ii) maintenance of an external database consisting of data on financial, economic and sales data on domestic, national and international market of the company's product, and

(iii) promoting efficiency in administrative services of the company.

The computer system that needs to be installed at the top level is usually a Mainframe System. Smaller production unit could do even with a mini computer. The data received from accounts, production and sales department is processed for detailed analysis for different statutory and other financial reports. Management Information System provides the management with timely and accurate information for effective organisational control. Inter-branch, reconciliation, provident fund accounting, payroll processing, sales according to each branch, sales according to each product are some important activities are handled by computer.

Maintaining a sales department profile is another important management function. As sales department is the nucleus of all sales activities, it is therefore imperative to plan and control these activities and monitor the performance of sales departments. Different reports that can be generated in this context include report and sales done by each salesman, list of less sales products, report on region-wise/zone-wise break-up of sales. To generate reports that aid in decision-making relating to production, stock and sales.

Trade and industry of our country has gone through a period of tremendous development and phenomenal transformation during last four decades. The new industrial policy of the union government was an attempt to fully involve the trade and industry of our country in accelerating the process of economic development envisaged in the five year plans of our country. Industry and trade were asked to

play the role of sheet anchor in the development process of our economy.

The customer service could not be kept to the desired level of efficiency without mechanisation of accounting work. There were delays in handling the documents due to sheer number of business transactions. The flow of accounting information from factory to head office, sales office to head office and branch level to zonal level suffered a setback. Thus, a need for the accounting information systems is to be restructured in regard to their contents for operational controls and policy formulation. Along with restructuring of information system, it was essential that the data captured through different departments of a company were also mechanised. Fast processing of data for speedy policy formulation is meaningful only when there is no delay between the generation

Modern world is very fast approaching towards the new economic system and manual aids are being replaced by mechanical devices in every sphere of life and accounting activities is not exception to it. Accounting machines were first developed in U.S.A. to cope with the census work; also to carry out complicated calculations involved in accounting research. In case of large and medium size business units, use of machines for different types of accounting functions has become a matter of routine work. Though accounting machines were known and used before the Second World War, only after is Great War business organisation in western countries started using accounting machines extensively in their Accounts Departments. In due course, their use has spread to India also. Because of the increased complexity of modern business activities in our country, the volume of accounting work has grown at a much higher rate than direct preparation of growth of business. As a result, the processing of accounting information has become of data at the department level and the time it is fed to the large computer for processing.

One of the objectives of computerisation at the departmental level, for instance, is to improve the quality of customer services. Another is to generate the required data for the control and management of information systems. The objective of computerisation at accounts department is to capture data on the computer media, process it for generating necessary information

for operational control of the production departments and sales departments coming within its territory and edit captured data to prepare the same in a format for a direct input to the computer system located at the head office of the company. The objective of computerisation at the top level is storage of data and their retrieval to analyse this data to exercise control and audit checks and general reports for company management, policy formulation and performance evaluation. The top level computerisation should also maintain an external database on domestic and national or international policies.

The production and service departments are the centre of all activity. The data that are required to generate necessary information for the operational control and policy formulation of the company are the source of all transactions. Computerisation of the production and sales departments is therefore the most vital element of the process. Computerisation of production and sales department has led to tremendous improvement not only in the area of customer service but also in improving production quantity and quality. Mechanisation at production and sales departments automatically expedites the process of policy formulation and monitoring functions at the top level.

The first and the foremost area of applications of the computers at production and sales departments is in the posting of ledger entries and other books of accounts relating to production and sales. Computerisation of ledger posting functions involves the use of Automatic Ledger Posting Machines. Use of this machine has facilitated generation of accurate and timely statements of accounts. This machine can very conveniently handle other accounts relevant functions like calculation of interest, discount, etc. Computer can also be used for ledger balancing, generation of day book and other supplementaries. Payroll processing is another important area of computerisation. One of the options to implement computerisation is to use a stand alone machine with its own memory to be installed at sales departments to perform dedicated functions. A small to medium size sales department may have three to four such machines. The second option is to use a single computer for the entire sales department. In this, the primary ledger posting are done manually. The entire data is then entered into computer to generate

supplementaries, day book and other statistical returns. The latter option can prove to be more cost effective for big sales department.

Corporate planning, policy formulation and monitoring of company's performance are the major functions of the top level. Thus the objectives of computerisation at top level are the use of computers to assist the management efficiently and effectively.

An accounting programme should be recorded on a proper medium which the computer can process. Usually punched cards are used for accounting purpose for a modern business concern.

Each computer can understand one accounting language which is known as "machine language." Machine language contains use of numerical codes and each computer has its own machine language.

Magnetic Discs : Magnetic discs are typically made of thin metal plates coated on both sides with a magnetisable material. Several discs are mounted permanently on a shaft that rotates them at a constant speed. Each disc face his its own read/write head, though they move in and out in unison to access accounting data that is stored in buckets or sectors of the concentric tracks like those in the gramophone records.

Data Base : Pooling of all the accounting data at one place as the accounting database in the magnetic discs has several interesting implications. The accounting data base is the common property of all; it belongs to no particular department and departmental jurisdictions are thus weakened through computerised accounting.

A business transaction can be very comprehensively processed. For example, a customer order can be processed for credit appraisal, updating of accounts receivables, stocks and sales summaries files, production and transport scheduling, placement of replenishment orders etc., and all in one stroke. The accounting data can be analysed and experimented with in several ways. For example, the manager can get answers to such "what if" questions as. What happens if selling prices are cut down by 12½%? What happens if advertising budgets are decreased by 10%?

This, however, requires that the relationship between the accounting budget and its effects is mathematically modelled and embedded in the computer programme.

Hence, the United States of American Institute has defined a computer as "a device capable of solving business problems, by accepting accounting data, performing described operation on the accounting data, and supplying the results of these operations." In a way, in the form of computer, some of the functions of the human eyes, brain and hands have been mechanised in accounting system of a modern business concern.

Organisation always uses computer to achieve efficiency and utilise computer. If the use of computer is increased it improves efficiency of business.

When the inventory turnover of an organisation is in high position then the need of computer will increase. For good and efficient control help of computer is needed.

With the help of computer efficient and good control can be exercised on receivables. Prompt collection and good control of receivables can be obtained through computerisation.

The impact of computerisation has been so large and wide ranging that computers are no longer meant to be used exclusively by scientists and engineers in large public sector companies, big business houses or government departments but they have become a household name today. With the advent of microcomputers in seventies and their subsequent development and performance enhancement in eighties, computers have reached our houses. Computers are being used today for all sorts of applications from simple work processing to accounting, from weather forecasting to weapons research and so on. Computers have undoubtedly revolutionised our whole lifestyle.

Impact of computerisation on the banking industry has started showing the expected results. Banks have not only greatly improved customer services, they have also diversified their areas of activities. Introduction of MICR technology for handling of cheques, credit cards and other similar documents has saved lot of time. Banks today can send the required documents and statements, to their respective regional or zonal offices without any delay. Computers have enabled their respective company officers take quick and effective policy decisions to actively participate in the development plans of the country.

Computers have also penetrated industry in a big way. Today, every modern domestic appliance is microprocessor controlled. The manual telephone exchanges have been replaced by truly versatile computer controlled electronic exchanges. Computers are being extensively used for process control, for instance, specific functions like control of temperature, humidity, are being carried out by computers only. Robots are being introduced at such work it is not possible for human being to work for a long time and also where the work is of repetitive nature.

The household goods like videocassette recorder, washing machine, microwave oven, etc., are also computer controlled. Computerised telephone can store and dial hundreds of telephone numbers for us, the alignment or the wheel balancing car at the service station is also computerised.

Today computers have wide ranging and engineering applications. Meteorological applications like weather and flood forecasting, defence applications like designing aircrafts, weapons and weapon delivery systems, biomedical applications like CAT scanning, computer controlled surgery, nuclear magnetic resonancing, monitoring of life support systems and space research, nuclear research, a architecture, etc., are some of them.

Computer has revolutioned all activities of a business enterprise. Just as computer has been of immense use in other fields, it is also very useful for accounting work. Maintaining accounts through computer, software programme has to be entered in the computer. Tatas have developed a very useful software for writing accounts through computer which is named Tally." This is such a software that even a person not knowing even fundamentals of accounting can write accounts, can write journal entries and subsidiary books, can open ledger accounts, can enter cash transactions, can write bank transactions etc. As a result the software gives him readymade Trial Balance, gives Trading Account showing gross profit, prepared Profit and Loss Account showing net profit and even Balance sheet prepared for which the accountant has not to bother to prepare these financial Statements himself.

For getting the benefit of Tally, tally software has to be purchased costing from Rs. 4,000 to Rs. 18,000 and it has to be fed into the

computer. The first version of Tally was released in 1988, and through continuous development.

It must be remembered in all versions the basic system remains the same, but with every new version some additional facility is given according to the changing requirements of business.

As claimed by Tatas, today Tally is recognised as one of the leading accounting packages across the globe, with over 45 lakh customers and its market share is 93% comprises of financial accounting and bookkeeping, the inventory accounting. The use is able to use only accounting or accounting with inventory. And if accounting with inventory is used, whether it should be integrated or not. Tally can be used from a very small organisation like grocery stores to a large corporation with international locations and operations.

When we start the computer, there will be various symbols showing various programmes of computer called "icons" in which there will be an icon "Tally" (if the tally software is entered in the computer.) By double click on the tally icon, the Tally programme will open.

The opening page of this software is named "Gateway of Tally". From the above table, it can be seen that there are three commands given on the right hand side with the heading "Company Info "(Here "Info" is the short term for Information). If we want to write the accounts of any existing company already entered in computer, then we must give enter on. "select" and a list of companies whose accounts are already there would open before us .We select that company (it is not a joint stock company only, but name of any individual firm, partnership firm or a joint stock company or any other organisation) whose accounts we want to write. To select that company we have to bring the highlight black strip on the name of the company selected. Now press enter button and the details of new company would be available.

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8

CAPITAL STRUCTURE

Capital management refers to the total combined investments of a business comprising debentures, long-term loans and the total of the shareholders' funds. Capitalization strictly speaking has no meaning when the balance sheet of a company contains share capital as the only item. Therefore the word capital structure will be appropriate to be used when the capitalization contains debt also.

There is always some confusion regarding the terms capital structure and financial structure. Financial structure refers to the liabilities side of a balance sheet which contains the item of resources purchased by the company. On the other hand, capital structure refers to the permanent financing of a company, composed of long-term debt preference share capital and shareholders' funds. Therefore in a broader sense, capital structure includes the long-term debt such as debentures, preference shares capital and the net worth. It refers to permanent financing. For a long-time, the word, capitalization was in vogue, to refer to the capital structure but this has been superseded, by the term capital structure. The term capital structure comprises the book-values of all classes of share capital other long-term funds. For the use of these funds, the investors are paid a limited amount of return. On the other hand, when a company raises funds on the issue of equity shares only there is no trading on equity because there is no limit as regards the return on the equity shares. This concept is applicable to all cases of businesses which

pay a fixed rate on the funds used by them whether they are long term or short term sources. In the case of companies which employ high percentage of debt and preference shares, they are said to be trading on equity on a higher degree than companies which employ only a smaller percentage of debt. A company is said to trade on equity, because the creditors and preference shareholders are willing to advance funds to the business on the strength of the funds supplied by the equity shareholders who are called "residual owners" and on the earning capacity of the business. A company which obtains funds from creditors and preference shareholders trades on the equity to higher degree than a company that obtains less funds from these sources. The reason for trading on equity is to employ the "Senior" funds at a rate of return higher than their cost to increase the return on the investment of the residual owners. If the earnings are high, the equity shareholders profit, and when the earnings are low, they lose because the company has to pay interest which is more than the income from investments. Their investment serves as a protection to both income and the principal of the debenture holder. The equity shareholders receive nothing until the creditors are paid in full in case of liquidation. Therefore when funds are obtained from sources such as debentures or preference shares which are paid a fixed rate of return, any profits generated by the funds in excess of debenture interest and preference dividends are available to equity shareholders. If the profits earned are not sufficient to meet the debenture interest and the preference dividends, the deficiency has to be made good by the equity shareholders. If additional equity shares issued are large and if a significant portion of the same falls in the hands of a specific group, the ability of the old shareholders to retain complete or partial control of the company will be seriously affected. The degree of risk can be judged by the prospective investor in the capital structure of a company. The main reason for the employment of debt is that upto a certain point debt is a less expensive source of funds than that of equity shares. As long as the interest cost of debt is lower the equity shareholders are benefited.

A company should periodically evaluate the sources of capital mix that is being used. The optimum capital mix depends upon

factors such as terms of agreement with the creditors and owners. Although a company would have exercised great caution at the time of raising funds in the past, yet in due course, one of the sources of capital mix may become obsolete. This may be due to external and internal changes. Therefore, it is necessary to adopt new mix. Examples of external changes are Change in the bank interest rates, rise and fall in the market prices and changes in the income-tax structure. Examples of internal changes are increase in the size of the company, and conversion of a private company into a public company. The result is, what was optimum source of capital is not now an optimum one. It is therefore necessary to evaluate the sources of capital with the object of taking necessary remedial measures. This is done by changing the composition of the source of capital

The tests can be applied successfully for evaluating the source of capital mix. We have already seen that trading on equity is done when a company pays a limited return on the sources of funds it uses. It should be seen whether the trading on equity is beneficial to the residual owners and whether the rate of return earned on the residual owners' equity is higher than that if there is no trading on equity. Further the money market rates, may have declined since the company obtained funds by debentures and preference shares. If so, the company can pay off these sources of funds by the proceeds raised at lower interest or dividend rates. The company can issue equity shares and pay off the preference shares. The management should therefore be on the right vigil for taking the opportunity of replacing one source of credit with another which is lower.

A company should earn sufficient profits and generate sufficient cash to support its capital mix. The problem of the company's ability to pay the loans and interest when due depends upon comparison of future inflows with the outflows.

Traditional Approach :

The traditional approach also known as 'intermediate approach' is a compromise between the two approaches discussed above. This approach assumes that there is an optimum capital structure by increasing the value of the company or the cost of capital by a judicious use of debt and equity capital. According to

this approach, there is optimum capital structure when the cost of capital of the company is at its lowest and the value of the company is at its highest. Since the cost of debt is cheaper than the equity capital; the weighted cost of debt and equity will be less than the cost of equity capital as compared to that existing before debt financing. Solomon a supporter of the traditional approach is of the view that increase in the leverage will have effect in the company's total market value. There are three stages in the effect on the market value as leverage is increased. In the first stage the following can be noticed.

The above factors are responsible for the increase in the market value of the company and decrease in the weighted average cost of capital.

The second stage, increase of debt after a certain degree of leverage has been reached will produce only a slight increase in the market value. As a result, the weighted cost of capital remains constant.

In the third stage, the addition of debt to the capital structure of a company, after a critical point will result in the decrease in the market value as well as an increase in the weighted cost of capital. In other words, both cost of debt and cost of equity will increase at an abnormal rate.

The overall effect of the three stages discussed above implies that the cost of capital declines with leverage. It begins to rise after a certain point. Solomon is of the view that there is a 'precise point' at which the market value will decline and weighted cost of capital will increase.

Margin of protection falls below the safety position fixed up by the company-it means that the solvency position of the company is in danger. In addition, to considering the question of earning sufficient profits to pay debenture interest and preference dividend, the company should also pay attention to pay current liabilities, when they become due. It has already been pointed out that the current ratio should be 2 :1. It is common knowledge that companies having higher current ratio are at times financial difficulties while those with lower rates are quite solvent. If the company finds that

the solvency position requires any improvement, it should take remedial measures immediately such as paying off the debentures by issue of equity shares retaining a higher proportion of its profits in the business.

As regards the restrictions, the management may find in due course, that they are not conducive to the progress as anticipated at the time of original issue. In such a case, the company should make efforts to revise the terms or failing which, the company should make suitable arrangements to pay off these funds. If the company had raised the original loan by mortgages of specific assets and if it now finds that additional funds are required from other sources for which additional assets could not be hypothecated, the only course open to the company is to recast the entire capital mix.

Where a company has already reached the optimum number of shares outstanding, and if the price of the equity shares has gone up, the company will increase the number of shares by stock-split, a technique that reduces the price of each share, to a level that will induce the public to purchase shares to be issued.

The important reason for a company to use debt in addition to share capital in its capital structure is to increase its earnings. The use of debt has the effect of increasing the return on equity capital. But the financial risk of the company increases thereby. This has the effect of bringing the company to insolvency and also creating variations in the return to the equity, shareholders. Even though the management of every more. To issue securities with less than maximum value is to deprive the already existing security holders of a part of what could be got. When a company is likely to require new financing, it should set up the capital structure conservative enough to permit subsequent issues. The cost of equity can be considered as an opportunity cost. If an investor commits money to a business, he is foregoing to invest elsewhere. The cost is therefore the amount of income foregone. We have seen that debt is cheaper source of funds than equity. But it will be expensive for a company to use further debt than the addition of equity capital. Too much of leverage will result in the secure position of the equity shareholders and in the variation of the reform on equity shares. This will therefore

also increase the cost of equity capital. It will therefore be correct to assume that there is some capital structure which will increase the value of the company. But it will be difficult to define that particular capital structure. Therefore the objective should be one that will maximise the value of equity share. It will not be possible to determine precisely, what that particular structure is for a company if we consider cost alone. We have to take into account other relative factors also.

The next factor requiring consideration is conservation. A company is considered to be conservatively financed if it is in a position to meet its fixed charge out of cash flows generated by the company to meet these charges. There should be the least danger of it not being able to meet its fixed charges when they become due. Even though increasing the proportion of debt in the capital structure will result in the cost of capital yet if the debt is carried too much the company cannot be considered to be conservatively financed. Another aspect connected with conservation is that if a company is already high-leveraged it will find it difficult to raise funds both by debt and equity capital.

The next factor to be considered is the flexibility of the capital structure. This signifies the company's ability to change its capital structure without any difficulty. The company should be able to change from one source of funds to another. Flexibility in the amount of fixed interest charges created by the capital structure is a point to be considered. A company's capital structure is considered to be flexible if its fixed charges are flexible.

The next factor for consideration is the restrictive covenants. Covenants incorporated in the loan agreements may be reasonable from the view point of the creditors but this may be undesirable as regards capital structure of a company. These restrictions may be hindrance to the management in the matter of controlling the business. These restrictions should not be unreasonable.

The following is an example of restrictions imposed by long-term creditors:

Assume that a company has borrowed Rs. 600,000 on 6 per cent 10 year term loan from a financial institution with a covenant

that the company should not borrow any more money except on current liabilities so long as this term loan is outstanding. After some time the company, in order to expand its business requires additional funds to the extent of Rs. 1,00,000. This amount cannot be raised by way of long term loan under the terms of the existing loan. The original lender may permit the company to borrow elsewhere provided the new loan is subordinate to the original loan, or it may refuse to permit the company to raise the loan elsewhere. It may insist upon the company to take a loan from the institution for the unpaid amount of the original loan and the additional amount now required at an increased rate of interest for the entire amount. This course will naturally make the cost of the new loan high. The company has to pay during the subsequent period higher interest of say 2 per cent not only on the additional funds needed but also on the unpaid balance of the original loan. The same kind of control will be exercised by the financial institution for the new loan advanced. This kind of restriction is inflexible with regard to changing the sources of funds of the company.

The next factor to be considered is the market ability of the securities, as the capital markets are changing very often. At a particular time the market will be favourable for sale of securities and at another time it may not be so favourable. The company should sell the securities at the right time and the right type which will have bearing on the cost of capital.

Capital structure of a business company is a characteristic feature depending upon each type of the company.

The relation between market price and earnings is complicated by the difference in the market value of a specified amount of earnings resulting from difference in capital structure. Where there exists a capital structure with a judicious combination of debentures and shares, there will be higher market value than one consisting of a single issue of equity shares. This difference is due to two important factors:

The use of debentures creates an interest charge which reduces the burden of income-tax and thereby results in the outcome of total

income available for the security holders. The wise use of the debenture debt creates a greater market value as compared to the equity shares, which will be less on account of risk of prior securities. Assume a company has only equity share capital and earns Rs. 1,00,000. The net income after tax of 50 per cent would be Rs. 50,000. If this income is capitalized at 10 per cent it will give share value of 50,000 × 100/10 = Rs. 5,00,000. However, if the company issues 5 per cent debentures for Rs. 20,00,000, the interest on these would amount to Rs. 1,00,000 which would duce the income with income tax and if this is capitalised by a higher percentage because of the greater risk or the shares preceded by debentures, the capitalization.

Different Approaches : As regards the theory of capital structure there are different kinds of concepts propounded by different authors. The main contributors of the theories are Durand, Modigliani, Miller and Solomon. Durand advocates two approaches as regards the valuation of the earnings of a company. They are (1) the Net-Income approach (N.I.), and (2) the Net Operating Income approach.

As regards the measurement of the degree of leverage of a company, above approaches are considered to be the extremes.

Net Income Approach : According to this approach, a company can increase its value or reduce the overall cost of capital by increasing the proportion of debt in its capital structure. In this approach, the essential assumptions are :

1. As the use of debt does not alter the risk element, the equity capitalization rate and debt capitalization rate will remain unchanged.
2. The debt capitalization rate is less than the equity capitalization rate.
3. Income-tax considerations are ignored.

This approach can be explained by the following table :

Assume that the company's capital structure consists of : 6% debentures for Rs. 10,000.

Assume that the company expects a net income of Rs. 4,000.

Equity capitalization rate may be assumed at 10%.

The total value of the company is calculated as follows :

	Rs.
Net Income	4,000
Less debenture interest	600
	3,400

Earnings available to equity shareholders

Rate of equity capitalization is 10%

Market value of the equity shares will be :

$$3{,}400x \frac{100}{10} = \text{Rs.}340{,}000$$

Market value of the debentures	=	Rs. 14,000
Total value of the business	=	Rs. 44,000

In the above example, the earnings available to equity shareholders has been capitalized at a constant rate of 10 per cent. As a result, the implied overall capitalization percentage rate is :

$$\frac{\text{Earning}}{\text{Value of the Co.}} \times 100 = \frac{4{,}000 \times 100}{44{,}000} = 9\% \text{ approximately.}$$

Assume that the debenture debt is increase by the company from Rs. 1,000 to Rs.25,000. Assume that the interest rate of debentures remains the same. The value of the company will be calculated as follows :

	Rs.
Earnings	4,000
Debenture interest	1,500
Available to equity shareholders	2,500

If equity share is capitalized at 10 per cent, market value of the equity shares will be :

$$\frac{2500 \times 100}{10} = 25{,}000$$

Market value of the debentures = 25,000

Value of the company = 50,000

As a result the implied overall capitalization percentage will be:

$$\frac{4000 \times 100}{50,000} = 8\%$$

The above example shows the effect of the various degrees of financial leverage on the value of the company and the cost of capital, under the net income approach. It will be noticed that the value of the company increases as the debt ratio increases and the average cost of capital declines. The optimum capital structure would be at the point where the value of the company is maximum and the overall cost of capital is the minimum. Therefore under this approach a company will have the maximum value and the lowest cost of capital when it has much debt. This approach signifies that a company can reduce the cost of capital and increase its total value by the use of debt. As the degree of leverage is increased from the point of view of the investors there is not much of risk.

Net Operating Income Approach:

According to this approach, change in the capital structure of a company does not effect the market value of the company. The overall capitalization rate of the company is constant for all degrees of leverage. Net operating income is capitalized at an overall or weighted average cost of capital. The total value of the company is found out by dividing the net operating income by the overall cost of capital. The market value of the equity shares can be arrived at by deducting the value of debt from the total market value of the company.

This is explained in the following table :

Assume that the net operating income of a company is Rs. 2,00,000.

The average cost of capital is 10%.

It has debenture debt of Rs. 10,00,000 @ 6%.

Under this approach, the total value of the company will be arrived at as follows :

	Rs.
Net Operating income	2,00,000
Market value of the company =	$2,00,000 \times \frac{100}{10}$
	= 20,00,000
Market value of debentures	= 10,00,000
Market value of equity shares	10,00,000

The cost of equity share will be :

$$\frac{2,00,000 - 60,000}{20,00,000 - 10,000,00} = \frac{1,40,000}{10,00,000} = 14\%$$

Assume that the company increases the debt from Rs. 10,00,000 to Rs. 15,00,000 the value of the company will be unchanged at Rs. 20,00,000. The value of the equity share will increase to Rs. 5,00,000 and the equity capitalization rate will be :

$$\frac{2,00,000 - 90,000}{5,00,000} = \frac{1,10,000 \times 100}{5,00,000} = 22\%$$

It will be noticed that equity capitalization rate rises with the degree of leverage, the total value of the company remains unchanged by the capital structure. This approach implies that the cost of capital will be the same irrespective of capital structure. Therefore according to this approach all capital structures are optimum; since the market price per share does not change with the leverage.

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9

PARTNERSHIP ACCOUNTING PROCEDURE AND METHODS

The word capitalization is used in different meanings by different authors of finance and management. This word has been traditionally used in finance to show the amount of the par value of the shares and debentures outstanding in a company. In the legal usage, it refers to the amount of authorised capital excluding debt. In the case of a company, which is in the process of being promoted, and its financing is not yet finanlised, capitalization refers to the total shares which the company is permitted to issue under its Memorandum of Association; it shows authorized capitalization. Another significance attached to the word capitalization is capitalizing an expenditure which is of a revenue nature. For example, if heavy expenditure is incurred on advertisement during a particular year, instead of debiting the entire amount to advertisement account, the amount is capitalized, i.e., treated as an asset and carried in the balance sheet until written off during a period of years.

If a company has accumulated large surplus and desires to give benefit to the shareholders, in the form of bonus shares, this process is called "capitalization of reserves.' When dividends are paid in the form of shares at certain proportions, the share capital is increased by the amount of bonus issue and the reserve decreased.

When preference dividends are in arrears and the accumulated preference dividends are paid off in shares, the procedure is called 'capitalization of dividends in arrears'.

Effected of Non-registration of Firm : When a partnership firm is not registered, it will have to face the following difficulties :

- No partner can file a suit against the present or past partner.
- The partnership firm cannot file a suit against any third party.
- The partners of the firm cannot file a suit against the firm.

Unaffected Rights of Non-Registration of Firms :

If a partnership firm is not registered, it will have no effect on the following rights:

(a) Third party can file a suit against nonregistered partnership firm or its partners.

(b) Any partner can go to the court for winding up of the partnership firm.

(c) Any claim which is not more than Rs. 100.

(d) The rights of the person appointed by the court to release the property of an insolvent firm will not be effected.

(e) Any partnership firm or the partner carrying on business outside India.

(f) All disputes which relates to trade mark or patent rights.

Advantages of Registration of Partnership Firm :

When a partnership firm is registered, the advantages can be as under:

Advantages to the Firm : A registered partnership firm can file a suit against any party for recovery of dues.

Advantages to the Partner: The partner of the registered firm has a right to file a suit against the partnership firm or any other partners.

Advantage to Creditor: When a partnership firm is registered, no partner can get rid of liability of the creditor because his name and addresses are given in the registration form.

Advantages to Newly Admitted Partner : When a partnership firm is registered, newly admitted partner can ask for his rights with the help of the court, whereas, it is not possible in case of unregistered partnership firm.

Restriction on Outgoing Partner:

An outgoing partner is restricted for the following activities:

- He cannot use the name of the partnership firm.
- He cannot represent himself as a partner of that firm.
- He cannot divert the customers of the partnership firm.

Registration of Partnership firm, and It's Dissolution :

As per Partnership Act, registration of partnership firm is not compulsory but optional. In other words, a partnership firm can carry on business without registration. Registration is not compulsory at the time of establishment. But it can be done afterwards also. If the partnership firm is not registered, it will have to face many difficulties. Therefore, in practical aspect it becomes necessary for registration of the partnership firm.

In every State, there is Registrar of partnership firms entrusted with the work of registration of firms.

Procedure of Registration:

If a partnership firm wants to be registered it must apply on the prescribed application form alongwith prescribed fees to the Registrar of Firms of the State. The application must include the following information:

- Name of the partnership firm,
- Place of business of partnership firm.
- Other places where the firm would like to carry on business,
- Admission date of every partner in the partnership firm,
- Permanent address and name of each partner,
- Period of the partnership firm.

The application partnership form should be signed by all partners or representatives of the partners. The name of the

partnership firm should not include such words like Crown, Emperor, King/Queen etc. without preconsent of the Government.

Registration : When the Registrar is satisfied with all legal formalities, he will issue a certificate of registration. When the partnership firm is registered any alternation regarding name of the firm, addressed of the partner, admission of a major partner, should be intimated to the Registrar of the Firm of that state.

Business realises there is certain amount of risk yet it is prepared to employ certain level of debt in the capital structure. If this level is exceeded, the tendency on the part of the investors to reduce the price they will pay both for debt and equity capital. This will have the unfavourable effect on the cost of capital. Therefore an optimum capital structure is one that maximises the market value of the securities in order to minimise the cost of capital. The return to the supplier of funds in a competitive capital market depends upon the degree of risk he is taking. Since the creditor has a prior claim to the equity shareholder in the matter of repayment of debt and interest the latter gets a return only after satisfying the claims of the creditors. Therefore the risk of the creditors is less than the owner and the cost of the business should be greater for equity funds than for debt. The cost is the amount foregone. The degree of risk in the alternate investment must be similar to the investment in this company. As a result of all these factors, debt is chapter source of funds than equity capital.

A point will be reached at which it will be found that the use of additional debt will be more expensive than the addition of equity share. When they find that the risk is increased, they will demand higher rate of interest. High leverage will make the position of equity shareholders more company and thereby the shareholders' return will vary.

This will increase the cost of equity also. Financing with debt will generally result in higher earnings per share than financing by the issue of additional shares. Up to a certain point, the increased earnings will result in an increase in the value per share.

Different Approaches : As regards the theory of capital structure there are different kinds of concepts propounded by

different authors. The main contributors of the theories are Durand, Modigliani, Miller and Solomon. Durand advocates two approaches as regards the valuation of the earnings of a company. They are (1) the Net-Income approach (N.I.), and (2) the Net Operating Income approach.

As regards the measurement of the degree of leverage of a company, above approaches are considered to be the extremes.

Net Income Approach : According to this approach, a company can increase its value or reduce the overall cost of capital.

Advantages to Retiring Partner: If a partner is going to be retire, he can get rid of the liability from the firm's activities by giving a public notice and information to the Registrar regarding his retirement.

Dissolution of Partnership Firm :

Dissolution of partnership two firm are quite different from each other. Firm's dissolution means when all partners discontinue their relations with the firm and no partner can carry on business under the name of the firm. In this case all partners are return their capital and share of profit. Dissolution of partnership means, when the firm can continues on the business except or leaving one or two partners. In this case, the outgoing partners are return the amount outstanding against their accounts. Thus it is clear that in case of firm's dissolution, the dissolution of partnership is compulsory whereas in case of partnership dissolution, firm's dissolution is not compulsory.

Methods of Dissolution of Firm :

A firm can dissolve in any one of the following method :

(a) Dissolution by agreement,

(b) Compulsory dissolution,

(c) Dissolution due to happening of certain events,

(d) Dissolution by giving notice,

(e) Dissolution thought Court of law.

Dissolution by Agreement: When all the partners of the firm agree for dissolving the firm, the firm will dissolve with the concert of all.

Compulsory Dissolution : The firm will be compulsory dissolved when all or except one partners are declared insolvent or due to certain event, the business of the firm becomes illegal.

Happening of certain Events : If there is no contrary provision in the partnership deed, the firm will be dissolved in the following circumstances : When the firm is constructed for a particular period and the period has expired.

Long-term liabilities including several items comprising the shareholder's funds like reserve, share premium, and balance of profit and loss account. But some authors include current liabilities also in this definition but that does not appear to have gained ground. When a company chooses to use a group of sources in some proportions, we refer to the resulting pattern as 'Financial Structure' of a company. Financial structure therefore generally will be composed of a specified percentage of short-term debt, long-term debt and shareholders' funds. This relates to the measurement of the relative degree of the different sources of funds of a company. The financial stability of a company depends upon the sources of funds and the nature of the assets held. The significance of capital structure of a company is derived from the essential difference between debt and equity. The nature of the several constituents of the capital of a company is discussed below.

Current Liabilities : These constitute an excellent source of funds from the view point of the income of the company, as these are generally free from payment of any interest. But there is the danger of the company meeting the obligations when due. As this is a short-lived source of funds, this serves as a provision of continuous financing. But non-payment of this liability when due does not bring the company into liquidation. In most cases even where there are defaults in payment, creditors are generally lenient and allow extension of time for payment by the company.

Fixed Liability : As regards fixed liabilities, there is the danger of repayment by the company when due. As the payment of the

principal amount usually extends to a longer period, there is less danger here than in the current liabilities. But failure to pay the fixed liability on maturity is considered a serious matter. This kind of source of funds generally will involve some restrictions on the management's control by the business in the form of covenants incorporated in the debt agreement. There is therefore difficulty on the part of management to adhere strictly to such covenants. It must be remembered that the effect of the fixed liabilities on the income is not like current liabilities. Long-term borrowing is usually more costly. Interest payments are costs of the business operations and are therefore deductible as an expense in computing income-tax. As the investment in fixed interest bearing securities becomes larger to that of equity capital, the position of the shareholders becomes weaker on account of larger claims out of profits by the debenture holders. According to some authors, the structure is generally considered satisfactory when debentures exceed 25%.

Preference Shares : Preference shareholders are technically the owners and not creditors. They cannot normally demand payment of their principal amount and dividend. Even if there is default in payment of dividend, they can insist payment of the same before the equity shareholders are paid their dividends. But the only difficulty lies in the fact that the preference dividends in arrears will accumulate and have to be paid before payment to equity shareholders. From the point of view of the effect on income, preference shares are not so favourable as fixed liabilities. Preference dividends paid are not deductible as business expense for computing income-tax. Usually the preference dividend rate will be higher than the interest rate on the long-term or short-term debt.

Equity Shares : In the case of equity share capital, there is no risk associating with this kind of financing because no dividend is legally payable until declared by the company. But there is much impact on income. The investor expects that his investment in a company will be protected from more than normal amount of risk. The return on the equity shareholders' investment can be increased if a larger proportion of investments come from long-term liabilities and the net income remains unchanged. This will increase the shareholders' risk of using their investment. Since the interest

charges and principal repayment on the long-term liabilities are fixed obligations, their failure to make these payments when due could throw the company in liquidation. Every company should have some equity capital, which is of course exposed to risk, since it has no guarantee as regards, payment of dividends and return of capital. This is of a type, which cannot be drawn at the contributors' option. As it is almost permanent, the management of the company can invest the same in long-term assets.

Trading on Equity :

Trading on equity denotes the process of using funds on which a fixed rate of interest or dividend is paid. A company is said to be trading on equity. When it uses debentures, preference shares and should be even distribution of profits to the investors. As the capital structure affects the company's capacity to pay dividends and to increase the revenue, it should be planned to maintain it in a satisfactory manner.

In maintaining the distribution policy of capital structure, the company should assess the profits available for distribution to equity shareholders, after transfer to reserve a percentage not less than the prevailing rates of yield on investments in companies of similar nature, because the investors will not have temptation to invest in this kind of company. The inverters would like to know whether a company, the capital structure of which is composed of different classes of shares is capable of earning sufficient amount of profits to meet the fixed interest charges on the fixed interest-bearing securities as well as payment of reasonable rate of return to the equity shareholders.

Factors Influencing Trading on Equity: The following factors need attention in connection with trading on equity.

The degree of fluctuation in the rate of return on equity shareholders' investment. Fixed interest charges on senior securities leaves a sufficient margin for the equity shareholders. Trading on equity acts as a lever to increase the degree of fluctuations.

In financial parlance, the terms leverage and trading on equity are used interchangeably. Success in business operations is shown

when the rate on the investments is in excess of the rate paid on the borrowed funds. Failure on the other hand, is indicated by a fall in the rate of return on investment as compared to the rate paid on the borrowed funds. Therefore when the burden of interest on borrowed funds becomes greater, there will be default in payment and this will result in insolvency or weaken the financial position of the company.

Risks: Trading on equity is advantageous if the market price of the equity share is higher than that would be without trading of equity. If a company is earning higher return on its investment than the return paid to the debenture holders and preference shareholders trading on equity is beneficial to the equity shareholders. If the proportion of borrowed funds is increased and is larger, there is the risk to the equity shareholders. Further the benefits arising from

Measuring Composition of Capital Structure: The financial analyst employs different measures for investigating the capital structure of a company. The composition of capital structure of a company is measured by the analyst by reference to the items of preference share capital, equity share capital, and debentures as contained in the financial statements and external factors such as the market value of the shares and debentures also. He is concerned over the relationship of the investments by the loan holders and shareholders. As the investment of the loan creditors becomes larger, the position of the equity shareholders becomes weaker because of the larger claims by the former.

When deciding the proportion in which to employ the various sources of funds, the company will like to realise the general objectives, which are significant. The management will prefer to minimise the risk. The shareholders in deciding upon the nature of the financial structure will seek to maximise the income and minimise the risk.

Partnership Accounting :

Computer Methods : Capital Accounts of Partners. If the new business is started this year, voucher entry is to be made for capitals brought in by partners. For this partners' Capital Accounts are to be opened. This is receipt for the business. So by pressing F6 key Receipt

page will open. Firstly there will be "Cr." Beside this the name of partner who brings capital is written e.g. Gupta & Co.'s Capital A/c. In the amount column the amount brought by him as a capital will appear. If the capital of the other partner is also to be written, then press enter once, again the word "Cr." will appear, where the name of the other partner is to be written e. g. Pankaj's Captial A/c. The amount brought by him as his capital is to be written on right side.

- Now if all these amounts are brought by Cheques, press enter key twice. The word "Dr." will appear where the name of the bank in which cheques are paid will be written, e.g. Bank of Panjab, Trikon Bagh. Now the bank balance lying in that bank account will appear beside the name of the bank. This is very informative.
- Now make entries for Payment of Credit Purchases. Here again press F5 key and the payment page will open, where the payment for purchases will be recorded. By there would be Dr. (By) line, where the name of the trader to whom payment is made is written. Then write amount on right hand side. Now press enter key twice and we get Cr. line where we write Cash A/c. Alongwith this cash balance will appear. If a cheque is given, then instead of Cash A/c., beside Cr. we write Bank A/c. Here the name of the bank is written. This entry will immediately give bank balance of that bank account.
- When payment is Received for Credit Sales, press F6 key so that Receipt page will open. Here beside the word Cr. we have to write the name of the 1 customer who has made this payment. It is not necessary to type his full I name. Simply press the key of the first letter with which the name of customer ! starts. This will give a list of all customers whose names start with this letter. With the help of arrow key, move the highlight on the name of the customer who has made payment and give enter. With this the name of that customer will be automatically typed beside Cr. Now give enter twice, so that you come to Dr. line where you can

write either Cash A/c or name of bank account if cheque is received. This will give either Cash balance or bank balance.

- Now record the Purchases of Fixed Assets. If it is a cash purchase press F5 key so that Payment page will be opened and the word Dr. will be there. Just beside Dr. we write the name of the asset that we have purchased, e.g. Furniture A/c. or Office Premises A/c or Motor Car A/c or Machinery A/c or Computer A/c or A. C. A/c. etc. On the right side, the amount paid is written. Then pressing enter twice, we come to Cr. line. Just besides Cr. we write either Cash A/c or Bank A/c. Generally it is Bank A/c. only, as we generally purchase fixed assets with the help of a cheque. With this entry we get bank balance of the account from which we have made payment.
- Now we go to Contra Items : When we pay cash into the bank or withdraw cash from the bank we have to make Contra Entry. For this, first we go to Voucher Entries and press F4 key, so that Contra page will open. Suppose, we withdraw Rs. 25,000 from the bank. On Contra page, in the first line, just beside Dr. we write Cash A/c and on right side we write the amount. Now give enter twice and we get Cr. line where we write the name of bank account from which we withdraw cash.

Now you can see that beside the Cash A/c line, cash balance will appear and in the next line where we write the name of the bank account, the bank balance will appear. Similar entries will be made for depositing cash into the bank.

- When entry for an Adjustment is to be made, press F7 key on voucher entries page. This will open Journal page. Suppose, an entry for depreciation on furniture is to be made. Now beside Dr. type the word Depreciation. It is not necessary to write the full name. Simply press key for letter "D" on key-board and so on right hand side Depreciation A/c will appear. By giving enter on Depreciation, the word Depreciation will be typed. Now enter the amount of depreciation on right side. Press enter twice and we get Cr.

line, where we write the name of the asset, say, Furniture A/c.

- Now press Esc. key and come to Gateway of Tally. Then give enter on Balance Sheet. The balance sheet will open before us showing effects of all entries made so far. If we want to see detailed figures, then we press Alt + Fl key (i.e. keep Alt. key pressed and then press Fl key). This will given detailed Balance Sheet. If we want to see the details of income and expenses, we bring highlight to Net Profit and give enter. Thus Profit and Loss A/c will open, where we can see both Trading A/c and P & L A/c. For detailed Profit and Loss A/c, we have to press Alt + Fl key.

If we want to see Trial Balance showing the balances of all accounts for which entries are made, we come to Gateway of Tally and give enter on 'Display.' Display page will open, where the first item will be Trial Balance. If we give enter on Trial Balance, the whole of Trial Balance can be seen on the screen. Besides, on Display page, we find Ratios, which will show some important ratios from the transactions that we have recorded.

If a minor, does not want to be a full partner on attaining the age of majority, it is his duty to give public notice to this respect, otherwise he will be treated as partner by estoppel.

Difference Between Partnership & Co-ownership

S. No.	*Basic of Difference*	*Partnership*	*Co-ownership*
1.	Agreement	In partnership business there is written or oral agreement.	In co-ownership, agreement is not necessary.
2.	No. of Members	In partnership business, minimum 2 members and maximum 10 in banking or in other business 20 partners.	There is no such restriction in co-ownership.
3.	Object	In partnership, the object of business is earning profit.	In co-ownership earning profit is not necessary.

4.	Transfer of interest	In partnership a partner cannot transfer his interest of business without consent of all partners.	A co-owner can transfer his interes without the consent of other co-owners.
5.	Dissolution	Partnership is dissolved on the death, insolvency, or insanity of a other partner.	In co-ownership, such incidents have no effect.
6.	Mutual Relationship	Every partner is the agent of the business firm they are liable for one another's work.	In co-ownership he is not the owner. Therefore they are not responsible for one another's act.
7.	Act	Partnership is regulated by Indian Partnership Act, 1932.	In co-ownership, there is no seperate work governing co-ownership activities.

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10

DATA PROCESSING AND PROGRAMMING LANGUAGES

The conventional data processing methodologies, which have been prevalent upto middle of seventies, consisted of independent computerization of the individual functions of a business concern. For example, the computerized application systems, consisting of programs and files, would be designed independently for payroll, accounts receivable/payable, personnel records, inventory, sales analysis and forecasting, purchasing manufacturing, costing, etc. In each case, the requirements of a particular application will be studied in isolation from others, and make decisions without taking into consideration the possible uses of same data for other business functions. The files and programs for a particular application will be tuned for maximum efficiency for the processing involved in that application only.

This conventional approach might have had justifications in the early days of computing, when computers were costly, less powerful and requiring judicious and efficient use of computer resources.

There are following two main aspects in the operation of the punched card system. They are :

This deals with coding, punching, sorting and manipulating the cards.

This deals with analysing the subject matter to which the punched cards are to be applied.

The operation is done in this system as follows :

After inserting cards, the operator reads off the business data from the original documents and depresses the appropriate key, when punching is done. The cards are of standard size and contain columns for numerical position from 0 to 9 which are divided into group called "fields". Each field represents the nature of data to be recorded. Before punching is done, it is necessary to 'code', that is, the number or letter being assigned to each branch, region, etc. When the code is punched in the card, they will be sorted and interpreted by the tabulator under that code. The cards are then re-punched. The cards can be added on the tabulator and the total can be agreed with the adding or listing machine total. The verified cards are then sorted in the sorter which senses the holes in the pre-arranged field and the cards are now sorted in the required order. The sorted cards are then fed with the tabulator. By the use of this machine, single cards can be listed, group of cards can be added or subtracted and the result can also be printed. Shareholders' register can be maintained to record the amount due on calls, dividend payments are interest on calls in advance. Sales ledger can be kept by means of ledger posting machines, punched card machines and computers.

There are various types of punched card machines in the market and it is proposed to give a brief description of each of the machines in this chapter.

(a) Column Indicator : A small printer is attached to the left hand card carrier which column is reached on a numbered plate at the rear of the punch.

(b) Tabular Rack : Skipping is effected by depressing the skip key. This operates the tabular rack and allows the card carrier to move the card until their movement is arrested by an insert position in the rack.

This punch permits a very high rate of output. A depression of the punch key causes a card to be fed and punched corrections can be made if necessary to the information setup. A number of cards

can be punched with identical information at a speed of 90 cards a minute by the use of repeater key.

Key punches are equipped with a keyboard similar to the one in a typewriter. The operator depresses keys to punch holes just as the typist depresses key to print letters on paper. When each key is depressed the character code corresponding to that key is automatically released to a reading station. When it reaches the reading station, the same character is again transmitted back to the next card.

This is an electrically operated machine equipped with a movable, light-touch, alpha-numeric key board. A typewriter key board is available as an alternative. A punching programme for a particular card format may be set up at the beginning of the job with a small pluggable control panel. The programme can give following information:

1. The card will be neater and legible.
2. There is considerable saving of time in the preparation of statements and reports.
3. There is quick calculations such as wages and invoices.

Data Processing :

Data processing machine deals with processing of date and information needed by a business organisation. This consists of classification, sorting, summarising, storing, reproducing and communicating the data. It is a series of planned operations and actions upon data to achieve the desired result. Data processing refers to the procedures and device used. There are many types of data processing depending upon the size, speed, costs and application. The particular objective of a data processing system depends upon the nature and amount of information required. This will differ from one industry to another.

(A) Accurate and speedy business information to be supplied to the customers such as invoices, statements and reminders, etc.

(B) Reports required for the use of the management of the company.

Data can be handled on a real-time basis. This information enters the system as it happens. It consists of a group of computer programme functioning in a manner which enables the management of the company of supply information to an activity whenever information is demanded.

Example: Automatic air traffic control.

Computer system is usefully employed in material control, finished stock control, production planning and budgetary control, *etc.* The important use of a computer in an industry is data processing. The business data can be anything from the information concerning any department of a business concern.

What is a Computer in Modern Time :

The meaning computer has been explained by different institution few of then are discussed below :

The USASI defines a computer machine as follows :

"Computer is a device of solving problems by accepting data, performing described operations on the data, and supplying the results of these operations. Various types of computers are calculators, digital computers and analog computers."

The ISO defines computer as follows :

"Computer can be defined as a data processor that can perform substantial computation including numerous arithmetic and logical operations, without intervention by a human operator during the run."

A computer of Electronic Data Processing (EDP) machine is an electronic machine employed to process the business information. Computer is a generic term. It is mechanised information converter and operates mechanically to convert information of unusable form in a refined and valuable form. It analyses, records, interprets, classifies, counts, merges and sorts information in the field.

Heavy initial costs have to be incurred for its installation. Its maintenance costs is also high.

The work involved is on a very large scale so that only huge companies can have it installed.

This is a device in which the programme and data are fed and read. This unit performs the functions of getting information into the system of computer. It performs the functions of receiving data and instructions. Information to be fed are usually taken from ordinary business documents-handwritten or typewritten. The written input information is converted into a machine readable form. This operation consists of preparing punched cards containing the desired information, from documents and information fed into this unit. The computer handles information in a language of patterned electrical pulses. It cannot operate on the spoken or written symbols of human communication. To place information in the machine, it is necessary to translate from human language to mechanical language. This translation process involves two stages. The first stage is to reduce the data in other symbols to a binary arithmetical form. In the digital computer system, in the form of arithmetic which is different from our system which is based on ten digits is used. The binary system is based on a two digit system with symbols 0 to 1. In the second stage, the work involved is the punching of holes in specially designed cards or paper-tape, the data programme.

It is not possible to write general purpose querying programs for ad hoc, on-line information needs. All needs for information must be pre-planned and independent programs should written for each need. The management may have to make decisions without necessary information because it is too costly and time-consuming work to write new programs to make the necessary information available.

The application programs are dependent on data definition and storage. Recall that all important file characteristics and record descriptions must be given in a computer program. Any change in file characteristics or record description requires modifications in the program. For example, if we change a file's organization from sequential to indexed, it is necessary to modify the program and write it again. Also, the program must know the exact record descriptions even when it uses only a few fields from the record. If a new field is added to the records, or a field is deleted, it is again necessary to modify the program. Since the business applications

are constantly being modified to include new or changing requirements, it is necessary to maintain the existing programs, although, logically speaking, the program function remains same. Thus, the conventional approach discourage growth and evolution, and needs considerable investment in maintenance of old programs.

Even the data descriptions locked within programs are not complete. Certain relationships between data is specified in the procedure division. For example, we may have a file contain academic records of the students and another file of sports achievements of the students. The linking of two files is done in procedure division by matching (say) roll-numbers of a student in the two files. In fact that the two files are describing the same entity, the student, is hidden in the procedure division, and is not a part of the data description. Thus, the data descriptions, even collectively, do not represent a total picture.

There is little control over access data. In most computer systems, a programmer either has full access to a file or no have been built, which files are used in the organization, *etc.* The DBMS will provide a language for indicating how we wish the data to be stored inside the data base. The language is usually called Device Media Control Language (DMCL).

The external scheme refers to a view or a subset of the conceptual scheme. The data base is to be shared in many business applications. However, an application will not require access to the whole data base. Therefore, the external scheme is defined as a subset of conceptual scheme, and it contains only those data descriptions which are relevant to an application. A number of different external schemes may be defined for a data base. The application programs are written with respect to specific external schemes. A separate language may be available for defining them, or DDL itself may be used for this purpose. The external scheme is also called as sub-scheme (and conceptual scheme as merely the scheme).

The applications programs will be written using some programming languages. They may be stand-alone query languages supported by DBMS, or may be languages like COBOL with suitable modifications. These modifications will pertain to extending COBOL

for interacting with DBMS. As we will see in the next section, COBOL has already been officially extended for this purpose.

(a) decides which portions of conceptual scheme are involved in the request (by using the mapping between external scheme and conceptual scheme),

(b) returns to the applications program of only that data which are relevant to it, and in the format in which it is wanted by the program.

The concerned with the protection of data base against accidents and errors. For this purpose, it maintain backup copies of data base, change journals containing record of every modification made to data base, and log of transactions processed by DBMS. Using these, it is possible to restore a database to a correct state, undo faulty updates, or re-run certain transactions.

The Data Base Task Group (DBTG), and its subcommittees, of the CODASYAL the same organization which maintain COBOL has proposed a data base system standards, and extended COBOL for data base interactions. Many big manufactures and software houses provide DBMSs according to these standards, and such DBMSs are widely used (the major exception is IBM, which opposed DBTG recommendations, and offers a different DBMS called IMS, Information Management System, which is hieiarchical in nature. A hierarchical structure is, in effect, subset of the network model. However, many software houses offer DBMSs to run on IBM computers). Among the well known data base systems are Cincom's TOTAL, MRI's System 200, Honey well's IDS II, and DEC's DBMS-10. In this section, we will introduce the major concepts of network data model through examples.

The relational data model is an elegant and powerful DBMS model. It meets the DBMS objectives listed earlier as well as, and in many cases even better then, the network model. It is certainly going to be used widely due to its inherent simplicity. It also has sound theoretical foundation, which helps us in designing data base systems in the most desirable form for data storage- retrieval and update operations. It offers a uniform framework for subscheme definition, integrity (quality) control, access control and authorization.

A DBMS is a tool. It is a generalized software system, and one pays in terms of software overheads to reap the benefits it offers. Just the use of a DBMS does not however, guarantee that its claimed objectives will be realised. A critical planning and control is necessary, otherwise there is a danger of inefficient and costly system that could be disastrous for the organization.

The proponents of DBMS have proposed an infrastructure for design of information systems using DBMS software. The most important part of the infrastructure is a person (or, a group) to perform the task of data base administration. The person, called data base administrator (DBA), is the central controlling authority for definition, storage structure, usage, accuracy, security and privacy of data in the data base. Obviously, he (or, she) is a single most important person who imposes a centralized control so important for designing databases integrated to serve many applications. We will outlines the major functions of DBA in this section.

The DBA considers the data needs of various applications. He forms a total picture of the data and their inter-relationships using the organization-wide perspective (and not unduly biased by any single application). The total perspective is important for obtaining a database that would be much more stable in its structure in the face of application growth. By the help of users, he identifies entities, attributes and their interrelationships. He defines names for data items and standardizes their formats; he always been the convenience and efficiency of problem solving. The methodology of solving business problems as presented in the previous chapters has a significant scope for advancements. The objectives of this section is to outline impacts of recent developments and anticipated advances on business data processing, which would also make us aware of limitations of the methodology we have learned so far.

We considered the needs for better methods of business data processing. The developments of COBOL, file processing software (and systems like RPG-the Report Program Generator) were the direct consequences of increasing utilization of computers by business organizations. COBOL itself has been enhanced from time to time to include problem-oriented features by providing higher-

level, non-procedural statements like SEARCH, STRING, SORT, *etc.*, and the Report Writer facility. The developments of direct access devices like disks have made it possible to process data on-line. Further improvements will result from advances in the hardware, device, and software technologies. While the nature and requirements of business data processing will remain same, better facilities will permit computerization of more and more business functions, resulting in integrated data processing systems. An integrated system is the one which supports many business activities using a single data base. COBOL will undergo further modifications, extensions, and new languages will be developed for interaction with computers.

Let us first consider advances of the hardware front. The large scale integration (LSI) technology used in the manufacturing of electronic circuitry has already reduced the cost and physical size of computers by a large factor and has increased speeds of computation and data transfers. This trend will continue in future, and a stage will soon be reached when the execution and storage efficiency in the design of data processing systems will become a secondary factor, and the prime considerations will be maintain ability and extendibility. The low costs will permit design of special purpose computers for every application at a very reasonable cost. By duplication of components or other methods, the computers will become error-tolerant, fail-soft, and reliable. This will result that from onwards the computer systems will be continuously available for use. Moreover, the maintenance of computers will become simpler, and trouble-shooting speedier and even on-line. The hardware designs will incorporate modularity and tailorability, which will permit design of compatible systems.

Computing systems consisting of multiplicity of computing elements and other resources, interconnected with each other, have already been developed. Such computer networks facilitate distributed processing of data, since the resources for computing can be physically distributed. In near future, it will become cost-effective to employ such systems for data processing within an organization. Such systems have advantages of high performance, fast response, high availability, high reliability, automatic load

sharing, and adaptability for changes and replacements. The various computing elements will either act as elements of the overall team and carry out whatever tasks come in their way, or each element will be dedicated to a specific data processing function like inventory transaction processing. The decentralization of the computing power will permit taking the computer to the source of data instead of the reverse being practised now. This will obviously result in more automation of business functions.

Due to the reducing cost of hardware, it will be possible to build into it the functions currently performed by software. Thus, the future systems will have less complex and more reliable software, with negligible overheads of the system software. Providing software facilities in hardware is also known as software enhancement. The systems of future will include facilities for automatic monitoring of the performance of hardware, software and application programs, and their automatic 'tuning' to enhance the performance.

The advances in memory technology will permit systems to have the main memories of a very large sizes. The bubble memories and laser memories will even make mass storage devices like disks obsolete. The magnetic tapes will be used only as archives. The major advantage of these memory systems, besides large sizes and fast transfer rates, is that, unlike disks, they do not have any moving parts, permitting easier maintenance, small physical size and higher speeds.

Minicomputers and microprocessors have already attracted great attention. The minicomputers have small physical size, small main memory size, low cost, and high reggedness. Some minicomputers already in the market which are comparable to big computers. The distinction will become more blurred in future. The input/output devices of minicomputers are also usually minis : less costly, small sized, with low data-transfer rates. The minicomputers are usually found in small configurations and performing special functions. Sophisticated software is also available for them. The potential of minicomputers in computer networks and distributed processing has already been established, and, in future, they will give further boost to these trends. The microprocessors, as the name suggests, contain the processing

element (CPU) and a small memory. Their instructions are primitive in nature. They are well suited for interfacing with devices and for carrying out small amount of processing.

There will be major developments in the device technology. The ones which are in current use are electro-mechanical in nature and have data transfer speeds much lower than the speeds of electronic components of the computer. Although speeds will be improved in future, the main thrust of research will be on development of new media for input-output. Electrostatic and ink-jet high speed printers are already available which can print upto 10,000 lines per minute. Further printer speed improvements are limited because there is a need to move the printer paper mechanically. For auxiliary storage devices like tapes and disks the capacities, densities of recording, and data transfer rates will improve. The disk devices with read/write heads for every track are already in use, making it unnecessary to move access arms and eliminate access times to tracks. Their is a very strong motivation for development of new media whereby transcription of source data typically, from documents to the costly punched-card medium can be eliminated and the source documents like customer-orders, bank-checks can be directly fed to the computer. Magnetic-ink character recognition and optical character recognition devices will be developed further and will be commonly used. The computers will be able to produce their outputs as microfilms or laser-encoded photographic plates which are convenient in handle and store. The cathode-ray-tube devices having a screen like television will become more popular and encourage on-line data processing. Using microprocessors, it will be feasible to design simple on-line interaction systems with 'intelligent' devices. Significant advances are also expected in recognition and generation of a voice/speech that will make computers more human like : with eyes, ears, and a tongue!

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SENSITIVITY FOR BUSINESS ALTERNATIVES

Standardization of Accounting in our country have been suffering from the limitations of definite guidelines in the preparation of accounting statements, uniform applicability of accounting practices and variations in interpretations of legal and theoretical requirements. Changes in the social, economic and political environments have also created circumstances under which accounting principles need to be reviewed. To attain the maximum possible uniformity and to do away with the discrepancies, the accounting theorists and practitioners throughout the world have been concerned for a long time. Very few attempts have, therefore, been made towards forming accounting standards; issuing guidelines for their applications and revising them have already become a part of the desire to improve the financial reporting forms and disclosure modes and requirements. Theoretically, the accounting standards serve as a device for developing the conceptual framework. They bear solutions to some tricky accounting issues and represent the best method and a corresponding technique for reporting information system on national, regional and global levels. The history and development of accounting standards and the process of their formulation in some developed countries and the world as a whole could give an insight into this process.

He should be in an enviable position to think of divergent methods of performing the company's goals because he knows the economic criteria by which these management methods will be tested. -His sensitivity has already been developed in a number of ways that he may not even realise at this point. For example, the fact that a business manager realises that machines deteriorate and are continually made obsolete by new technologies makes him aware of the economic advantages of replacing present machines, even those which still have the original capacity to work.

Sensitivity to business alternatives is a factor in economic awareness because economic awareness is based on the observation of economic contrasts. The degree of economic awareness in some industrial leaders seems to indicate that they have come by it naturally, but there is no reason why economic awareness cannot be produced and highly developed by education, and the first step in this, direction is to increase our-awareness of business alternatives.

Sensitivity to business alternatives is heightened by the recognition of the economic differences between different alternatives. These differences are in fact the forces that create the business alternatives. For example, the executive in engineering, production, finance, or sales who senses in the make ready process of all the machines in his factory that there has to be an alternative to the lost machine time while the operator makes ready for the next run, has achieved a sensitivity. He is aware that a process that uses unproductive labour during part of its cycle can be challenged by a process designed to eliminate all or part of that unproductive labour of the company.

Sensitivity to business alternatives can be developed by systematically seeking alternatives. This should be done without waiting for instructions from top management. It may have to be done alone if no one else is motivated to make the same search in the company.

We believe that the business manager must continually practice observing economic differences whenever he sees an operation. He should then attempt to identify the elements of cost and imagine how any important cost item might be reduced or eliminated by

incurring another cost in its place usually a different cost at a different time. We recommend that the business manager practice this actively, even to the extent of keeping a book or file of these ideas for investigation and follow-up.

Mean while the present management student, whether he is in industry or in college, can develop his sensitivity to business alternatives by imagining hypothetical alternatives. To help him in this, we proposes to advance his awareness of differences and his ability to see business alternative courses of action. In the following examples, the techniques are secondary; in fact, no attempt is being made to develop new techniques but only to apply those that the business manager has now acquired.

We would like to point out also that we should not be viewed as an illustration of the application of managerial and engineering economy. The important objective at present is to increase the student's awareness, not to serve up illustrations of engineering economy principles. We trust this will be a dynamic approach inasmuch as "application examples" can be a static educational experience, because the student will seldom experience a situation which duplicates the illustration in the text.

Einstein once said, "Imagination is more important than knowledge". We hope, therefore, that the reader will practice an imaginative use of this management tool and that he will see in the following examples, not rigid applications, but examples of someone's economic awareness.

As noted, the point of most economic operation may or may not occur at the manufacturer's rating. In the given example the factors which determined this point were the labour rate, the required output or degree of utilization, the maintenance cost at a given rate of production, the expected life with a given work load, the degree of fineness needed, and the minimum required rate of return.

If safety hazards are not created by the business decision, it may pay to "overrate" equipment as long as some conditions exist which are favourable to "overrating". In some cases the only added cost is that due to the shortening of the machine life. But this cost is far in the future and, in consideration of the time value of money. It

is less significant than the earnings, which are in the immediate future.

Exchange Acts 1933 and 1934. Vide these Acts, any company willing to trade its securities to the public is required to furnish its data in a prescribed form. Simultaneously, it also has to prepare prospectus containing certain information required under the SEC Act 1934. These Acts serve as rules, standards of accounting and disclosure in reporting the informational needs of the present and potential investors. It is pertinent to note that the SEC has been closely working with the members of the US accountancy profession to develop and evolve the accounting standards.

Accounting Principles Board (APB) came into existence in 1959 after the Accounting Procedure Committee (APC) had failed to meet the needs of public at large. It aimed at regaining the confidence of the public in the financial reporting system prevailed up to 1959. Its aims were also to achieve the objectives of the programme set up by AICPA in maintaining the appropriate practices and narrowing the areas of differences through the minimisation of the alternatives adopted in reporting system. Briefly, this body was promulgated to "make or authorise the public pronouncement on accounting principles". From November 1962 to June 1973, it issued 31 opinions and 15 accounting research studies. Since its establishment, the Board was facing sharp and heaped criticisms from many parties; the industrialists described it as rigid and interfering in the legitimate rights of the corporations. Further, it was accused that it quickly responds to the pressure of the outside parties. Its organisational structure was also criticised on account of having comprised part-time practitioners. Hence, other parties like companies, government, etc., were not represented in the body of APB. These factors led to the loss of the faith of the professional, academics and the business enterprises in the Board. In 1971, the Wheat Committee was established to overcome the critics aroused against the structure and the functions of APB. Ultimately, the Committee proposed that the APB should be wound up and replaced by a new accounting standards setting body entitled Financial Accounting Standards Board (FASB) in 1972. This proposal was speed as well as the depth of cut, the tool material, cooling the cutting tool, and so on.

One of the best known examples of business research to determine the economic differences between alternatives is the work of Frederick W. Taylor on the economic life of cutting tools. We will take this example to explain the necessity of research to establish the values of cost elements after economic awareness shows their existence.

Taylor, who is acknowledged to be the father of scientific management, did many experiments in other fields to quantify the economic differences between the alternatives of which he was so keenly aware. Taylor set a good example for engineering economists by demonstrating the need for research and a scientific approach to produce the information needed for an economy analysis.

The economics of tool life arise from the fact that high cutting speeds reduce labour cost but also reduce tool life and increase the number of sharpening for a given quantity of production.

We will define economic tool life as the most economic operating period until resharpened many times, but note that the number of sharpenings will be the same for each tool just so much total steel can be removed.

Sometimes inability to analyse economics of a situation is solely the result of not having defined the situation in the first place. Until a situation can be clearly visualized it is impossible to envisage the present economic model no less than many alternatives to it. As a result of the failure of anyone to define the situation and establish an issue based.

Thereafter, the Board issues exposure draft on the problem concerned. The same draft is usually circulated widely to the interested parties.

Reactions or comments made by the parties on the exposure draft are invited within a period of 90-120 days from the date of issue. These comments are thoroughly studied by the Board with the help of technical task force. If the opinions are found widely diversified, the exposure draft is revised accordingly. Thereafter, it is circulated for the purpose of commentary by the public, otherwise it is voted by the Board members. If it is positively voted (i e., at least 4 votes in favour), it becomes a standard and published to the public.

The Institute of Chartered Accountants of England and Wales (ICAEW) has shown a keen interest on developing the accounting and reporting standards to cope with the economic effects generated with the advent of the Industrial Revolution in Europe. To provide enough information to the owners, the balance sheet was prepared for the first time. To protect the owner's interests, the British Government promulgated the Companies Law. This law requires the directors of the entity concerned to provide reliable and fair information on the position and the performance of accounting principles implying description of the prevailing accounting principles and methods in practice. In 1960s it was observed that these recommendations included a great diversity due to the availability of various accounting alternatives that could be used by accountants while discharging their duties. The diversity range was widened because every accountant used to adopt a different set of alternatives in preparing the accounts of the same concern. It was observed that the results of performance and the financial position of an entity, if prepared by two accountants, used to differ startlingly. This situation created a common concern in the British street which ultimately led to a harsh criticism of the profession and a loss of confidence in the information provided thereby. The shareholders and creditors were in critical conditions because they were unable to get the reliable and adequately disclosed information to underlie their economic decisions. In 1969, the ICAEW published its first statement of intent, affirming that it would "establish definitive accounting statements". This statement led to the formation of Accounting Standards Steering Committee.

The existence of some real management alternatives, the argument continued endlessly and aimlessly.

The yearly cost can be lower than this if the painting and surfacing are not due at once, or it can be higher because comparative costs depend on the features of the proposed management alternatives, for example, if the replacement bridge will have many safety features, including extra width, the present bridge can be charged with the yearly cost of the probable extra accidents over those on the safer replacement.

Although the proposed management analysis still leaves plenty of room for argument on items such as the economic life, net

realizable value, and the amount arid date of maintenance, the constituents of Rivertown can now argue on common issues.

Mistake almost identical with the failure to define the alternatives, is the failure to keep alternatives separate. By not adequately defining the management alternatives we may not observe that they are combinations of separate business alternatives.

Very simple example of this is the comparison of a new machine with the proposed redesign and reconstruction of a present machine. The latter is, in effect, to separate business alternatives, namely, the present machine "as is" and the proposed improvement of it. If the latter loses the contest with the proposed new machine, it is still possible that the old machine might win it without redesign.

Example is the proposal to replace two machines with a single big machine. In this case, assume that one of the existing machines, being less efficient than its teammate, is not assigned as much work. There are several business alternatives within "the proposal to replace both machines with a single machine", and to overlook these invites the possibility of neglecting some potential winners. Here the combination of business alternatives is very obvious but in some situations this may not be so apparent.

We encounter a business situation where there is no alternative course of action for example, where the incumbent machine has reached the end of its physical life and if not replaced at once will leave us.

They are usually issued on matters of major and fundamental importance in the area of accounting and information reporting practices. These statements are few in number. Each of them represents a general rule and therefore, may be applied to all entities irrespective of the sector to which the entity concerned belongs. The aim of such statements is to maintain a fair and adequate information in the financial statements of the concern. From legal point of view, these statements are mandatory since the are issued. The preparation procedure.

Depends upon predicting the number of failures that will get by with partial instead of 100% inspection. This naturally implies the use of statistical methods and the theory of probability.

Instruction in this area is beyond the scope of this book, but it is hoped that the need for these methods and all the advanced mathematical techniques used in what has become known as operations Research will become apparent to the reader and lead him to investigate and use above techniques where they evidently apply to the solution of his problems.

Statistical quality control presents the economic advantage of inspecting only a fraction of a production lot according to sampling procedures. Through the systematic use of control charts it will also serve to predict, locate, and therefore prevent, the causes of rejection of the piece. Probability theory is used in statistical quality control to determine the size of the sample and how much of the sample must pass inspection if the whole lot is to have no more than a specified limit of defective pieces in it. If the defectives in a sample exceed the limit, the lot from which the sample was chosen should be rejected. By the use of proper techniques this point can be seen approaching and, by the identification of assignable causes, prevented. As said, it is presumed that if the rejected pieces in a sample are below a certain limit the number of imperfect pieces in the lot will also be below a certain limit. This is only a prediction, and the certainty or reliability of this prediction is not 100%. This is a risk the user takes but, like all risks, he can reduce it at a cost, in this case at the cost of increasing the degree of inspection.

The reliability of the prediction of the limit of defective pieces that will be found in a lot can only be improved at the expense of increasing the size of the sample. One hundred percent reliability of the knowledge of rejects would, of course, require 100% inspection. Obviously, the higher the reliability, the greater the sample and the higher the expense of inspection. This in itself defines an economic problem: what is the extra cost of accepting extra defective pieces versus the extra cost of detecting them?

Somewhat akin to designing for imperfection is the idea of designing for short life. This statement is amplified and modified by the illustrations in the following examples.

To avoid any controversy by accommodating the needs of outside groups like structure of accounting profession, increasing

expansion of securities markets around the globe and the probable influence of foreign accounting standardisation bodies, particularly FASB, ISAC... etc. As a result of the aforesaid factors, the CCAB set up the 'Dearing Committee' in November 1987 with the aim to review the standard setting process in UK and other major industrial countries; to outline the basic purpose of accounting standards and their future, bearing in the mind the attitudes of both the government and public towards the regulation of the corporate sector; and to recommend on the very relevant and important matters like the most appropriate form of accounting standards, the position of standard in relation to company law and proper way to comply with it and to review the findings on the standard setting cost.

Standardisation to be met through the imposition of levy on the companies. To ascertain the compliance with the standard, the committee suggested the holding of a review panel to examine the "contentious departures from accounting standards by large companies". In this regard, the directors of the concern are required to report the deviations from the current standards in the accounts of the entities they administer. The proposal of Dearing Committee were well received. They were described as a leading step to relieve the standardisation from the hold of the accountancy profession. In the light of those recommendations a broader participation in the process of standardisation was possible.

During the process of standardisation. In his study, he focussed on many matters like the income statement which he considered subordinate one. He lays emphasis on the faithful representation of the financial statements through the creation of links between the captions and the corresponding figures thereof, etc. However, unlike the Dearing Report, Solomon's report was kindly received by the ASC. However, on account of being more practical, the Dearing Report gained more response by the statutory agencies. The government has considered it in the amendment made to the Companies Act, 1989 through allowing the secretary of the state "to support and make grants to standard setting bodies such as those recommended by the Dearing Committee".

The current composition of ASB reflects the participation of all interested parties in the financial reporting. It consists of 16 members

representing the industry, Company Law Board, Central Board of Direct Taxes, the Comptroller and Auditor-General of India, and the accounting profession.

The most important objective of ASB is to harmonise the financial reporting practices in India, in order to meet the informational needs of the interested parties. This can be achieved through fair, true and adequate presentation of the financial statements of the entity concerned. In this regard, the ASB is entitled to issue the standards and the guidelines which will contribute to the enhancement of disclosure level in the basic financial statements.

However, a considerable insight into problems involving personnel turnover, absenteeism, management or employee training, delegation of authority, safety, productivity, morale, and so on, can be obtained by sensing the economic differences between alternatives. After some thought the analyst will often find more and more ways to quantify these problems and evaluate them mathematically.

We have suggested here that one must develop an awareness of the actual or potential differences between alternatives before he can begin to suggest alternative courses of action. Often the alternatives may exist only as preliminary designs which will have certain economic characteristics. The knowledge of the difference between an existing process and one that might be built establishes the necessity which becomes the father of invention. Creativity and invention cannot be divorced from the economics of the situation.

We need more knowledge, more education, more ability in conceiving and establishing the differences between alternatives. We have the mathematics to evaluate almost any situation of any complexity, but the first problem is to find and establish the pattern of these differences. In this respect the mathematics is far ahead of our ability to determine these differences. A leading mathematician once said that Einstein was very fortunate when he conceived his ideas of relativity because the mathematicians had already developed the mathematics without envisaging the applications. The physical model of behaviour must be conceived before its mathematical model can be constructed. The mathematics is a valuable tool, but only a tool. Man is still left with the more difficult

job of recognizing the economic factors and conceiving how to quantify them or else he may never discover applications for very complex mathematical procedures.

The important need, therefore, is for research to obtain the data needed in decision-making, and the search for this data will be guided by man's sensitivity toward the differences which exist between economic alternatives.

So far, the council of ICAI has issued 18 standards. The guidance notes are primarily meant to provide guidance on the problems which may arise in the course of practice and on the issues for which the help is required. Therefore, these notes are recommendatory in nature, but the professionals used to strictly comply with them as if they are mandatory. The statement on certain accounting matters are few in number. So far, 3 of them have been issued by the institute. Such statements include the critical accounting issues and solutions thereof which may encounter the practitioner while preparing and presenting the financial statement of the concern. Hence, the ACAI finds it necessary to comply with the requirements of these statements in order to meet the informational needs of the interested parties. Further, it could be interesting to note that these statements and mandatory standards are equally obligatory to the auditor and the accountant of the concern.

After the Second World War, the size of the investments moving across the boarders has remarkably increased. As a result, the need to provide reliable information to foreign investors and creditors has emerged. This situation incited the academicians as well as the professionals to organise the regular meetings, forums and conferences in order to find out solutions to the problems of practice, develop the conceptual framework of accounting and to work seriously to satisfy the interested parties in financial information including the foreigners concerned. In Sydney, in 1972, the International Congress of Accountants was held. The delegates therein agreed to establish the International Accounting Standards of developing countries. After a thorough study of the issue concerned, the committee presents point-outlines to the Board. The later, in turn, comments on those outlines and in the light of these

comments the committee prepares a preliminary draft on the proposed standard. The Board reviews this draft and circulates it among all IASCs members for comments. In the light of the result of the study and the comments, the committee revises the exposure draft and submits it to the Board for approval. If it is voted by at least two-third of the Board members, it will be sent to IASCs members who, in turn, publish it in their respective countries for commentary purpose within six months from the date of issue. These comments are studied by the Steering Committee and thereafter, the final draft is revised and submitted again to ASB for approval which requires the favour of 75 per cent of the Board members. If approved, the draft will be issued as a distinctive standard. So far, the IASC has issued 29 standards. These standards along with their exposure drafts are usually issued in English language, and their translation to any language is possible with the need to mention that the translation is that of the approved text. The name of the accountancy body which has undertaken the task of translation must also be clearly mentioned. Further, there is no enforcement power to the standards issued by IASC. Therefore, its influence varies from country to country, depending on the degree of the compliance of the governmental agencies and other interested parties in the information reporting of the country concerned.

Standardisation in accounting and financial reporting practices is of a recent origin. The standard is technically viewed as the best alternative (accounting method and the corresponding technique) of an accounting treatment. If it is properly applied, the qualitative objectives of disclosure, viz., comparability, fairness and adequacy of the information reported, etc., will be enhanced.

Accounting standard setting has been a very effective mechanism in encountering the maladies and variations in accounting and information reporting practices on national, regional and international levels. Despite being young, accounting standard setting bodies have widely been spread on various levels.

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12

ASSETS CATEGORIES AND BUSINESS TRANSACTION

Accountancy a distinction is always made and maintained between the owner (s) and the business organisation itself. Business entity concept means that the business is to be treated as a separate entity by itself independent of the owner's entity. The organisation and the owner are to be treated as two separate entities. In the books of account of business organisation, each transaction is recorded from the point of view of the organisation and not from the point of view of the owner.

As such, when the owner brings money for the organisation, he becomes a creditors of the organisation and treated likewise, by keeping an account of the owner like other creditors. However, in the eyes of law (except in case of companies where shareholders are treated as distinct from the companies) the entities of the owner (s) are merged with the business organisation. In case the organisation is not in a position to pay off the creditors, they can recover their dues from the owners.

Assets mean properties of a business organisation or the amount which is outstanding and which the organisation has to receive from outsiders. These are the things of value owned by a organisation. It enables the organisation to get cash or benefit in future, cash, amount with bank, debtors, machinery, buildings, furniture, goods, bills receivable, etc. are all examples of assets.

To distinguish one type of assets from the others they have been classified in following three categories:

Liquid Assets: All such assets as are in the form of cash or which can be quickly converted into cash are called liquid assets. Cash, Bank, Investments, Bills receivable, *etc.*, are the examples of liquid assets.

Floating Assets : All such assets whose value constantly change during the course of business and which are meant for either sale or conversion into liquid assets (say cash) are called floating assets. The examples are stock in trade, debtors, etc. Floating assets are also sometimes called current assets or quick assets.

Fixed Assets : All such assets that are acquired not for sale but for carrying on the business and for the purpose of earning income and are held permanently, are called fixed assets. Buildings and lands, plant and machinery are the example of such types of assets.

In above context, a note of caution must be given. It is the nature of the business and not the nature of the asset that will decide whether a particular asset will fall in the category of fixed asset or floating asset. Machinery will be fixed asset for a business concern producing goods. But the same will be floating asset for a dealer in machines. Likewise furniture will be floating assets for a furniture dealer but a fixed asset for the rest of the business organisations.

Also which level/rank employees will be promoted. The company provides weights for efficiency also. The process of providing weights for efficiency follows a defined pattern every year irrespective of the category of the employee. In the very first year HE provides such weight of 95 per cent and it gets reduced by 5 per cent every year till it reaches 75 per cent.

The projected salary stream is discounted at 12 per cent rate by the company. The rationale of using this discount rate is that it is the rate which this company uses as the minimum rate of return in its capital budgeting decisions.

Company EC renders engineering and technology consultancy services to the society in the field of petroleum refining, petrochemicals, cement, etc.

Being essentially a consultancy business organisation, EC has attempted to assess the value of its human resources , grouped in four categories, using the Lev and Schwartz model for the first time in 1980-81. However, it discontinued the system later on. HRA system, though abandoned, is discussed because EC is in the process of redesigning the system.

The valuation process used by this company was 'salary' based which included both direct and indirect benefits given to employees. Further, an average of the minimum and the maximum basic pay against each level was taken. A charge of various allowances, provident fund, bonus and 'additives' was added to the average basic pay. 'Additives' was included to reflect the incidence of expenses like medical, leave travel concession, casual leave, etc. *The* per cent change of 'additives' was calculated by the company every year by relating the actual quantum of such expenses to actual salary.

The salary stream was projected till the retirement age of 60 years. For this purpose the employees of the company were grouped in nine age-groups of 5 year each. *The* valuation period was taken as the difference between the retirement age and the mean age specific to a particular age-group of employees. An increment factor of 5 percent per year (compounded) was taken to reflect the increase in salary in the valuation process.

The projected salary was discounted at rate of 10 percent to calculate the present value by the company.

Company MT organises and undertakes the exports from India of minerals and ores.

It values its human resources by using the Lev and Schwartz model. The final output of the system is presented by the company in two categories, viz., officers and staff. The organisation has actually grouped the employees in fourteen categories while carrying out the valuation exercise of human resources.

'Salary' is used as basis of valuation for this purpose. It includes both direct and indirect benefits provided by the company.

The salary stream is projected up to the retirement age of 60 years by loading the average salary at a rate of 10 per cent every

year, which takes care of increments and price rise, for all categories of employees of the company except chairman and directors whose salaries are projected on the basis of actual increments likely to be given during their association with the organisation.

The valuation period is taken to be the difference between the retirement age of the average age. Average age is calculated for each level/rank of employees.

The projected salary stream is discounted at the rate of 12 per cent to calculate its present value. This rate being the required rate of return used by the Government of India and by the company in evaluation of capital budgeting proposals of this company.

Business transaction can be explained with the following method:

Transaction 1 : Ramlal has started business with Cash Rs. 20,000. Business is a separate legal entity. From this point of view the business has received Rs. 20,000. Thus on the one hand the assets of the business have increased in the form of Cash of Rs. 20,000 and on the other hand the liabilities of the business have also increased in the form of Capital of Rs. 20,000. It can be shown by the following equation :

Equation

Assets	=	Liabilities + Capital
Rs. 20,000	=	___ + Rs. 20,000

Transaction 2 : Ramlal purchased Goods for Rs. 10,000. In this transaction Goods have been received and cash has been paid.

Assets

Cash + Stock	=	Liabilities + Capital
Old Equation 20,000 + __	=	_____ + 20,000
Transaction - 10,000 + 10,000	=	_____ +
New Equation 10,000 + 10,000	=	_____ + 20,000

Transaction 3 : Ramlal purchased goods on credit for Rs. 8,000. In this transaction the business has received goods and the seller is the creditor of the business.

Assets		
Cash + Stock	=	Liabilities + Capital
Old Equation 10,000 + 10,000	=	_____ +20,000
Transaction - + 8,000	=	_____ +8,000 + –
New Equation (10,000+18,000)	=	+ 8,000 + 20,000

Transaction 4 : Ramlal sold goods for cash Rs. 10,000 - (Cost price was Rs. 8,000). The trader has got a profit of Rs. 2,000 This transaction will have two-fold effect: (i) Cash will be increased by Rs. 10,000 and the Capital will also be increased by the same amount, and (ii) The stock will be reduced by Rs. 8,000 and the Capital will also be reduced by the same amount. It can be expressed as follows :

Assets		
Cash + Stock	=	Liabilities + Capital
Old Equation 10,000 + 18,000	=	8,000 + 20,000
Transaction 10,000 + 8,000	=	____ + 10,000
New Equation (20,000+10,000)	=	8,000 + 22,000

Transaction 5 : Ramlal withdraw Rs. 1,000 for private expenses. This transaction will reduce the Assets of the business in the form of Cash Rs. 1000 and the Capital will also be reduced by Rs. 1000.

Assets		
Cash + Stock	=	Liabilities + Capital
Old Equation 20,000 + 10,000	=	8,000 + 22,000
Transaction - 1,000 –	=	– + 22,000
New Equation 19,000+10,000	=	8,000 + 21,000

Transaction 6 : Ramlal paid rent Rs. 200. By this transaction Cash will be reduced by Rs. 200 and also the Capital will b reduced by Rs. 200.

Assets		
Cash + Stock	=	Liabilities + Capital
Old Equation 19,000 + 10,000	=	8,000 + 21,000
Transaction - 200 -	=	– + 22,000
New Equation 18,800+10,000	=	8,000 + 20,800

Transaction 7 : Ramlal sold goods for Rs. 6,000 on Credit. In this transaction his Assets will b decreased by Rs. 6,000 in the form of Stock and on the other hand his Assets will be increased by Rs. 6,000 in the form of Debtors.

Assets

Cash + Stock	= Liabilities + Capital
Old Equation 18,800 + 10,000	= 8,000 + 20,800
Transaction - - 6,000 + 6,000	= - + -
New Equation 18800 + 4000+ 6000	8,000 + 20,800

Transaction 8 : Ramlal's Rent Outstanding is Rs. 400. This transaction will increase the outstanding liabilities by Rs. 400 and reduce the Capital by Rs. 400.

Assets

Cash + Stock + Debtors	= Liabilities + Capital
Old Equation 18,800 + 4,000 + 6,000	= 8,000 - 20,800
Transaction - - -	= - + 400 - 400
New Equation 18,800 + 4,000 + 6,000	= 8,000 + 400 + 20,400

The above balances of Accounting Equation can be arranged in the form of a Balance Sheet of Ramlal.

In our view projection of salaries for the duration of valuation period requires two variables. Firstly, what will be the pattern of movement of employees in the company, i.e., whether employees will continue to occupy the present position or will they by promoted by the company. Secondly, at what rate incidence of increase on salary due to increments and inflation should be taken. As regards the possibility of promotion, most of the organisations have assumed the employees will continue to occupy the same positions at which they are at the time of valuation. Such an assumption is in-built in the Lev and Schwartz model. But Company HE and Company PC have considered the possibility of promotion. As regards the second variable, i.e., the rate of increment of salary, different organisations have used different rates in the research. For example, Company HE uses the rate of 5 per cent which is not compounded annually. Company EC uses a compound rate of 10 per cent. Company EC

uses a compound rate of 10 per cent. Company OL uses 10 per cent for every four years (compounded annually) and 25 per cent for every fifth year during the study.

To discount the projected salary stream of organisation to calculate the present value, again different organisations use different rates. In the study organisation PC uses the discount rate of 17 per cent, which represents its overall cost of capital. Company HE and Company MX use 12 per cent discount rate , as such rate represents the minimum rate of return used in their capital project evaluation processes. Company OL uses 12.25 per cent rate which happens to be the rate at which the government of the same cut off rate for the evaluation of human capital projects as used for the evaluation of physical capital projects s conceptually wrong and questionable.

In this study organisation HE has considered a discounting factor on present value of salaries to account for efficiency. No other organisation has followed such a practice during the study.

Conclusion :

The human resource accounting differs considerably in India in every aspect. Though the model used by various selected organisations to account for human resource is the same, i.e., the Lev and Schwartz model, the way the model is operationalised differs widely in this research. There is no uniformity of practices regarding calculation of mean salary, determination of expected tenure, projection of salary-stream for the expected tenure and the calculation of present value using a discount rate. It is suggested that the professional accountancy bodies like the Institute of Chartered Accountants of India and the Institute of Cost and Works Accountants of India should take more active interest in the subject of human resource accounting and take steps to develop and recommend a uniform approach to human resource accounting for Indian companies.

Projecting the salaries an annual increment factor is taken i account. The possibility of promotion of its employees based on the general promotion policy of the company is also taken into account for valuation of human resources.

The projected salary stream of employees is discounted at the rate of 17 per cent, i.e., its weighted average cost of capital, to calculate the present value of human resources of the company.

Suggestions for Standardisations of HRA Practices :

The study of the HRA systems of the five selected organisations provides an overview of the wide variations that exist in the practices followed to value the human resources. Though these organisations followed the economic value approach and used the Lev and Schwartz model, yet the process of accounting for the human resources differed considerably from company to company.

Salary is used as a surrogate for value by all the selected organisations assuming that employees will contribute at least equal to the salary paid to them. The mean of the grade is taken, as it is difficult to carry out the valuation exercise on the basis of actual salary level of employees. But the process of calculating mean salary differs from company to company. Though most of the organisations have calculated simple mean, Company PC uses the weighted average salary as a surrogate of value.

The valuation period for which the salaries are projected represents the time span for which the employees are expected to stay with the organisation. The final value calculations depend much on the length of the valuation period. But the practices vary widely from company to company. Company HE prepares a career chart and on the basis of the same determines the valuation period.

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13

PRACTICAL ACCOUNTING FOR MATERIAL, PRODUCTION AND LABOUR

Production Accounting :

Production Accounting be applied to the process of measurement and analysis? Is it really 'accounting' in the light of the statistical techniques involved? These are several open questions which may be frequently asked to have a clear-cut definition of production accounting. Before defining the phrase 'Production Accounting' as a whole it is better to study the terms in two parts, i.e., production and accounting. If accounting is only bookkeeping in the sense of maintaining records of income and out go and of changes in assets and equities, then perhaps there is an unwarranted borrowing of the term in this context. But accounting seems to have long outgrown the systematic recording of transactions. Consider the extent to which accounting is used as an instrument of control as indicated by the rise of controllership function in business, and the discussion of economic concepts of income that is now occurring in accounting literature. Certainly the measurement and analysis of the economic performance of a firm would seem to fit within the scope of accounting as it is now viewed by many members of the profession.

The point may be made that there are other measures of performance besides the production ratio, and that therefore it is only one kind of accounting.

There are of course a variety of ways of measuring economic performance. The only justification for giving the name of 'Production Accounting' to the method proposed in this book is that it is grounded on basic accounts of a firm, and like usual business accounting deals with all inputs; although in an economic rather than financial sense.

Measurement of production is also a part of production accounting. But the major task consists of the techniques and tools of accounting used in measuring, maintenance and analysis of cost records and improving production.

Production Budget :

Basis for Other Budgets : A budgetary system will probably be most effective in the accomplishment of management's objectives when plans are coordinated through a series of budgets developed for each function of the enterprise.

The production budget is the first of a series of manufacturing budgets which will be prepared in the over all programme, and the data contained in it will be the basis for the preparation of the materials budget and the labour budget. Furthermore, it is a prepequisite to the conversion of the overhead budget to the projected level of operations. These budgets, with others described in the Accountant's Handbook are essential in the preparation of a forecast income statement and balance sheet.

The production budget is usually based on the sales budget and the desired inventory levels. It is an estimate by time periods of the production volume as required by the preceding two elements. According to the Controllship Foundation study by Sord and Welsch approximately 85 percent of the manufacturing companies included in the survey developed production budgets, compared with the 90 percent that developed sales budgets.

We see again and again many individual businesses and many industries forced to unload excess goods on a falling market. Always produced during a period of high business activity, excess inventories usually represent high cost raw materials, high labour costs due to overtime and the less efficient efforts of labour when

jobs are plentiful. Also, quality is often relatively poor, since customers have to accept whatever is available when goods are search, and production is pushed without adequate time to exercise close quality control. In the reverse situation, inventories are usually insufficient to meet an upsurge in business which eventually gets underway. Filling orders is delayed until labour forces are built up and trained, sales losses occur, and we lose the appreciation in value on the upswing in costs. Stable production and steady jobs for plant and other personnel are difficult to maintain.

The production budget must be modified to give consideration to changes in the volume of working process at the end of each month. When the policy is to keep finished goods inventory at a minimum and related to sales demand, an increase in sales must be anticipated by increasing the work in process.

Availability of Raw Materials and Labour:

Production planning will be affected by the availability of both raw materials and labour. From time to time, shortages of materials may develop, and this obviously will have an impact on production scheduling. During World War II, nylon was rationed to commercial users. As a result, production of nylon-content goods for non war consumption was directly geared to the time intervals when nylon yarn could be obtained for these purposes. Labour strikes among employees of raw materials suppliers and transportation companies can production cycle indicates how far in advance of an increase in sales the increase in production must be planned. Similarly, a reduction of work in process must precede a forecasted drop in sales. In should be noted that production must be accelerated faster than sales on the upturn and decelerated faster than the decline in sales on the downgrade, if the policy of keeping inventories in direct relation to sales is to be followed. This is true because an increase in sales requires added production, both to meet the increased sales and to keep the inventory in the desired relation to sales. This is one of the undesirable features of attempting to maintain a fixed rate of inventory turnover for all rates of sales activity.

Production ordinarily should be scheduled within the limitations of both storage and manufacturing facilities. Storage may be costly, and except in unusual situations, inventory quantities should not be permitted to become so large as to require temporary additional facilities. The absence of proper storage areas may result in rapid deterioration of inventories. Additionally, obsolescence risk is greater with exceptionally large inventories.

A firm's production is limited, among other factors, by its manufacturing facilities. It is therefore important that the product be scheduled on equipment as economically as possible. In general there should be sufficient facilities to produce the planned volume and enough additional capacity to meet peak loads. Careful consideration must be given to planning production so as to avoid bottlenecks, whenever possible, and at the same time to utilizing the equipment as fully and as effectively as possible. Planning should initial a study of idle capacity and a scheduling of production so as to minimize it.

To the extent possible, plans should be made in advance concerning particular equipment to which certain size orders should be assigned for manufacture, Schroeder points out that even though sales fluctuate, it is still possible to keep production at fairly constant levels. He lists the following costs of fluctuating production not readily apparent from the records :

1. Obsolescence is a product of idle equipment, and depreciation results from overworked equipment. Both these consideration apply when production is seasonal.
2. Overtime is common when production volume changes sharply upward.
3. Production scheduling, and therefore meeting of delivery promises, becomes difficult.
4. Independent inventory volume fails to stimulate the sales force.

Stabilization of production with a condition of fluctuating sales must, of course, be accomplished through building up and reducing inventories at appropriate times. The problem of inventory policy

and control is indeed a broad and comples one, often, complicated by hand-to-mouth buying policies of customers. The advantages of minimum inventories must be weighed against those of stablized production when the two policies seem to run counter to each other.

Considerations favouring minimum inventories, i.e., production in line with sales requirements, may by enumerated as follows :

1. Minimum investment in inventories.
2. Reduced interest cost when capital is borrowed.
3. Less insurance required on inventories.

Less labour turnover, with resulting better morale, improved production, and reduced costs of hiring and training. Possible savings in unemployment insurance taxes under merit-rating provisions. Possible elimination of added labour costs of overtime. Less productive capacity required through levelling of production peak, thus decreasing fixed charges and unabsorbed overhead. Better balanced utilization of staff and better trained staff possible. Production in most economical size lots possible. More efficient equipment, labour, and supervision can be utilized. The extent to which each of these considerations of importance depends upon the following factors :

Adequacy of funds for financing inventory accumulations. Than one plant is involved, the manufacturing facilities and areas served by each plant, as well as time schedules for each product, must be considered.

Different lengths of time will be required to manufacture different products. Sometimes a product will require several weeks or several months to start and finish, hence, if 1,000 units of product are expected to be required at a certain time and the processing time is three months, it will be necessary to schedule manufacture to begin on these units at least three months prior to expected delivery date. Not only will it be necessary to take into account the fabrication of the finished goods but also the time period required to manufacture parts entering into the final product.

Rautenstrauch and Villers write that "to stabilize production and yet to adjust it so as to maintain the inventory at its optimum

level is one of the cornerstones of budgetary control." A problem which must be dealt with in scheduling production, therefore, is the seasonal element inherent in many business. The use of the natural business year is advantageous to companies having substantial seasonal sales fluctuations. The principal portion of sales may occur during certain time intervals, whereas during other parts of the year sales may be only nominal. Thus, if production is geared directly to sales deliveries, it may be that a substantial portion of the plant will be idle for certain periods, while working overtime during other periods. Such production schedules may not be economical.

Furthermore the environment in which many businesses operate today is such as to necessitate the consideration of public reaction to certain company policies. The community and work force have a keen interest in employment stabilization, and the effects of employment policy on these groups should not be ignored in production planning. Consideration must be given to securing additional capacity in order to provide a better balance with productive capacities of other departments.

When the policy of minimum inventories has been established, it is essential to have a proper balance of each type of product in the inventory at all times. Accordingly, a calculation of planned production is made for each product or line of products individually, and the results are combined to given a total production forecast. Heiser illustrates in Fig. 3 the preliminary computation of required monthly completions for one quarter. The desired inventories at March 31 are based on the sales estimates for April, one month beyond the current budget period, which must be made for this purpose.

In scheduling production, it is important to note the distinction between job-order production and stock production. In a job-order situation it is often impossible to determine in advance the exact kind of product which will be ordered by customers. Blocker and Weltmer point out.

This inability to estimate customer requirements forces the management to confine the production budget to general production

plans in the form of estimated direct labour hour,- machine hours, or estimated units of each general type of product, although in some cases an analysis of past sales can be made in order to ascer gain the elements and operations which are common to all contracts.

To the extent that orders can be obtained well in advance of manufacturing and delivery dates, it will be possible to engage in some production scheduling.

When production is wholly or largely for stock, the production budget can be more specific and give a more detailed analysis according to product line than is the case in producing to customer's orders. Preparation of a production budget in such a case involves a study and correlation of three types of information :

Preparation of the budget usually will begin with sales forecasting. This is the primary estimating factor, and from it will be developed plans for materials acquisitions, consumption, and inventories, as well as labour requirements and the anticipated cost. The flexible manufacturing burden budget should also be adjusted to the expected sales volume and combined with the materials and labour budgets into a comprehensive budget for manufacturing operations.

At the same time these budgets are being prepared, budgets for other items such as commercial expenses, capital additions, and research costs may be completed. In additions, needs for cash, as indicated by the preceding budgets, should be determined and plans made to ensure the availability of cash as required.

Heiser lists the various budget plans and the department involved in their preparation. Heiser shows which budget schedules affect others. The illustration demonstrates the need for integration of the various budget schedules, and Heiser states, "All the plans must be prepared on the basis of common knowledge, not only of the general directives, but also of the specific plans of related departments."

Upon the completion of the several individual budgets, they should be brought in a combined or master budgets. This will serve as a basis for the preparation of budgeted income statement and budgeted balance sheet.

Primary responsibility operation and objectives given him an equal voice in the establishment of budgets.

The development of budgets at the departmental level does not imply to any degree that the budget committee must accept, without revision, these preliminary budgets. It is the responsibility of the budget committee to review the several departmental budgets and weld into a unified whole; therefore, adjustments will doubtless be required. On the other hand, departmental supervisors are often best-equipped for formulating initial budgets, and accordingly they should be given the responsibility for this task.

Budget Manual : A manual should be development which sets forth the objectives of the business, the part which a budget plays in the accomplishment of these objectives, the specific, procedures to be followed in the accomplishment of these objectives, the specific procedures to be followed in the development of the budget, and the reports of budget information and actual operating data to be utilised. A budget manual should also give such additional information as the functions of the budget committee and budget director and their relationship to the other segments of the business in the development and administration of a budget.

Budget manuals have a number of advantages. They serve to define and clarify many matters. Numerous uncertainties may be discovered, and through clarification, a better understanding of the parts and of the whole may evolve. Periods of training may be reduced when oral instructions are supplemented with written procedures. Further, less embarrassment may occur if answers to questions can be obtained from a manual. Reliance on memory is eliminated when a procedure is reduced to writing. Furthermore, unless procedures have been reviewed and written down, it is likely that the turnover of employees and passage of time may contributes to the changing of procedures without the knowledge or consent of superiors.

Recognising that budget manuals very a great deal in form and nature, depending upon the size and nature of the company and the comprehensiveness of its budgetary procedure. Reiser states that in general the contents of the budget manual should include :

As a general proposition, the budget manual should be prepared in rough draft form by the budget department, supervised by the budget director. This draft should be circulated to all concerned for study and suggested changes. The final draft will be developed after proper consideration has been given to these remarks and attempts have been made to reconcile conflicting ideas. After preparation the manual should be distributed to all persons concerned with the development and use of the budget. The Controllship Foundation study by Sord and Welsch showed that approximately half of the companies in the survey which have budget programmes have a budget manual or its equivalent.

The chief value of a budget as a control device will be realized through effective use of reports. As pointed out by Lawrence, "Control is exercised through comparison of actual with budgetary figures to learn where, how, and why accomplishment is not equalling the achievement called for by the budget and to assist in determining whatever corrective measures should be taken." For this reason, reports should be kept simple, readable, understandable, and free of irrelevant information. They should always be designed with the users in mind. As pointed out by Reiser the reports are almost universally made by the controller's division, even where there is a separate budget directors' organization, because the necessary data must be obtained from the accounting records. In this connection, the budget director and the accounting staff in most companies are not directly responsible for cost control and cost reduction. The actions necessary to control and reduce costs must be taken by line executives and supervisors.

Business budgets should not be regarded as fixed and unchanging but rather as guides to assist management in the conduct of its operations. As such, it will be neces ary to revise budgets from time to time as conditions warrant. The National Association of Accountants found in one of its surveys, Research Series No. 18 that, "most of the companies interviewed revise their master budgets when important changes in volume or other conditions occur;" The study also indicated that various criteria were used in determining the frequency of revision, but that ".....most companies believe twelve-month forecasts of volume can be used

as the basis for over-all planning, but that from one to four months is as far ahead as estimates can be made with sufficient certainty for production scheduling and cost control purposes."

The production budget also permits the preparation of schedules showing cost of production, cost of sales, and cash requirements. The cost of production is essential in the computation of cost of sales, and important figure on the income statement. Furthermore it will be helpful in appraising the profitability of various products included in the line.

A production budget requires the formulation of certain policies out of which will accure a number of advantages :

Plans can be made to keep inventories at reasonable levels consistent with production arid sales requirements. This will tend to minimize obsolescence and mark-downs.

Raw materials requirements can be determined and sources of supply selected so as to get the best quality materials at the lowest price, shipped economically.

Attention is focused on producing goods according to a certain time schedule. This will aid in having goods available for customer at the right time in the right quantities.

Although considerable progress has been made in many phases of scientific management, instances of excessive inventories and shortages of materials and finished products continue to crop up. The sales volume of a firm is often greatly influenced by factors beyond the control of the company. Careful planning through a production budget will help management in its efforts to control inventories, to order in economical lot quantities, and to recruit, maintain, and utilize its labour force effectively.

Heckert and Willson list the following steps in budgeting production :

Determine the period of time to be used as a basis for the production budget. Ascertain what physical quantities should be produced in meet the sales budget and to provide properly balanced inventories. Determine when the goods should be produce. Determine where the goods should be produce. Determine the

manufacturing operations required by the production. Establish standards of production performance for use in measuring production efficiency.

Steps 6, 8, and 9 involve the use of standards which doubtless will aid in the control function of management, but it is possible to develop useful production budgets without the establishment of standards.

Sales executives are riot always cognitant of the fact that the sales programme can produce an unbalanced production schedule. The sales manager may emphasize volume and over look balance. In his desire for new products and their substitution for present products which the company has the equipment to produce, he may tend to emphasize the development and manufacture of products which will result in the underutilization of present equipment. Thus a study of productive capacity and its relation to the sales budget becomes a matter of considerable importance.

Such a study may also be helpful in locating bottle-necks. No plant can have a productive capacity in excess of that of the department or process which has the least capacity, unless the products of a particular department have a market in their own right, exclusive of the additional processing normally given. Overall capacity in a plant is determined by the least productive department, and the production output of other departments is dependent upon its manufacturing volume. When a sales budget calls for production in excess of the capacity of the least productive department, for preparation of the budgets should rest with the supervisors of the various segments of the business. For example, the sales forecast should be developed by the department charged with the responsibility for market studies. In many firms this may be the sales departments, and in others it may be a particular staff which specializes in the area. Regardless of the organisation plan, the sales manager should participate actively in the development of the sales budget, since he will be the individual primarily responsible for the execution of the sales plan. This general procedure is equally applicable to every other segment of the business and should be vigorously pursued.

Considerable frustration will be generated if an operating foreman has laid before him certain objectives to be accomplished when he is not in sympathy with the programme and has not had an opportunity to participate in its development. Furthermore it is unlikely that maximum results can be achieved without substantial understanding of the programme by those charged with its execution.

Budgets are frequently developed by one or two key individuals in the accounting section of the company. Sometimes these estimates are submitted to top management. Without the prior knowledge or approval of the operating executives in the sales, advertising, manufacturing, or purchasing departments. This is the worst type of budget procedure and quickly defeats the objectives of forward planning.

Woodhead emphasises the importance of the foreman's understanding the budget, standard, or objective used to measure department cost performance: "Don't let the budget remain a mystery guarded carefully among the leaders and chairs in the accounting department. In fact as our programme matures and the foreman becomes more and more familiar with its seriously affect delivery dates of such materials. The training time and supply of skilled workers can also be an important consideration in the development of a production budget. These factors must receive appropriate attention in the planning of production.

Relationship to other budgets : The production budget lays a foundation for the development of a comprehensive budgeting programme. It provides a basis for coordinating the sales and production programmes and facilitates the planning of capital additions and cash needs. It is a vital link in the preparation of financial statements on forecast basis and is indeed basic to factory budgeting ingeneral.

After the decision has been made on the physical quantities to be produced, the materials, labour, and manufacturing overhead requirements will be determined and the cost of production computed. When the sales and production budgets have been drawn

up the estimated amount of finished goods inventories will be known, and the cost of goods sold budget can be prepared.

Cost control is a function of management and must be exercised by and through people. None of the devices which have been developed to aid management in the control of operations will be effective unless it is utilized by people. The success of a control system depends on how the control devices are viewed by those who are expected to administer them and who have their performance measured by them.

The objective of a firm are such that their continued successful realization is dependent upon how well each member of the firm carries out his assigned task and upon the integration of these accomplishments toward the central objectives. Any control system has as it objective the increased efficiency of operations, which in turn implies increased productivity. The control system, then, is a means to an end. If the end result is not accomplished, the programme will be a failure.

Unless the control system includes means for providing information useful in controlling costs and provides an environment which facilitates the intelligent use of the information, a firm is losing the chief potential benefits of its system. The technical aspect of control entail the determination of what the costs should be, a comparison of actual results with planned results, and follow-up of the significant deviations by corrective action. These steps in the control process, however, must be administered by many different people and perhaps in many different ways. A lack of sympathetic understanding and support of the control system by those responsible for it will often render ineffective the most elaborate and technically sound control programmes. Copell points out that "attaining this objective of increased productivity is perhaps a human problem even more than a material or an engineering problem.

Attention to the human element an the control process is a rather new development in scientific management. It was only logical that attention should first be focused on the development of technical tools as an aid to management in controlling costs.

Development of these tools and an understanding of how they could be need to control operations almost necessarily had to precede their application to specific control problems. As firms became larger, more and more authority was delegated, and operations became more decentralized. The success of the control system came to depend to a greater extent upon the human feelings, attitude, and reactions generated by the control procedures and by the way in which they were used.

The coordination and utilization of human effort may be looked upon as the core problem of management. Hood reports that in the Ansul Chemical Company, the problem of cost reduction was diagnosed "as a problem of people's attitudes more than a problem of things. We determined that if we could motivate people change their attitudes, and create in them a concern for cost, the resulting effect would be cost reduction.

Thus it is important that cost-conscious attitudes be developed in top management, through departmental supervisors, and down to the people on the production line. These attitudes must become part of the individual's general work approach if costs are going to be successfully controlled at the point where they are incurred. They must have a spontaneity which is immediately exhibited when action is needed.

It is for these reasons that the study of human relations has become important in the administration of standards and controls. Cost-Consciousness can be developed only through the most painstaking study and through education. Glover and Roethlisberger point out in this connection :

The human problems involved in the installation, development, and management use of standards and control systems requires at least as much attention as do the engineering, accounting, statistical, analytical, and other technical problems. Indeed, the human misunderstanding and resistance which can be generated unwillingly through the use of these tools of management can often nullify the benefits expected to be gained from them.

Peiree speaking of one of the widely used instruments of control, writes: "Budgeting rests on principles which have more in common

with concepts of human relationship than with rules of accounting..."

The invisible and intangible esprit de corps of an organization doubtlessly influences the productivity of the workers and thus of the firm as a whole. This morale can be undermined if controls are improperly developed.

Inadequately explained, or incompletely presented to the people who will be charged on the one hand with the responsibility for carrying out the programme and on the other with having to explain their performance in terms of the control standard. In short, as stated by Dickey "cost controls is people, "and rigorous efforts must be made to solve not only the technical aspects of a control programme but also the human problems which are inherent in its administration.

Viteles summarizes the importance of worker motivation as follows :

The disregard of a worker is capacity to feel, think, and grow is a subtle but meaning danger in breaking down his social and spiritual morale. To increase productivity, heighten job satisfaction, and raise the level of employee morale, it is necessary to arouse the intelligent interest of the employee. It is urgent to enlist his feelings as well as his abilities in his work. The failure to do so will, at best, produce an ineffective worker. At worst, it will transform the worker into an industrial rebel.

In all human activity there are certain norms which condition responses to various stimuli. These norms which affect the thinking of each individual, exist in business activities as well as in other spheres of human endeavour. The problem of human relations in modern business is one which involves an understanding of these norms, coordinating productive effort within their framework to achieve certain objectives, and if necessary changing them in whole or in part through education.

Group standards usually reflect what should or should not be done in particular situations. Furthermore they exert strong control over the behaviour of individuals. Thus reactions to the orders, requests, and suggestions of the "boss" will to some degree be

influenced by the complex network of norms prevailing within the group to which the individual "belongs."

Basic to a solution of the general problem is a feeling that business executives should not be arbitrary in their actions with employees. Much evidence has been accumulated which points to the desirability, if indeed not the necessity, for making available to employees accurate information concerning such things as wage policy, grievance procedures, and company operations and finances. These are doubtlessly included in the norms which have been developed within some business groups. Such factors must be given appropriate recognition in the consideration of the group effort if maximum results are to be achieved.

The development of mutual respect by both administrator and employee for the individual and the role he fills is sometimes difficult but very important. Bosses must boss and subordinates must be subordinate, but these relationships will usually be more productive if they do hot result in attitudes of superiority and inferiority.

Reactions of people influence every sphere of human activity, including the area of cost control; therefore a human relations problem does exist, and it is very real, even though intangible. The first step in the implementation of a cost control programme should be the recognition that its success will depend in large part upon the reactions of those people who have primary responsibility for the incurrence of costs. Recognition of the fact must precede development of methods and ways by which the programme can be successfully administered.

In summarizing the Controllership Foundation study of management planning and control practices in 424 companies (Business Budgeting), Sord and Walsch listed "the more important characteristics of successful budgeting which clearly stand out in the composite picture." It seems significant that of the 20 characteristics nested, six were in the areas of human relations. These emphasized : "active support and participation in the budgetary programme from top management to the lowest level of the supervision," "adequate recognition of and emphasis on the

importance of enlightened human relations in generating a spirit of willing cooperation among persons associated in an enterprise," and "a system of budgeting designed and applied primarily to motivate people rather than to exert pressure on individuals."

One of the basic human problems in the administration of a control programme is the almost universal dislike for controls and resistance to change. Unfortunately the feeling seems to have developed on the part of many employees that a control system is used principally to exert pressure, which in turn may result in occupation and method changes and in some cases outright dismissals. Such actions on the part of management are indeed by-products of a control system, but it should be emphasized that the objective of the programme is to increase efficiency and to provide a sound basis for constructive planning for cost reduction.

Argyris states in a pilot study by the Controllership Foundation that both production supervisors and budget administrators found considerable fault with each other in the use of budgets.

Other evidence points to the existence of human opposition to controls, very often with genuine reason. Glover and Roethlisberger take and position: "Certainly, it is not just happenstance or the inbred defects of 'orneriness' of people down the line which accounts for the fact that words like 'standards,' 'budgets, and 'quotas' conjure up mental images of men in front of the boss producing alibis and defences, while the boss demands explanations and improvement."

Certain general policies can be formulated which, if pursued vigorously, can have a healthy effect on the use of budgets and standards as control devices. Not all these policies may be necessary in every situation; nevertheless their adoption can hardly fail to increase the effectiveness of a cost control or reduction programme.

An organization is unlikely to continue to operate at a profit even with the existence of high monetary rewards for employees, without the rather subtle and intangible factor of morale. A business cannot be regarded simply as an agency for making profits. It must be viewed in its total perspective, which certainly includes the people who serve it. The rewards for work must include not only

economic incentives but also those which stem' from participation, from doing a good job, from belonging. These are characteristics of morale, a necessary ingredient of efficient performance.

Results of high morale are difficult to measure in dollars and cents, yet the effects of good or poor morale are very real and contribute significantly to the success or failure of a cost control or cost reduction programme.

Dickey takes cognization of this fact when he says :

The way in which control devices are administered has an important influence on morale. This esprit de crops of the organization can be seriously undermined if the human problems involved in the building and administration of budgets and standard costs and other control devices are handled poorly. It appears that this has often happened.

Any action which is to be carried out successfully in a business firm must be supported vigorously by management. This is a factor which must be given high priority.. Mere lip service to a programme will not suffice.

It is management's important responsibility to plan and coordinate and efforts of its greatest assets -people. But this responsibility includes successful leadership, which in a very large measure is determined by example. Few things can be as frustrating to an employees as a dictum passed down by one whose attitude clearly shows his monchalance and lack of enthusiasm.

In establishing the bases to be used in measuring performance, whether it be sales quotas or cost allowances, attention should be directed to attainable goals. This does not mean goals which are necessarily easy to reach but rather those which can be attained with vigorous pursuit. It is characteristic of human behaviour to rebel against objectives impossible of attainment. It is equally true that many people readily accept challenges involving actions which they consider difficult, if it appears possible such action can be successfully completed. People naturally take great pride in accomplishing an especially difficult task.

One of the difficulties often encountered in obtaining the cooperation of employees in the administration of a budgetary programme is the apparent lack of understanding of the objectives and use of budgets. Few persons are likely to carry out an assigned task with ardor and zeal unless there is an appreciation of how the individual parts fit into the whole. Such an appreciation depends upon understanding.

Time should be made available in the form of individual or group conferences for explaining the objectives and uses of budgets and standard cost systems, how they will be administered, the extent of flexibility, and the way in which they will be used in appraising performance of employees. So important does Peiree view this factor that he writes :

It should be evident that the effect of control on people is commensurate with their training and conditioning for it. If they understand thoroughly the meaning and uses of control, they will view it in the light of common sense. They will either resent it nor be awed by it. They will turn it to the constructive use for which it is intended, and it will become an aid rather than an obstacle.

It is generally conceded that fundamental characteristic of a successful human relations programme in industry is the availability to employees of an opportunity to make suggestion regarding all phases of their work life. This is especially true regarding the development of budgets and standards, devices which they will have to administer and be measured by.

It may Be that no one in the organization knows as much about a particular job as the individual performing that job. It, therefore, seems advisable that those who will be charged with the responsibility for cost incurrence should be given ample opportunity to express their opinions. More enthusiastic support for these control devices can be expected if employees contribute to the establishment of the goals. As stated by Holman : "A man will go out of his way to make a plan work if he feels that it is his own creation rather than something that has been forced upon him. He can often find ways and means of effecting savings that the "front office" would never dream of."

Heiser emphasizes that :

One point on which there is fairly general agreement is that the most effective cost. One point on which there is fairly general agreement is that the most effective cost control under a budgetary system occurs where the foreman or supervisor has a voice in the determination of his expense budget schedules. It is common practice to secure beforehand his approval of the flexible expense schedules. This serves to ensure his confidence in the control system whereby his performance in the control of expenses is to be measured.

Sord and Welsch, in the Controllship, Foundation study of planning and budgeting in 424 companies (Business Budgeting), refer a number of times to the importance of participation, which they describe as "one of the fundamentals of good human relations".

Executives interviewed repeatedly stressed the importance of, and attention given to, active participation in setting standards by those responsible for performance. One of the principal reasons given is that such participation helps to promote understanding of the standards and of how they were set. It also helps to gain acceptance of such standards by the people who must achieve them. A third reason for desiring such participation is that it ends to create a clearer understanding of responsibilities for performance. A fourth reason cited is that the practice is conducive to better relations between line and staff personnel.

Good communication is an important factor in human relations. This is discussed in this section under "Reporting."

Pressure with Budgets : Sometimes budgets and standard costs have been "sold" by emphasizing their constructive uses, but some where along the line they often have seemed to become almost wholly pressure instruments. To the extent that this occurs, it will have an unhealthy effect on the attitudes toward the control instrument.

Measurement of Production Accounting :

The measurement of production demands two essentials. First, the compiling of performance data based on principles which were

used to construct the Budget, and the basis of measurement. A fundamental principle of Management Control is that "the person to be measured must never be responsible for controlling the basis of measurement, or for making the measurement". This principal is cardinal rule. Secondly, the basis of measuring the operations and performance must be constant fixed on a prescribed formula.

The first condition is amply covered by the setting of the Budget. The total and normal capacities under each cost centres are established. Now, it may be argued that the cost centres do not represent a sufficiently detailed breakdown for the measurement of production. It is an essential rule that production classification is the dividing line for setting up the various cost centres. If these are in considerable detail, managements are advised to examine the effect on the various cost centres, cost rates, decide upon the purpose or function of productive capacity of each cost centre, and satisfy themselves that the real controlling influence of production has been recognised. Frequently, management will discover that it has been too fastidious in its requirements and that no real purpose is served by a fine division.

Measurement of Production Accounting :

1. ***Activity :*** The expression standard hours produced to normal hours (D) as a percentage; i.e., B/D×100. This percentage depicts the utilisation of the set normal productive facilities required to meet the product programme.

2. ***Producive Efficiency :*** The measurement of the output received against the performacne attained, i.e., the expression of the percentage of allowed standard hours against the standard hours produced. The difference represents the loss of output due to faults which are not attributable to the performance of labour = C/B×100. The causes of these losses are analysed, and reported upon by the labour extra allowance analysis.

3. ***Labour Efficiency :*** This measure is achieved by the expression of 'Allowed standard hours' as a percentage performance, i.e., 133.33%, indicates increased or decreased labour efficiency.

These factors together are the measure of productivity. Productivity measurement is a function of physical performance and utilisation.

How to Measure Factoral and Overall Productivity?

1. Labour Productivity :

   (a) In terms of hours :

   (i) Productivity (i.e., efficiency) $= \frac{\text{Production in Std. hours}}{\text{Possible man hours}}$

   (ii) Lost time percentage $= \frac{\text{Man hours lost}}{\text{Possible man hours}} \times 100$

   (b) In terms of money : By any one of these ratio :

   $\frac{\text{Sales value of output}}{\text{Number of worker}}$ $\qquad$ $\frac{\text{Direct wages}}{\text{Sales value}}$

   or $\frac{\text{Sales value of output}}{\text{Number of worker}}$ $\qquad$ or $\qquad$ $\frac{\text{Direct wages}}{\text{Sales value}}$

2. Material and Purchases Effeciency :

   (a) Material Productivity : Any of the ratio :

   $\frac{\text{Material cost}}{\text{No. of units produced}}$ or $\frac{\text{Direct material cost}}{\text{Production cost}}$

   $\frac{\text{Indirect material cost}}{\text{Direct material cost}}$ or $\frac{\text{Direct material cost}}{\text{Sales}}$

   $\frac{\text{Direct material consumed}}{\text{Number of employees}}$ or

   $\frac{\text{Rejected or waste or scrap}}{\text{Total material consumed}}$ or

   (b) Purchase Effeciency :

   By the following ratio :

   $\frac{\text{Actual purchase price}}{\text{Budgeted purchase price}}$ or $\frac{\text{Purchases in current period}}{\text{Purchases in previous period}}$

or $\frac{\text{Purchases return}}{\text{Total purchases}}$ or $\frac{\text{Purchases cost}}{\text{Total purchases}}$

3. Machine Productivity :

(i) Machine utilisation = $\frac{\text{Output in Std. hours}}{\text{Planned machine hours}}$

(ii) Activity percentage = $\frac{\text{Actual machine hours}}{\text{Planned machine hours}} \times 100$

(iii) Lost time percentage = $\frac{\text{Machine hours lost}}{\text{Planned machine hours}} \times 100$

(iv) Machine effectiveness = $\frac{\text{Net machine running time + setting - up time}}{\text{Planned machine hours}}$

4. Productivity of Power and Services :

(i) $\frac{\text{House power utilised}}{\text{No. of hours worked}}$

(ii) $\frac{\text{Maintenance cost}}{\text{No. of hours worked}}$

5. Selling and Distribution and Administration Productivity

$$\frac{\text{Selling, distribution or administrative costs}}{\text{Sales}}$$

6. Overall Productivity :

Overall productivity may be measured by Return on Capital Employed, i.e., $\frac{\text{Profit}}{\text{Capital employed}}$

or $\frac{\text{Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total assets}}$ or $\frac{\text{Cost of output}}{\text{Cost of input}}$

Bhat in his Cost Accounting says that although the concept of productivity is easily understood, it is very difficult to measure it of different approaches associated with it. Some of them are as follows:

1. ***Total or Overall Productivity :*** Though it is relatively easy to measurer total productivity, this measure will be of less favour because an increase in factorial productivity may be counter-balanced by another and the real picture cannot be obtained.

2. ***Interdependence of Factorial Productivities :*** Productivity of one factor may affect the productivity of another factor, e.g., material productivity is affected by handling defective tools and machincery and idle time, lack of supervision and inefficient management.

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14

VALUE ADDED ACCOUNTING

Introduction :

VAT is a multi-stage indirect tax, charged on all stage indirect tax, charged on all stages of production and distribution of a good. VAT is collected by tax authority in instalments on the basis of value added at each state of production and distribution. Since, an input is taxed only once, VAT avoids the cascading effect which is the important demerit of a generalised system of excise or sales tax. VAT discourages vertical integration of industries to the advantage of small scale sector. Each seller in the chain collects the VAT from the purchaser at the time of sale, deducts from this among to VAT himself has paid on his purchases, and remits the balance to the tax department. The net effect of offsetting purchases and sales is to impose the tax at each stage of production on the total amount of wages, interest, rents, profits and another factors of production not furnished by suppliers subject to the tax at the previous stage of production-hence it is a tax on "value added to good or service."

Since, the cumulative effect of input taxation is absent in VAT system of tax the impact of this tax on cost of productions or service cost escalations, VAT system of tax promotes competitiveness of domestic industries in the world market and thus, generates favourable effects on exports. VAT in its comprehensive form also has the advantage of being natural as between different industries,

techniques of production and business firms. It, therefore, does not distort pattern of modern production and consumption.

A comprehensive form of VAT covers the value added at all the three levels that is manufacturing, wholesaling and retailing. The concept of VAT is developed particularly in West European countries where they have a common market of all Western Europe. In present time this form of VAT is predominant in the fiscal system of many developed and developing countries. VAT is levied on both goods and services. VAT is not a new kind of tax but its is new because the administration of tax in VAT is different form. This new incorporation of VAT gives credit for earlier taxes paid on sale items and also helps in breaking the vicsious circle of high and multi-tax rates which lead the evasion of tax there by compelling stiffer tax rates to make up for the revenue loss of government. This is different from sales tax at various levels starting from manufacture to the retail level.

Types of VAT :

The VAT can be levied in following three ways. These ways are derived from different concepts of measurement of income consisting of :

(a) Consumption type VAT

(b) Gross product type VAT and

(c) Net Income type VAT.

1. VAT can be levied on sale of goods and services put to final consumption. This will called consumption type of VAT. Its special feature is that it exempts capital since inventory accumulations and capital outlays are excluded while estimating the tax-base in VAT system.
2. The VAT may also be gross product type in which situation no capital outlay; depreciation allowance etc. will be deductible from the base.
3. The VAT may be net income type where depreciation is deductible for the purpose of estimation of base.

In other words, VAT has following three important methods.

(a) Gross product method,

(b) Income method, and

(c) Consumption method

(a) Gross Product Method :

The gross product method allows deduction for all purchases of raw-materials and components but no deduction is given for business inputs. That is, capital goods such as depreciation on plant and machinery are not deductible from the tax base in the coming years. Thus, the economic base of gross product method is equivalent to Gross National Product. In this method of VAT, capital goods carry a heavier tax burden as hey are taxed twice. Modernisation and upgradation of plant and machinery is delayed due to this duel tax treatment.

In short, when the credit of paid tax on capital goods is not given, is called Gross product type VAT. Only in China this type of VAT is in practice. According to MODVAT provision in India, this form of VAT was in practice before 1993-94.

(b) Income Method :

Income method of VAT, unlike the gross product method deductions are given for purchases of raw materials and components as well as depreciation on fixed assets. It gives incentive to classify purchases as current expenditure to claim set-off net investment i.e. gross investment minus depreciation is taxed and, thus, the economic base of income method is equivalent to net national product. In practice, thee are big difficulties connected with specification of any method of measuring depreciation, which basically depend on the rate of inflation-and the life of a fixed asset.

In short, when the credit of paid tax on capital goods is not given directly but it is given as the same as depreciation installment of capital goods in income tax. Thus, in this type of VAT the credit is given on capital goods.

(c) Consumption Method :

Consumption method allows deduction for all business purchase including fixed assets. That is gross investment, deducted in calculation of value added. The economic base of tax, therefore, is equivalent to total private consumption. It neither distinguishes

between capital and current expenditures-nor specifies the life of fixed assets or depreciation allowance for different fixed assets. This form is neutral between different methods of production, there would be no effect on tax liability due to the methods of productions i.e. substituting capital for labour or vice-versa. The tax is also neutral between the decision to save or consume.

In short, when there is a provision that whole credit of paid tax on capital goods is given in the year in which purchase has been made it is called consumption type of VAT. At present, this type of VAT is in practice in all the countries except china.

Among the above three methods of VAT methods, consumption method is widely used in developing countries. Most European countries and other countries have adopted this method. The reason for preference of this method is that it does not affect decision regarding investment because the tax on capital goods is also set-off against VAT liability. The tax is neutral in respect of techniques of production i.e. labour or capital-intensive. The consumption method is more in harmony with the destination principle.

Computation of VAT:

Under VAT system, the value added at each stage of production and distribution process is taxed. The total of value added at the all stages of production and distribution process is equal to the total value of an article. The VAT on an article amounts to a tax on just the total value of that article, there are three methods to compute the liabilities of VAT. The amount of VAT calculated by these methods will be same. These methods are as follows :

1. Addition or Income Aapproach Method
2. Sustraction or Product Approach Method
3. Tax-credit or Invoice Method

1. Additional or Income Approach Method : This method is based on the value added which can be estimated by adding value of all the elements of value added i.e.: wage, profit, rent, and interest. This method is known as additional method or income approach. This is same as income method of calculating national income.

Example :

Particulars	Manufacturer (Rs.)	Wholesaler (Rs.)	Distributor/ Retailer (Rs.)	Total (Rs.)
Material	800	200	--	1000
Wages	200	300	100	600
Expenses	250	150	50	450
Profit	150	200	50	2450
VAT (say) @10%	140	85	20	245

2. ***Subtraction Product Approach Method :*** In this method value added is find out by means of difference between output and input (i.e., : T = t (output – input). This is also known as product approach and has following sub methods :

1. Direct subtraction method,
2. Intermediate subtraction method, and
3. Indirect subtraction method.

Direct subtraction method is equal to business transfer tax whereby tax is levied on the difference between the total tax-exclusive value of sales and total tax exclusive value of purchases. Intermediate subtraction method is based on deduction of the total tax-inclusive value of sales and taxing the difference between them.

Example :

Particulars	Manufacturer (Rs.)	Wholesaler (Rs.)	Distributor/ Retailer (Rs.)	Total (Rs.)
Sales	1400	2250	2450	6100
Purchase	-	1400	2250	3650
Value add	1400	850	200	2450
VAT (say) @10%	140	85	20	245

3. Tax-Credit or Invoice Method :

This method shows deduction of tax on inputs from tax on sales for each period. This method is also known as tax-credit method or invoice method. In practice, most developing countries use this method and employ net consumption VAT.

Under this method of the computation of VAT, first tax will be computed on entire sales of the dealer then a credit is given regarding tax paid by the proceeding dealer. The main advantage of the tax credit method over the subtraction method is that it does not lose revenue ifa link in the chain is broken by evasion or exemption. In the above example VAT will be computed by this method.

Example :

Particulars	Manufacturer (Rs.)	Wholesaler (Rs.)	Distributor/ Retailer (Rs.)	Total (Rs.)
Sales	1400	2250	2450	6100
VAT@10%	140	225	245	610
Credit allowed	-	140	225	365
VAT (say) @10%	140	85	20	245

Although, all the above methods of calculating tax are same these are not likely to yield the same revenue when tax rates vary according to goods. That is, the rates are different from inputs and that for outputs.

The invoice method is widely used in developing countries because of its inherent advantages in calculating tax liability. First, it makes cross checking of tax paid at earlier stages more as enable as dealers are required to show the amount of tax on invoices. Second, tax burden being independent upon the tax rate at the final stage, dealers at intermediate stages do not have any incentive to seek special treatment in tax-rate and finally, it facilitates broader tax adjustments if exports are zero-rated, it is very easily done with this method.

To understand the concept of VAT, let us take an illustration. Suppose there are five dealers engaged in the process from production to distribution of an article 'X'-A to be prime producer, B to be manufacturer, C to be distributor, D to be retailer and E to be customer. A the prime produce sales his produce at Rs. 100 to B the manufacturer and pays a tax Rs. 10 say @ 10%. B the manufacturer, after adding wages, salaries, expenses and profit, sales it to C the distributor at Rs. 200. Here the VAT paid by B will be Rs. 10 only as A the prime producer has already paid a tax of Rs. 10. Therefore, the

liability of B is Rs. 10 (Rs. 20 minus Rs. 10). Now C the distributor sales it to D the retailer Rs. 300. The liability of C will also be Rs. 10 only (Rs. 30 – Rs. 20). If D retailer sales it to E the customer Rs. 400, his liability will be Rs. 10 (Rs. 40 – Rs. 20). VAT will be paid by the above six dealers is given in below Table.

VAT Paid by the dealers :

Example :

Dealers	Purchasing Price (Rs.)	Selling Price (Rs.)	Value addition (Rs.)	Vat @ 10% (Rs.)
A (Prime Producer)	-	100	100	10
B (Manufacturer)	100+10	220	100	10
C (Distributor)	200+20	330	100	10
D (Retailer)	300+30	440	100	10
E (Customer)	400+40	-	-	-

Thus, in the above Table transactions there will be total collection of VAT of Rs. 40. All the dealers whether egged in the manufacturing or trading have to pay VAT.

Accounting the point of view, there are two types of expenses of the above dealers – Revenue expenses and Capital expenses.

At the time of calculation of VAT, Capital expenses will be divided into four categories.

(a) Gross Product Type Variant : Under this system of VAT the additions will be computed by deducting the existing cost including the capital expenditure but depreciation will not be allowed as deduction in other words tax is levied on both the consumption and capital goods. Thus there will be more collection of tax under this type of VAT variant.

(b) Income Type Variant : Under this type Variant – Under this type of variant the depreciation will be allowed to deduct with the purchases.

(c) Consumption Type Variant : In this variant the Capital expenses will be allowed as deduction with the existing cost.

(d) Wage Type Variant : Under the wages type variant, the previous cost (purchases) along with capital expenses, other

expenses and profit will be allowed as deduction to find out the addition. Thus, in this variant only wages will be subject to VAT.

Reasons for Increasing Popularity of VAT System of Tax :

There are many arguments for the adoption of VAT by a large number of developing countries and the consequent growing popularity. There are :

1. Simple tax structure system.
2. Minimum tax-evasion.
3. Neutrality of tax with respect to behaviour of consumer and of producer.
4. Efficient resource allocation.
5. No tax on inputs of production.

Simple Tax Structure System :

VAT helps in simplifying indirect tax system of every developing countries. In every developing countries the pre-VAT goods tax systems are found to be very complicated. For developing in Korea, there are different kinds of indirect taxes before the adoption of VAT. Ten indirect taxes that were replaced by VAT had, among them 57 different tax rate brackets.

The gross business receipts tax was used in the Republic of China which was a multi-state turnover tax. VAT replaced it. However, VAT also replaced the stamp duty tax and goods taxes on some products such as paper, plastic, leather and steel bare. Infect, all the developing countries that have gone in for VAT had a actual need for simplifying their tax systems.

Minimum Tax-Evasion :

VAT helps in minimising tax evasion. The existing systems of single-point or cascade-type sales tax had large among of evasion. Researches related to evasion of sales tax in India, for example show that tax evasion ranges between 5 and 80 per cent of the tax base depending upon type of goods. As against the system of administration of sales tax, VAT requires that tax invoices must be issued by all the dealers. The subsequent dealer would maintain

their invoices in order to benefit from the tax deduction. This would enable the tax authority to cross check the dealer transactions between tax payers, consequently, reducing the prosperity to evade tax. In fact, the requirement of maintaining the vouchers (invoices) works as self-policing the evasion of tax.

Neutrality of Tax :

Neutrality of tax with respect to behaviour of consumer and of producer is on of the causes of growing of VAT. In international trade, VAT enhances tax neutrality. In this system neither relative prices nor production techniques are affected.

Efficient Resource Allocation :

VAT has a novel feature of tax transparency. That is, the total burden of tax on a articular commodity is clearly seen from the transaction. Hence, economic analysis of the structure is convenient. Throughout, VAT an efficient resource allocation is possible.

No Tax on Inputs of Production :

In VAT system we see no tax on inputs. Under the sales tax system it is difficult to estimate the exact amount of refund for export. In most cases the statistical evidence suggests that the tax on inputs and raw materials or on capital goods is under compensated.

Importance of VAT :

The growing popularity of VAT could be further studied by comparing the characteristics of VAT with those of retail sales tax and business turnover tax.

VAT being a multi-stage levy, is collected on sales at all stages of production and distribution process. It fulfils the criteria of neutrality because it is levied only on value added i.e. on the difference between sales and purchases at each stage. It allows registered firms to take credit for the tax-paid on purchases from registered suppliers against the tax payable on sales. Thus , the cascading phenomenon does not take place and the same value is never taxed twice. The method of giving credit is usually employed through the invoices issued by the dealers. As each seller issues an invoice giving the amount of VAT paid, the invoice serves as a documentary proof for the credit claimed by registered buyers.

Retail Sales Tax :

In contrast, Retail Sales Tax (RST) levied by the State Governments is a single-stage tax levied at the time of last sale by retailer to consumer. That is the tax is levied when the commodity passes into the hands of the final user or consumer. Under RST the exemption certificate of the next dealer performs the role that is accomplished by the invoice under VAT. However, the system of administration of VAT does provide some self policing mechanism, which is crucial to smooth tax management, especially in developing countries. This has given a clear administrative advantage to VAT over RST.

Unlike RST and similar to VAT, business turn over tax (BTT) in a multi-stage tax levied on the value added at each stage in the production distribution process. Under BTT instead of as certaining net VAT by first taxing sales and then subtracting tax on purchases from the gross VAT the system of ascertaining value added is direct. That is we deduct purchase value from sales value and the tax rate if applied to tax value added portion of the transactions. The tax amount under BTT would however, be equal to the tax under VAT.

Thus, the VAT has earned the distinction of being the forerunner among all the commodity taxes and has spread like a prairie fire throughout the world.

Advantages of VAT :

Advantages of VAT over other forms of sales tax can be studied in following pages :

1. It has flexibility to generate large and buoyant reverses.
2. It can be designed to be neutral.
3. It eliminates cascading and hence no tax induced, distortion in favour or against vertical integration.
4. It tends to decrease incentive for evasion, as tax does not concentrate the impact on any given level.
5. It's tax burden is transparent.
6. It's zero rating of tax on exports is easy.
7. In VAT there is no less of revenue due to large base. Low tax values could have the same revenue.

Economic Effects of VAT :

VAT has direct as well as indirect effects on several economic variables. Important aspects of economic effects are :

1. Effects on prices.
2. Effects on consumer's welfare via incidence and equity.
3. Effects on production process on account of neutrality & efficiency.
4. Effects on economic growth via saving and investment, and conformity with optimal tax theory.

Effects of VAT are felt all over the economy. Because, the tax influences several macro economic variables such as savings, investment, employment, distribution prices, and efficiency of resources. VAT directly affects some of these variables whereas the effects on others is indirect.

Price Effects of VAT :

The effect of VAT on prices is significant and direct. The effect, however, depends upon whether VAT is a new levy or simply a replacement for the existing taxes to recover the lose revenue from other taxes reduced or replaced by VAT.

In general VAT causes increase in price of commodities depending upon the elasticity of demand and supply of the commodity concerned. Normally it is fully shifted forward because traders would to maintain their level of profit by shifting VAT ahead.

The shifting would however, depends upon the supply and demand condition of the commodity in question. The degree of shifting would cause increase in prices. Hence, VAT would be inflationary depend not only on the possible off setting changes in other taxes and on accommodating money supply but also on the reaction of wages, transfer payments, liquidity and psychological effects.

Musgrave have suggested to study the following five alternative policy settings:

1. Wages flexible monetary policy permissive,
2. Wages downward rigid monetary policy permissive,

3. Wages flexible monetary policy stabilises product price level,
4. Wages downward rigid monetary policy stabilises product price,
5. Wages flexible monetary policy stabilises factor price level.

According to Musgrave, the second alternative might be the most realistics one. Hence, it is expected that "an absolute price level increase is the most likely result".

Distributional Effects of VAT :

These effects refer to incidence and equity aspects of the tax. That is, the issue of distribution a effects is who really bears the burden of the tax? In the case of VAT, this depends upon various possibilities of shifting, avoidance and evasion of tax, as well as on the composition of the users of a commodity. The aspects of avoidance and evasion are related both to the structure as well as to the administration of the tax. VAT in comparison to other reforms of sales tax stands the test proper administration because it involves a self policing mechanism. The budget of a commodity would take care to obtain an invoice so that he could claim credit for the tax due to the seller. Hence, VAT better takes care of the equity aspects related to awardance and evasion.

The distributional effect, however, depends upon the possibility of shifting of VAT. Normally, profit maximizing firms will sift all commodity taxes forward as these taxes affect marginal costs. But firms that have monopoly in the market for a factor or input shift VAT backward.

The progressivity or regressivity of VAT depends upon various factors such as the number of exemptions and zero rating and on other compensating factors. VAT would be proportionable tax if related the consumption and some what regressive when related to income the result of distributional effects indicate that VAT is not a useful instrument infinite regressivity.

Neutrality and Efficiency :

The concept of neutrality is concerned with the extent to which the tax avoids distoring the working of market mechanism. It is

important that VAT should not affect those decisions if it is to be natural. That is why one of the important objectives of tax policy os tio attempt neutrality with respect to the economic behaviour of producers as well as consumers.

This is achieved in production when VAT does not include firms to change their forms and methods of carrying on business. It is obtained in consumption when VAT does not induce consumers to change their pre-tax choice between taxed and untaxed commodities. This is distorted, if the tax rate differs from one category of goods to another.

VAT is designed to be neutral between capital and labour or investment and consumption. Even in respect of foreign trade, the zero rating keep VAT neutrals.

Effects on Growth :

One of the important objectives of tax policy in a developing economy is to increase the rate of savings and investment to achieve a higher rate of growth. A rational tax structure proves helpful in increasing the rate of savings in the economy. VAT can be viewed as a tax on articles of mass consumption to met the costs of common benefits. VAT does not have any adverse effects on investment as capital goods and depreciation on capital are exempted under VAT. Thus, VAT is an ideal tax to help & achieve higher additional resources incremental saving ratio and thereby to attain higher rate or growth in the economy.

Optimal Taxation System and VAT :

VAT being a system of commodity taxation designed to avoid tax on inputs being used for the production process, it is eminetly suitable for adoption of optimal tax structure. Once VAT is chosen as the system of commodity taxation the rates of tax on commodities have to be chosen in accordance with the implications of optimal tax Theory.

Single and Multiple VAT Taxes :

Value Added Taxes can also be classified in following:

Single Value Added Tax System :

In single VAT system taxes are levied only on one object. The Physiocrafts had supported the single tax system in France in

eighteenth century. There is only one tax which generate the source of public revenue. It can obtain adequate revenue and avoid unfairness in the distribution of the burden of taxation by means of graduation; differentiation and other techniques.

Demerits of Single Value Added Tax :

1. Sufficient revenue cannot be obtain to meet the requirements of large public expenditure.
2. It may mean an unsatisfactory distribution of the burden of taxation among public.

Multiple Value Added Tax System :

A multiple VAT means a tax system in which taxes are levied on many items. It tries to forge ahead simultaneously along the paths of growth equitable distribution of income and wealth, economic stabilisation etc. As no single VAT can help out economy on all fronts, multiple VAT system is preferable to single tax system. Levy of multiple VAT would some other taxes enable is the more equitable redistribution of income and wealth.

Advantages of Multiple Value Added Tax :

1. It increases the income of the government.
2. It is more flexible than the single tax method.
3. It would help in the more equitable redistribution of income and wealth among public.

However, multiplicity of too many VAT would result a large cost of collection. It is, therefore, desirable to rely on a few taxes which would result in large revenue to the government.

Taxable Capacity of VAT :

Value Added Taxable capacity is the ability of people to pay taxes without adversely affecting or worsening their standard of living and the efficiency. However, economists largely differ in their opinions about the concept of taxable capacity. According to the Taxation Enquiry Commission of India, "taxable capacity of different sections of the society may be the degree of taxation beyond which productive effort and efficiency as a whole begin to suffer".

According to Findlay Shriras, "taxable capacity is the limit of squeezability of society. It is the total surplus of production over the minimum consumption needed to produce that level of production, the standard of living remaining unchanged". The term "taxable capacity" has an important place in the arena of taxation. It has immense practical significance for the government of every country. For, the government must always keep in mind the taxable capacity of the people while imposing new taxes or increasing the rates of the existing taxes.

Taxable capacity is normally used in two senses (a) Absolute Taxation Capacity and (b) Relative Taxable Capacity.

Absolute taxable capacity refers to the maximum tax paying capacity the economy or country as a whole or a region or an industry or a group of manuals. Sir Stamp has defined absolute taxable capacity as the Taxed products minus the among required to maintain the population at sales and level.

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15

BUDGETARY CONTROL

Budgetary control consists essentially of projecting company operations into the future and then using that projection to manage the operations that actually develop. The control aspect depends primarily upon :

1. Frequent comparison of actual with budgeted performance.
2. Analyses to see what accounts for them.
3. Adjustment of the budget for the variances which management judges cannot or should not be changed.

Budgetary control even in its rudimentary form has procedures in common with productivity accounting. There is comparison of current performance with a base and some effort to isolate thedirect effect of price change in order to study the non-price variatiion. More sophisticated systems provide for a comprison of actual with standard as well as budgeted performance; and for extensive analysis of variance from both. It is usual with this type of budgetary control to calculate an 'efficiency' variance or the difference between standard and actual performance after eliminating price and volume variance.

Functions of Management: All business enterprises are established and operated for the purpose of attaining certain basic objectives which will not generally be realized without effective direction. Success of a firm seldom occurs by accident; rather, it

usually results from careful attention to all phases of operations by those who are charged with the responsibility for managing the enterprise.

With the increasing size and complexity of industrial organizations, the need for scientific management has become more evident. It should be added, however, that, scientific management, as Welsch points out, "does not involve a formalistic, highly complicated system of business management," but does include "the processes of investigation, analysis, and decision."

Similarly, Davis states that, "managerial functions involve the work of planning, organizing, and controlling the activities of others in accomplishing the organization's objectives." Thus, these broadly conceived functions include formulation of plans, coordination of activities dictated by the plans, and control of operations. All these are complex and interrelated. Furthermore they are made increasingly difficult by changing economic conditions, government regulations, customer needs, and technological advances.

For these reasons, management should know where it intends to go (objectives), the requirements for getting there (plans), means by which it may meet these requirements (coordination through organization), and in addition provide for constant vigilance over execution of the plans (control). To carry out these functions effectively, management. must formalize its plans in such a way that a basis for coordination and a means for appraising the actual results of operations are provided.

Management must therefore have at its disposal various tools, techniques, and procedures which provide information useful in decision-making. Comprehensive budgeting is one of these tools and is generally recognized as most useful for planning, coordinating, and controlling enterprise activities.

Numerous definitions of a budget have been formulated, but common to all is the essential idea that a budget is a written plan covering projected activities of a firm for a definite time period. A team of 34 Europeans experts from eleven different countries, who made a survey of how accounting was performed in the United States has defined the budget as:

A plan of operation expressed in monetary terms; it consequently includes a forecast of income and expenditure and of receipts and costs for a specific period, usually 12 months. This notion of a plan of operation is most important; and it is here that this form of budget differs markedly from budgets, of public services, the main purpose of which is. to fix allocations which spending departments must not exceed.

A budget is a plan for coordinating the various operations of a business expressed in financial terms.

Budgeting is, basically, only a plan of operation, and even the most rudimentary business effort has to be motivated by some type of plan.

Hesier defines a budget as the over-all statement in financial terms of a comprehensive plan of operations and actions. A budget can function as a device not only for planning and coordination, but also for control, according to Heiser, if it is adequately prepared and fully used. It is Heiser's opinion that the common practice of applying the term "budget" to mere segments of the comprehensive, master plan is unfortunate because it leads to confused thinking. He prefers to use the term budget schedules for the segments. Thus he refers to a listing of budgeted sales as a schedule of budgeted sales rather than as a sales budget.

A comprehensive budget includes the separate plans made for the various segments of the enterprise. Through its development, the several division planners synthesized so that the end result is a unified plan for the firm as a whole. The comprehensive budget provides estimates of revenues, costs, and expenses for the time period, including plans for such other items as cash requirements, inventory levels, and capital additions.

In view of its nature, a budget is related to both accounting and management. It deals with information which must be based, at least in part, on data derived from accounting records and which must be reported concurrently with results of operations for their full potential to be realized. Furthermore the budget is closely associated with all phases of operations which are directed by management and which must be implemented through the organization.

Accounting provides information to management as well as to many groups external to the firm, such as stockholders, governmental agencies, potential investors, and creditors. Budgets, however, are tools designed principally for internal use and therefore should be developed accordingly. They can be justified only if they serve management. Welsch writes:

Dynamic budgeting is the principal tool of planning and control offered to management by the accounting function; its usefulness increases with the complexity of the organization. It also is the accountant's open door to the inner councils of top management. This mutual enrichment of function between management and accounting is a vital feature in the successful life of progressive enterprises, but its full potential frequently is hindered by the gap between the machines of budgeting and their practical application to the problems of modern management.

In emphasizing the usefulness of budgets, it must be kept in mind that budgets are an aid to managerial judgement, not a substitute for it. As Heiser (Budgeting principles and practice) states: "A budget is not designed to reduce the managerial function to a formula. It is a managerial tool."

For budgets to be effective,, management should be conscious of the benefits to be derived therefrom. Further more it should participate actively in budget development to (1) impress upon everyone concerned the importance of the project; and (2) ensure that the budgets are constructed in such a way that they will be useful in carrying out the functions of management.

Budgets are instruments designed to aid management in planning, coordinating, and controlling operations. According to Heiser the budget of the company serve three purposes-First, it provides top management with a summarized picture of the results to be expected from the proposed plan of operations. This aids the management in determining whether the plan is satisfactory. Second, following approval, it serves as a guide to executives and departmental heads responsible for individual segments of the operations. Third, it serves to measure performance, since budget deviations reflect either the organization's failure to achieve the planned standards of performance or its ability to better them.

Heckert and Wilson detail by functional areas the reasons for budgeting, as follows:

Even though different firms may stress some of these objectives more than others, substantial benefits may still accrue through the use of budgets. All the reasons for budgeting are important, and if those which are emphasized in a particular firm are realized, the effort involved will have been worth while. For example, budgets may occasionally be used primarily for multiple unit coordination. If this task can be more easily accomplished through budgets, then their use in this connection can be justified, even though they may not be utilized for other purposes. In other instances, budgets may be used principally as a control device for signaling areas of operations which may need further investigation and perhaps corrective action. It should be recognized, however, that the full potential of budgeting cannot be realized unless it is extended into all areas of the firm's activities and used to assist management in its functions of planning, coordinating, and controlling operations.

In some way, all successful firms must plan, and a budget will be helpful in this phase of management activity. By requiring plans to be put down in writing, what has perhaps formerly been a vague idea must now be thought through carefully. In so doing, gaps in thinking may be disclosed and corrected. Furthermore, it may be found that unwritten plans of the several segments do not fit together and therefore must be adjusted.

The participation of all members of management in building the budget may perhaps underscore the central objective and give a clearer insight into how each division fits into the over-all budget plan. This kind of knowledge and participation gives a sense of being part of an effort greater than the one with which each is intimately associated. They may also contribute to a better understanding of the problems of other departments. Out of this may emerge a team effort, the results of which may be difficult to measure but nevertheless be quite real. Plans which are drawn carefully for each segment of the business, synthesized properly, and developed with and agreed to by all members of management will usually result in a greater effort to realize them than will

haphazard plans based on incomplete and perhaps faulty data poorly communicated.

The extent to which a firm uses its resources effectively will in a large measure determine its success. The greatest resource available to the enterprise is human effort. But it must be directed to specific objectives; human effort must be coordinated. This is one of the most difficult jobs with which management is confronted. It is therefore important that plans be developed to provide a basis for systematic direction of the activities. Coordination of efforts requires communication of objectives and instructions, and a budget is one very important means of communication.

The great challenge to the modern executive is the control of day-to-day operations. Many companies have found that this challenge cannot be successfully met by informal methods which emphasize the experience and abilities of key executives who have had a good average in making correct decisions based on incomplete information. Methods and devices for aiding management in its control function, therefore, should be constantly studied and developed. Plan may have little meaning if they do not provide guides to management action.

A basic ingredient of control is an advance estimate of what an operation, or *a.* product, or a special project should cost, since control implies the comparison of an actual cost with an estimate of what it should have cost, followed by appropriate corrective action. A budget, when carefully developed in the light of all pertinent considerations and continually revised in terms of changing circumstances, provides management with estimates of what operations processes, and products should cost. The development of a budget, when coupled with a sound organization, provides a strong basis for control.

It should be recognized, however, that control is exercised by people and that the more preparation of a budget will not ensure its effectiveness. For this reason, budgets should be prepared in a form and in terms understandable by these who are expected to have their performance measured by it.

Of considerable importance is the fact that budgets are adaptable to all kinds and sizes of business. Undoubtedly, the more

complex the organization, the more necessary becomes the use of budgets. On the other hand, they have much to offer to the small manufacturer, since he also must have yardsticks by which to measure the performance of every phase of his business activity. Very small producers will probably find that informal estimates will suffice, but the efficiency of their operations may be improved through systematic plans, though such plans may not be determined by the most refined methods.

In summarizing their controllership foundation study of 424 companies, Sord and Welsch (Business Budgeting) state:

This study clearly reveals that budgeting is one of the best approaches for obtaining coordination of the various factors of production in the individual business enterprise. The study also shows that budgeting is a technique adaptable to the needs of practically all size and types of business. The widespread use of budgeting attests its value as a planning and control technique. There seems little doubt that the use and refinement of this technique will increase as the American economy continues to grow.

Because budgets are called upon to serve different purposes, different types of budgets have developed. Representative primary budget classifications distinguish between - (1) programme and responsibility budgets, and (2) capital and operating budgets:

It is safe to say that in a company that has a complete budgeting programme, one would expect to find two types of budgets, a "Programme" budget and a responsibility budget. . . .The programme budget sets forth plans in terms of the major "programme" the company plans to undertake. . . .The responsibility budget sets forth plans in terms of the persons responsible for carrying them out. (Anthony, Management Accounting).

Budgets may be divided into main classes: (1) Capital budgets, directed towards proposed expenditures for project activities; and (2) operating budgets, directed toward planning and controlling programme activities.... operating and capital budgets may also be classified by type into (a) appropriation, (b) forecast, and (c) flexible budgets. (Kohler, A Dictionary for Accountants).

Both writers emphasize the same general types of budgets in a comprehensive budgeting programme.

Business budgets are often classified into fixed or static budgets and flexible or variable types. A fixed budget is one which is prepared for one level of activity for a definite time period. The chief characteristic of such a budget is that it is not adjusted to actual levels of activity when comparisons are made with actual results of operations. A fixed budget may be satisfactory when the company's activities can be estimated reasonably accurately, but at best it has limited usefulness as a control tool. Actually, a fixed budget is subject to revision, and therefore, it should be looked upon as one which is fixed only in the sense that it is not adjusted to reflect data for the actual level of operations.

A flexible, or variable, or sliding scale budget is one which is constructed in such a way that it will be possible to determine budget costs for any level of activity. A flexible budget is much more useful as an aid in controlling operations than is the fixed or static budget. In this connection, Devine writes:

The flexible sliding budget is the most effective instrument used by accountants to aid in control of factory overhead costs. The flexible budget should not be confused with the general coordinating budget, which is essentially the expression of a plan of action that enables management to coordinate the producing, distributing, and financing functions of the business.

If a company operated at 10,000 hours of activity, it would make little sense from a control standpoint to compare costs budgeted for 15,000 hours with those actually incurred for 10,000 hours. The significant comparison, of course, would be one which related budgeted and actual costs to the same level of activity.

Flexible budgets are principally designed for use in controlling costs and expenses as related to production and sales. Sales forecasting is one of the activities which must be carried on in a comprehensive budgeting programme, but emphasis in flexible budgeting is on costs and expenses. The fixed budget, subject to revision, will be used for sales and other detailed to revision, will be used for sales and other detailed budgets such as cash

requirements and capital additions. Nickerson (Cost Accounting) brings this point out as follows: "Since both types of budgets have their particular uses, there is no point in arguing for either a fixed budget or a variable budget to the exclusion of the other. ..."

In order to develop flexible budgets, some knowledge of cost behaviour is important. Two approaches are available for constructing such budgets. One requires the separation of costs into fixed and proportionately variable components. In the total for manufacturing burden, it may appears as follows:

Thus, if a firm operated in one year at 8,000 direct labour hours, the budgeted burden would be Rs. 10,400 made up of fixed costs of Rs. 7,200 and variable costs of Rs. 3,200 (8,000 hours × Rs. 40). Although the preceding budget has been shown in total only, an actual budget would include each type of fixed and each type of variable cost.

It is doubtful if costs can separated into those components which are literally fixed or variable. On the other hand, it is perhaps possible to make a tentative separation which will be sufficiently satisfactory within the probable ranges of output for use in making managerial decisions.

Under a second approach, a flexible budget may be developed for specific levels of activity; for example 40%, 50%, 60%, 70% and so on, with estimates being made of what the costs should be at these levels of activity. When this approach is followed, not all costs are necessarily separated into those which are fixed and those which are variable. If the actual level of activity is equal to one of the levels for which costs have been budgeted, no difficulty is encountered in determining the budgeted costs at that level of activity for comparative purposes.

On the other hand, if the actual activity is at a level for which the budget does not show costs, it will be necessary to interpolate in order to obtain the budgeted costs at that activity. If the actual activity is only slightly different from that for which costs are budgeted, no significant differences will occur if the budgeted costs for the actual level are assumed to be the same as those listed on the budget for the activity level nearest to the actual level attained. Thus, if costs are

budgeted for 80 and 100 per cent of capacity, and the actual activity is 81 per cent of capacity because the small difference of 1 per cent is not sufficient to change significantly the total budgeted costs.

Interpolation, of course, may not be precisely correct, although reasonable results can generally be obtained by its use. Interpolation between levels of activity assumes that variable costs vary proportionately with activity in the range under observation. This may or may not be true.

The care used in determining costs included in flexible budget will often directly influence its usefulness. Costs which reflect detailed study and which purport, within the area of human limitations, to represent what the costs should be will be more effective in the control of operations than costs which have been determined on the control of operations than costs which have been determined on the basis of past performance adjusted by rough estimates. Schlatter and Schlatter (Cost Accounting) emphasize that:

Not all budgets are standard budgets. Standard budget, encountered particularly in governmental operations, is the appropriation budget. Such a budget may also occasionally be used by business, especially in connection with advertising, capital additions, and research. The distinguishing characteristic of an appropriation budget is the limitation set on expenditure included in such a budget. The amount budgeted becomes the maximum amount which can be expended for the items in question. This type of budget has only limited usefulness for business operations, and if rigidly adhered to, may sometimes result in unvise expenditure of funds. It is fundamental that a business budget must have some degree of flexibility; otherwise, unsound practices may be followed.

All three types of budgets - fixed, flexible and appropriation - may be found in use in business concerns. Some firms may employ all three, while others may use only one type. This use may range from development of only a forecast budget all the way to adoption of a complete budget system in which operating controls are incorporated. Anthony (Management Accounting) says, "There is a tremendous variation in the way in which budgets are prepared in different companies; in fact, the diversity in budgeting practice is much greater than the diversity of accounting practice."

As Mata-Curry-Frank (Cost Accounting_ have stated, "The terms 'budgetary control' and 'budgeting' are frequently used interchangeably."

Budgetary control in its broadest sense means the use of a comprehensive system of budgeting to aid management in carrying out its functions of planning, to aid management in carrying out its functions of planning, coordinating, and controlling operations. A group of European experts (Cost Accounting and Productivity: The Use and Practice of Cost Accounting in the U.S.A., OEEC), after visiting many American firms selected for their good managerial practices, wrote; Budgetary control consists in comparing estimates of income and expenditure with the actual returns. The control embraces every budget, including the profit and loss budget and the cash budget, and records are compiled showing the annual and monthly estimates, actual income and expenditure, the difference between the estimates and actual income and expenditure, as well as the percentage variation. On the basis of their long experience in various European countries they observed :

Forecast and estimates are not new to the business world....What is original in America is the precision of the methods used, the budgets being drawn up on the basis of a meticulous and systematic analysis of the component industrial and commercial operations. Few European firms draw up budgets in this meticulous way or use them as an instrument of management control.

Sometimes the term "budgetary control" is restricted to the use of budgets as instruments for providing information to be used as basis for comparisons between costs incurred and costs which should have been incurred. In this context then, budgetary control is :

(1) the signaling of costs which differ from the budget, and

(2) the following up of significant variations with corrective action by management.

Peiree points out that a good administration of budgets permits common-sense departures from the budget. When a situation makes an unbudgeted expenditure desirable, the manager concerned will

not hesitate to recommend it if he is satisfied that it will prove beneficial to the company, thus not permitting the budget to control mechanically.

For a budget to be effective in the accomplishment of its end objectives, it must be properly developed and utilized. The budgeting programme must be soundly administered. Budgeting is a management function, and its success depends in no small way on the support given this important function by top management. As a matter of fact, such a programme will probably be doomed to failure from the outset unless the chief executives give it their whole-hearted support.

With reference to the organization for budgeting, Heiser (Budgeting - Principles and Practice) observes :

Because of the number of persons involved in preparing a budget, and the various interrelated actions and decisions, coordination becomes a problem and requires the setting upon a budget office. The budgetary system is a complicated mechanism, and a governor must, be provided to ensure that it works smoothly and effectively. Some executive must be assigned this responsibility to ensure that budgeting is properly organized and carried out.

Primary responsibility for the administration of a budget is usually delegated by top management to an executive, variously known as the budget director, budget officer, or assistant to the president. Heiser indicates that, "This executive may be the controller or a separate coordinate executive appointed to function solely as a budget officer."

The general duties of the budget officer are (1) to coordinate the efforts of those engaged directly in the preparation of the budget, (2) to prepare budget reports, (3) to recommend such courses of action as may be indicated by the budget, and (4) to make special studies pertaining to the budget. Hennessay and Roberson (NAA Bulletin, Vol. 38) give the responsibilities of the budget director in the Stromberg-Carlson Division, General Dynamics Co. as follows :

The budget director is responsible for the final presentation and interpretation of the company financial plan....Further, the

budget director is responsible for the development and revision of the budget procedures and issuance of instructions pertaining to schedules and general activity of his staff.

The budget director is a staff officer and as such should exercise no line authority except with him own personnel. Furthermore the development of the budget should not be a job delegated to the budget officer but rather one that is supervised by him. The budget will be the product of the efforts of all levels of management, but these efforts should be coordinated and supervised by the budget officer.

Various arrangements have been recommended as to how the budget officer should fit into the over-all organization. At least two possibilities exist, and both are supported by different groups with deep conviction. Some authorities recommend that the budget director be completely separated from the accounting function, not only physically and in terms of duties, but also in the chain of command. These writers usually insist that the budget director should report to the chief executive or his immediate subordinate. Thus, Lamperti ad Thurston emphasize that "the budget function should be set up separately from accounting and should not come under the supervision of the comptroller." Lonear writes that in the Vendo Company the "budget programme is ..... set up as a staff function reporting directly to the office of the president or the executive vice-president of the company."

Another group seems to believe just as strongly that the budget officer should report to the president through the accounting organization. Heckert and Willson assert that : "In most companies this is the function of the chief accounting official, the controller.... In large concerns an official may be designated to devote his entire time to budgeting. Such an official should generally be under the jurisdiction of the controller."

The Controllership Foundation study by Sord and Welsch (Business Budgeting) shows that of 379 companies with formal budget programmes, 40 per cent have a budget programme (70 per cent of these directors in turn report to the controller). The controller or assistant controller coordinates the budget programme in 34

percent of the reporting companies; in 8 per cent of the companies it is the treasurer or assistant treasurer who has this responsibility; and in the remaining 18 percent the budget coordinating is done by persons with a variety of miscellaneous titles.

Regardless of the position of the budget officer within the organizational set-up, his chief objective is the proper administration of the budget. In some companies it may be accomplished successfully with one organization it may be accomplished successfully with one organization plan and in other companies with another. It will be necessary, however, for the budget officer to work in close cooperation with the accounting department.

In some companies a budget committee of executives in charge of the major functions of the business may be found to be a useful device for coordinating and reviewing the budget programme, particularly as related to general policies which affect the budget. The budget committee is generally advisory in nature and is charged with the following functions :

A. To receive and review individual budget estimates. To suggest revisions.

B. To decide on general policies affecting more than one primary department.

C. To approve budgets and later revisioi

The committee may thereby become a very powerful group in coordinating the activities of the firm and in the synthesizing, if not development, of policy.

Budget Preparation :

A successful budgeting programme can be carried out only when certain fundamental conditions and attitudes exist. Effective budgeting rests upon a sound organization, adequate accounting records and procedures, full support of top management, a continuous programme of education in the uses of budgets, continuing study of budget and control problems, and revisions of budgets when appropriate. Ciear-cut organization lines should be established with appropriate delegation of responsibilities.

Satisfactory working relationships between supervisors and subordinates must be developed throughout the firm. As Heiser expresses it :

Budget preparation is a cooperative action embracing all levels of management. Top management indicates the desired immediate objectives. Lower management levels then work out the details, both to test the feasibility of the indicated objectives and to ensure coordination of all the parts. As a result of this effort, changes in the objectives may be indicated. Thus the preparation involves not only cooperation but also an up-and-down or reciprocating adjustment of objectives and plans to achieve a realistic and workable programme, as nearly as possible in line with the company's ling-range plans.

These requirements are usually emphasized in the establishment and operation of a good budgetary system. Welsch emphasizes the need for fitting the budget programme to the peculiarities of each firm and for making changes in the system as the firm grows or changes. He observes, "It is doubtful whether any two budget programmes should be identical, for the obvious reason that no two concerns are identical in every respect."

Since budgeting cuts across all segments of the company, it is clearly a management function. Yet it inevitably is related to information which will be developed and processed through the accounting department. For this reason procedures must be developed so that budget information and operating data can be collected similarly.

The chart of accounts should be given careful study to ensure that the classification of accounts will be such as to make possible the collection of both budget and historical data in like manner. Much of the effectiveness of a budget programme will be lost if these two types of information are not reported on the same bases, or if considerable analyses must be undertaken to convert those data for comparative purposes. Studies of the chart of accounts and related classifications may indicate the need for a revision of accounting procedures consistent with the requirements of budgetary control.

Heiser emphasises the importance of a sound accounting structure to budgeting and gives and following specific functions of accounting in budgeting.

Standard costs and budgets complement each other in various ways. The development of standard costs will provide a sound basis for budgeting. Their use will tend to enhance the accuracy of budgets and will facilitate their preparation. Ideally, standard costs should be made an integral part of the budget programme, that is, in its preparation as well as in its use as control device.

Prior to the actual preparation of a budget, the time period involved must be determined. Different types of budgets (for example, long-range planning and short-term control budgets are designed with different objectives in mind. The time period covered will therefore necessity not be the same for all budgets, yet it must be definitely established.

Mats-Curry-Frank points out that the following factors should be considered in determining the length of the budget period :

For a business of a seasonal nature, the budget period should cover at least one entire seasonal cycle. The budget period should be long enough to complete production of the various products. The budget period should be long enough to allow for the financing of the production within advance of actual needs. Major operations and drastic changes in plant layout or manufacturing methods must be planned far in advance to determine financial requirements. The budget period should coincide with the financial accounting period in order to compare actual results with the budget estimates.

For those companies whose business life is broken down into definite annual units (for example, firms which introduce new models each year), an annual budget is logical. Other firms may develope new products for each season and will therefore find most satisfactory a budget period which equals the length of the season. Enterprises which have highly seasonal sales but do not have style seasons or model years will find the annual budget to be the most useful. Without such a budget it will be difficult to appraise the results of operations. What is needed under such circumstances, for forward planning, is picture of the year as a whole.

Where the business is not highly seasonal, does not introduce new models annually or have style seasons, budgets may be prepared for varying lengths of time in accordance with the objectives desired. Many companies develop a long-range budget which sets forth their major objectives for a period from three to five years or more. Subsequently, the annual budget will be broken down into shorter fiscal periods ranging from a week to a month or to a quarter of a year.

The Controllership Foundation study by Sond and Welsch showed that of the 375 companies in this survey that disclosed the length of their budget period, 86 percent reported that the budget covered one year; 10 percent indicated a 6-month period; and 4 per cent a 3-month period. Most of the companies studies subdivide their budget into a series of interim time periods to aid to both planning and control. Monthly periods are used by 79 percent of the companies reporting on the subdivision of the budget period; 17 per cent use quarterly periods; 1 per cent use weekly periods; 1 per cent employ 4-week periods; and 2 percent use the annual period only.

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16

WORKING CAPITAL AND FINANCIAL DECISION MAKING

Introduction :

The theory part of working capital is discussed in this chapter. The chapter deals with the concept of working capital, the Working capital management, meaning of working capital management and fixed assets management, need of working capital, principles of working capital management and structure of working capital. The types of working capital and their financial pattern are also discussed. This chapter describes determinants of working capital, adequacy and inadequacy of working capital, financing approaches of working capital, techniques of working capital analysis, test of working capital policy and profile of-industries.

Concept of Working Capital :

The funds required for financing the duration of operating cycle in a business are known as working capital.

In the financial and accounting world, the term "Working Capital" is often misunderstood. There seems to be no unanimity with the concept of working Capital amongst its users. It either lacks correct understanding or parhaps the users lack uniformity in the application of this term. This is an established fact because

working capital is not mentioned in account form in the "Financial Statement". Due to this disagreement, some finance experts are of the view that it is better to avoid the expansion of working capital altogether. Though, there is no confusion regarding the distinction between working capital and fixed capital.

In analsing its synthesis or antithesis, the two terms, viz., working and capital are to be studied separately.

The term working means contributing something (in some way) to profits or engaging in some productive work. It implies a distinction between capital which makes such a contribution or engaged in some productive working. It also implies a distinction between capital that makes such contribution or engaged in production which does not work i.e. non-working.

On this basis the amount of non working capital appearing in the Balance Sheet is likely to be modest because no management would like to keep a non-productive item in its business for any length of time and almost all the money invested in a business is called "working capital". But such is not a case and therefore, this interpretation need not be given a serious thought . To avoid the notion of "productive" or "Non-productive", the meaning of "Working" may be confined to capital consumad during the year in generating current profits. This idea indicates that the value of that portion of firm's land, building, equipments and other fixed assets which are applicable to the production of current, distinguished from future, fall within the scope of working Capital.

In other words, working capital includes fixed tangible and intangible assets to the extent of next year depreciation or amortisation. Considering this view of the term working, the fixed assets tangible-intangible both should be reclassified by splitting the amount traditionally shown under "Fixed assets" in the Balance Sheet into working and non working categories. Since it involves enumerable accounting problem, it cannot be recognised practical concept.

The term 'working' therefore means the circulation of capital in one form or another during the day to day operations of the business.

Similarly, there are controversies regarding the meaning of term 'capital". The Economists accept it as the wealth used in further production where the wealth may be expressed in monetary or non monetary terms. But the Accountants mean by capital is the excess of "Assets over Liabilities". Which indicate "Net Worth". In legal sense "Capital" refers the portion of the consideration received by a company upon the issue of its "Shares".

Capital in the business sense means the actual wealth or assets of a business in money. Such "Assets" may be "tangible or intangible".Thus, in the business, the word "capital" is money or money values used in the business regardless of source of obtaining it. For them "capital" is synonymous with the "total assets".

Affixing the adjective working to the noun 'capital' suggests that possibility of there being such a thing as non working capital. For our present purposes, working capital refers to funds which are used during an accounting period to generate a current income of a type which is consistent with the major purpose of a company's existence. Thus, by definition, non working capital becomes funds which do nut produce current income they do not generate an income of a type which is consistent with a company's existence. It may be noted that in this concept the distinction between working and non working capital rests upon what the funds are doing and upon the form in which they happen to exist.

Working capital funds are different from working funds in a business, Working funds are the total resources a business concern and include internal and external equities, which are sunk in current and fixed assets. Working capital Funds, however, are in those which are sunk only in current assets of a concern.

The concept of net working capital enables a firm to determine how much amount is left for operational requirement.

Regarding the term "Working capital" those who define "capital" as the excess of total assets over total liabilities define it as the excess of current assets over current liabilities.

Those who believe that the capital is the actual wealth or assets of a business in a money whether tangible or intangible, accept the working capital as the sum of all the "current assets".

In accounting "working capital is the difference between the inflow and outflow of funds. In other words, it is the net cash inflow.

Thus, there are two distinct views about the concept of working capital. The first view is supported by authorities like Jules Bogen, Edward S. Mead, John C. Baker and D.W.Mallot, Keneth Field, A.S. Dewing, A.K.Sen, who are of the opinion that working capital should be taken to mean current assets only. This concept is called gross concept.The second view is put forth by authorities like E.A . Sailers, Edward E. Lincoln, W. Mackenzie Stevens, H.G. Guthman and Herbert E Dongall, Colin Park and John W. Gladson, who hold that working capital should mean the total current assets minus current liabilities. This concept is called net concept.

The two concepts of working capital as defined above may also be known as quantitative concept (Gross) and qualitative concept (Net) because the gross concept represents the total amount of funds used for currant operating purposes and net concept is the amount of current assets that has been supplied by long term sources. According to net concept , current assets must exceed current liabilities and then only there can be working capital. On the other hand, if the current liabilities exceed the current assets, there is no working capital but there is a working capital deficit.

Current assets circulate in a business like blood in the human body and the working capital plays the same role in business as the heart does in the human body. As soon as the heart gets blood, it circulates the same in the body.In the same way, working capital funds are obtained and circulated in business operations. As and when this circulation stops, the business becomes lifeless. It is because of this feature that working capital is also known as the circulating capital due to its flow in circular nature. Gerstenberg explains this circulating term to mean all such assets, of a company as are changed from one form to another in the ordinary course of business, for instance, from cash to inventories, from inventories to receivables, from receivables back to cash.Therefore, circulating or operating capital is the sum of net working capital and current liabilities, in other words, the current assets. In the words of Adam Smith, "The goods of the merchant yield him no revenue or profit till he sells them for money, and the money yields him a little till it is

again exchanged for goods, this capital is continuously going from him in one shape and returning to him in another, and it is only by means of such circulation or successive exchanges, that it can yield him any profit. Such capital, therefore, may very properly be called circulating capital. What we call current assets.Smith calls "Circulating Capital".

Both these concepts of working capital have their own significance. "If the objective is to measure the size and extent to which current assets are being used, "gross concept" is useful, whereas in evaluating the liquidity position of an undertaking, 'net concept' becomes pertinent and Preferable".This has been admirably summed up by Brown and Haward, who compare it with a river which is always there, but whose water level is constantly changing.

In the Present study the term current assets and current liabilities have been taken in the same sense as defined by Fitzgerald in "Analysis and Interpretation of Financial Statements". According to him, "Current assets may be defined as cash and other assets which are expected to be converted into cash in the ordinary course of business within one year or within such longer period as constitutes the normal operations cycle of a business". He further defines, "Current liabilities are those liabilities where liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets, or the creation of other current assets or the creation of other current liabilities".

The Working Capital Management :

Working capitol management is an integral part of overall corporte management. To a financial manager a working capital sphere throws a welcome challenge and opportunity. Importance of working capital can be judged from the fact that many a time the main cause of the failure of a business enterprise has been found to be the shortage of working capital and their mishandling. Inadequate working capital is a serious handicap in business, whereas greater amount of working capital is mismanagement of working capital. The fixed capital investments generate production capacity, and working capital makes the use of that capacity Possible. Competent

administration of working capitalsolves the problems of under utilisation of capacity. The success or failure of concern mostly depends upon how efficiently working capital is managed.

Liquidity and profitability are two important and major aspects of corporate business life. A firm may exist without making profits may be treated as sick unit but one having no liquidity may soon meet with its downfall and ultimately die. Both the aspects are essential but profitability and. liquidity are mutually exclusive. Balancing between liquidity and profitability is important because their co-existence is very difficult. If we emphasise more on liquidity it will adversely affect the profitability and similarly if we emphasis more on profitability it will adversely effect the liquidity. Therefore proper balance between profitability and liquidity should be maintained so that any objective may not suffer at the cost of others. Hence, the maintenance of balance between the two becomes an essential function of working capital management. The company can achieve maximum profitability and can maintain adequate liquidity with the help of efficient and effective management of working capital.

In modern financial management, administration of working capital is an important and challenging task due to high proportion of working capital in a business and some of its peculiar characteristics.

Generally working capital is financed by commercial banks and bank credit is the scarcest national financial tool. So far the proper and desired use of bank credit in the development of Indian economy, RBI placed controls for maintenance of discipline in the use of bank credit like credit authorization scheme-1965 and appointed various committees to suggest the measures of discipline. e.g.. Dehejia Committee-Oct.68, Tandon Committee July-1974, Chore committee- March-79.

The above discussion shows that working capital management has occupied an important place in financial management. It has been rightly said that, "working capital management has been looked upon as the driving seat of a financial manager."Constant management is required to maintain appropriate level in the various working capital accounts."

Meaning of Working Capital Management:

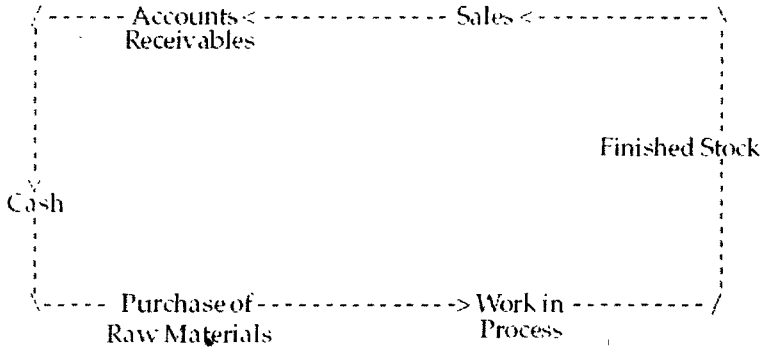
The management of current assets (normally converted into cash within an accounting year) and current liabilities (generally discharged within a year) and the interrelationship that exists between them may be termed as working capital management. Working capital management is also known as current assets management because it requires much of the financial manager's time. According to James C. Van Horne, "Working capital management is usually considered to involve the administration current assets namely cash, marketable securities, receivables and inventories and the administration of current liabilities.

Thus working capital management is an attempt to manage and control the current assets and the current liabilities in order to maximise profitability and proper level of liquidity in business. Function of management of working capital includes - Requirement of investment in working capital, optimum lavel of investment into different current assets, Relationships between current assets and current liabilities, optimal proportion between long term sources and short term sources of funds to finance working capital, and ascertainment of appropriate source of working capital finance.

Working Capital Management and Fixed Assets Management:

To some extent, the management of working capital is similar to that of fixed assets management because both initially analyse the effects on profitability and risk. The working capital management, however, is not the same as fixed assets management. Working capital management refers to the management of current assets and current liabilities. According to James C.Van Horne, "Current assets by accounting definition, ase assets normally converted into cash within one year. Administration of fixed assets (assets normally not converted into cash within one year), on the other hand, is usually considered to fall within the realm of capital budgeting."

Actually, the fixed assets are acquired to be retained in the business over a period of time and to give returns over the life of the assets. So the time factor is very important in it.Further, discounting and compounding techniques to adjust the value of benefits



accruing from such fixed assets over a period of time play a vital role in fixed assets management. Contrary to it, working capital loses its identity very quickly, usually within a year.

Yet, another notable feature of current assets is the Problem of liquidity versus profitability and the related aspect of risk. If the size of current assets is large, it will strengthen the firm's liquidity position but profitability may be adversely affected as funds will remain idle. Conversely, if tha size of current assets is relatively small, the ovurall, Profitability may improve, but it will have an adverse affect on the liquidity position and make the firm more risky.

Need of Working Capital :

working capital is needed mainly because the production takes place first and then comes the sales.

The objective of financial decision making is to maximise the shareholders' wealth. To achieve this, it is necessary to generate sufficient profits. The extent to which profits can be earned will naturally depend upon the magnitude of the sales. Among other things, a successful sales promotion programme is, in other words, necessary for earning profits by any concern. However, sales are not converted into cash instantly. There is invariably a time-lag between sales of goods and receipts of cash. There is, therefore, a need for working capital in the form of current assets to deal with the problem arising out of the lark nf immediate realisation of cash against goods sold. Thus, sufficient working capital is necessary to

sustain sales activity. Technically, this is referred to as the operating or cash cycle. The operating cycle can be said to he as the heart of the need for working capital. K.V.Smith aptly observes, "The continuing flow from cash to suppliers, to inventories to account Iscralvehly and b· ·, into cash is what has been called the operating cycle. According to O.M.joy, "The term 'Cash Cycle' refers to the length of time necessary to complete the following events" :

(a) Conversion of cash into Inventory,

(b) Conversirn of Inventory into receivables

(c) Conversion of receivables into cash.

This cycle will continue MrDuqhuut the life of the business as shown in figure as under:

Above operating cycle relates to the manufacturing company.

If it were possible to complete the sequences instantaneously, there should be no need of working capital management. Since it is not possible, a concern is forced to have current assets. Since cash inflow and outflow do not match, the concern has necessarily to keep cash or invest in short term liquid securities so that it will be in a position to meet obligations when they become due. Similarly, the concern must have adequate inventory to guard against the possibility of not being able to meet a demand for its products. Adequate inventory, therefore provides a cushion against being out of stock. If a concern has Lo be competitive, it must sell goods to customers on credit necessary to hold account receivable. It Is in these ways that an adequate level of working capital is absolutely necessary for smooth sales activity which, in turn, enhances thr owner's wealth.

Principles of Working Capital Management:

The financial manager should consider the following principles while exercising working capital management: which has laid down by E.L. Walker and elucidated by C.Van Horne.

Principle of Risk Varification : Risk here refers to the inability of a firm to maintain its sufficient current assets to pay for its obligations. This principle is concerned with the relationship between the levels of working capital and sales. If working capital

is varied relative to sales, the level of risk that concern assumes is also varied and the chances of gain or loss are increased. This principle implies that the definite relation exists between the degree of risk and the rate of return. As a concern assumes more risk, the opportunity of gain or loss increases accordingly. As the level of working capital relative to sales decreases, the degree of risk increases. Thus, if the size of working capital goes up, the amount risk goes down and the opportunity for loss or gain is likewise adversely affected.

The size of working capital depends upon the attitude of the managnmet. A conservative management likes to reduce the risk by holding a higher level of working capital, while a liberal management assumes higher end higher risk by minimising the level of working capital. The object of & management should, however, be that lovel of working capital which would optimize the concern rate of return.

Principles of cost of Capital : The first principle deals with the risk associated with amount of working capital employed in relation to sales whereas second principle is uoncernHr, with the risk resulting from the type of capital used to finance current assets. The second principla Is the type of capital used to finance the working Capital directly affects the amount of risk that a firm assume as the possibilityof gain or loss and cost of capital.

Investors relate the price of their capital to the degree of risk associated with the various types of securities. They charge high for equity capital than for debts because equity capital possesses high risk. Thus management is able to brighten its prospect for high returns or its equity capital through the use of debt capital. A firm wishing to minimise risk will employ only equity capital; however, in so doing, it foregoes the chances of higher returns on equity capital. But the increase in return by undergoing more risk is truly only upto certain point. When excessive risk is assumed, a firm's chance of loss will evidently overshadow its opportunity for gain and at this point return to equity is threatened. Unlike rake of return, the cost of capital moves inversely with risk i.e. as additional risk capital is employed by the management, cost of capital declines. This relationship prevails until a firm's optimum capital structure

in achieved; thereafter, the cost of capital rises. This not only because the creditors will raise the amount of interest charged, but also the suppliers of equity capital will lower the price they are willing to pay for various types of equity securities.

Thus there are different sources of finance having different cost of capital. It should be kept in mind that the cost of capital is in inverse proportion to risk.

Principle of Maturity of Obligation : As stated above, the extent of the use of debt depends upon the level of risk a management wishes to undertake.It should be noted that the risk is not only associated with the amount of debts used related to equity but also related to the nature of the contracts negotiated by the borrower. The dates of maturity and restrictive clauses of the contracts are the most important characteristics of debt contracts that directly affect the firms operation. A firm should make every attempt to relate maturities of obligation to its flow of internally created funds. There should be least disparity between the maturities of firm's current obligations and its flow of internally generated funds because the greater the disparity between the maturities of firm's short-term debts instruments and its flow of internally generated funds, the greater the risk and vice versa. Incidentally, management is not compensated for assuming the risk referred to in this concept; therefore, under no circumstances should the risk be assumed.

The lag between expected net cash flows and payment of debt (called Margin of Safety) will depend upon the risk preference of management. The shorter the maturity schedule of debt, the greater the risk that the firm will not be able to pay the debt and the longer the maturity schedule of debt in relation to expected net cash flows, the less the risk of inability to pay debt. However, financing is likely to be more costly under longer maturity schedule, thus cutting into profits. Profits can be maximised by making every efforts to tie debt maturities with the cash inflows of internally generated funds because, in such a case, there will be no need to hold low-yielding liquid assets nor to have more long-term financing than is absolutely necessary.

Principle of Equity Position : The main purpose of management is determining the ideal level of working capital. This

principle serves as a basis for determination and is applicable to investments made not only in various component of working capital but also in fixed assets. Stated precisely it is as follows : Capital should be invested in each component of working capital as long as the equity position of the firm improves. So according to this principle, the amount of working capita] invested in each segment should be adequately justified by a concern's equity position, Every rupee invested in the working capital should contribute to the net worth of the concern.

On the whole, a management has to determine the liquidity of the firm on the basis of the information about risk and opportunity costs of holding liquidity. The degree of liquidity desirable is a function of the probability of insolvency at various level of liquidity, the opportunity cost of maintaining those levels and the cost of bankruptcy. Therefore, the behaviors of the management should be influenced not only by the risk and the opportunity costs associated with the various levels of liquidity but also by the cost of bankruptcy. Thus management must behave in a manner consistent with maximisation of share holders' wealth.

Structure Of Working Capital:

Structure of working capital means the study of elements of current assets and current liabilities. The main elements of current assets are cash and bank balances, inventory, receivables and other quick resources like short term temporary investments. Current liabilities include payables, bank overdrafts, outstanding expenses, loans and advances and proposed dividends.

Inventory : Inventory generally constitutes a major portion of current assets. The profitability of a business depends upon the turnover of working capital and that in turn depends to a large measure upon the turnover of inventory. The term "Inventory" according to the American Institute of Accounts, designates, "the of those items nf tangible personal property which (1) are held for sale in the ordinary course of business, (2) are in the process of production for sales and (3) are to he currently consumed in production of goods or services to be available for sale."

The above definition shows that Inventory may be divided mainly into three classes : raw materials, work in process and finished goods.

Receivables : Receivables are asset accounts representing accounts owed to the firm as a result of the sale of goods or services in ordinary course of business. Generally major part of the sales are on credit. It is a fact that credit allowed to customers, boosts the sales. In this sense, receivables play an important role in ensuring a higher turnover for the firm concerned. Increase in receivables results from several causes : increase in sales, size of cash discount, length of credit terms, volume of delinquent accounts.

Thus, the size of receivables depends much upon the credit policy of a firm. The success of the credit policy, in turn, depends much on the efficiency of the collection department.

Cash : Cash is one of the most significant means of day to day operations of a business, as it is a form of liquid funds which are available for prompt payment at any time. Cash is both a means and an end for a firm. All the firms, hold cash for three motives : transaction, contingency and opportunity motives.

The cash balance of a firm is influenced by credit position of firm, status of firrm's receivables and inventories, nature of business enterprises, management attitude towards risk and size of sales in relation to fixed assets. Besides these factors, cash balance is also influenced by availability of short term credit, money market rate and variations in cash flows.

The management should judge well how much cash should be held in hand and in the bank for meeting existences. It has to be remembered that cash and bank balances are absolutely unproductive or non-earning assets, so they should be kept at the minimum level needed for meeting business requirements. No easy formula can determine the amount of cash a business should maintain. The optimum depends on various factors influenced on it.

Types of Working Capital and their Financing Pattern:

Working capital Can be classified as under:

Permanent, fixed or regular working capital : Permanent working capital is the minimum amount of current assets which is continuously required by the business even during the dullest

season of a year to carry on its operations, This level of working capital should always be maintained by a business, so that it might be in a position to run the business even during the dullest season of the year. It has the following characteristics .

(I) It is classified on time basis

(II) It continuously varies from one asset to another and cotinuous to remain in the business process.

(III) It also varies with the growth of business.

Temporary, Fluctuating, Variables or Seasonable Working Capital : Temporary working capital is the extra amount of current assets which are required during oho more active business season of the year. Its main features are as under:

(a) It is particularly paired to a concern of a seasonal or cyclical nature.

(b) It is not always gainfully utilised, though it may change to another a fixed working capital does.

In the words of D.M.Joy, "Any amount over and above the permanent level of working capital is temporary, fluctuating or variable working capital."

Figure 1 (Page No.1) illustrates the difference between permanent and temporary working capital relating to growing firm.

The figure indicates that with the expansion in the size of the firm over the period, the requirement of permanent working capital also increases. Tandon committee has referred to this type of working capital as "hard core working capital". Hard core working capital represents the minimum amount of investments in inventories, account receivables and cash balance which an industrial undertaking requires to carry on at a certain level of activity.

The financing pattern of fixed assets and current assets in a particular firm depends on the policy of the management to bear risk. There are three different approaches which may be adopted, i.e. matching approach or hedging approach, which involves matching of effected life of assets with the expected life of funds raised (as depicted in figure 2.1 Page No.1), conservative approach, when the firm relies more on the long term sources of funds and use

of short term funds is limited only to emergency situations, and aggressive approach, which involves the use of more short term sources of financing than warranted by the Matching plan.

Determinants of Working Capital :

There are numerous factors which affect the working capital requirement of a concern. An efficiency appraisal of these factors assists the management formulating sound working capital policies and estimating its requirements rightly. As there occur continuous variations in economic environment, it is a very delicate exercise to decide the level of current assets required at a time, after making due adjustments for changes that have taken place. Though it is difficult to quantify the influence of each of the factors affecting working capital, one can appreciate their significance. Realising the complications involved in working capital estimates,Gestenberg observes,

"Although no definite rule can be established for determine working capital requirement, we can arrive at some general principles. Certain influences, some inherent in the nature of the business and the others arising out of business management policies, affect each oF the items of current capital."

It is found that the factors given below affect not only the requirements of working capital but also influence to a great extent the composition or structure of working capital. It is believed that any attempt at working capital management could be improved upon with greater understanding of the underlying factors. The important factors are as follows ;

(a) Nature of business

(b) Period of manufacture and the cost of product.

(c) Volume and terms of purchase

(d) Volume and terms of sales

(e) Size of business unit

(f) Degree of specialisation

(g) Capacity utilisation

(h) Seasonal variations

(i) Co-ordinntion between production and distribution.

(j) Business cycles

(k) Management policy and

(l) Miscellaneous factors such as Government policies, transport and communication system and economic and political environment.

Adequacy of working Capital:

The importance of adequacy of the working capital in a business cannot be over emphasized to run a business sufficiently an adequate amount of working capital is very essential.In its absence, fixed assets cannot gainfully be utilised. Therefore, business should have enough funds to meet its obligations well in time. To avoid interruption in the business operation, a concern requires funds to finance inventories and receivables. The adequacy of cash and other current assets together with their efficient handling virtually determine the survival or demise of an enterprise. Hence, working capital is considered the life blood and the controlling nerve centre of the business.

Therefore, a business has to maintain an adequate amount of working capital throughout its life. Working capital should be adequate for the following reasons:

I. It enables a concern to operate its business more efficiently, because there is no delay in obtaining raw materials etc.

II. It safeguards a business from the adverse effects of diminution in the value of current assets.

III. It enables a business to meet all its current obligations well in time and to take Advantage of cash discount.

IV. There may be need to offset losses from operations

V. There may be a need to offset excessive non-trading and abnormal losses.

VI. The management may have to present facts in obtain funds from different sources fnr expansion purposes.

VII. There may be unnecessary accumulation of inventories.

VIII. It enables the concern to hold its own even during a period of business depression.

IX. It enables a concern to extend favorable credit terms to customers.

X. There may be a need to counter an unwise dividend policy.

XI. Working capital funds may be invested in non current assets.

XII. The management may fail to accumulate funds for the redemption of debentures.

Inadequate and Excess Working Capital:

In case concern fails to plan the requirement of working capital properly, it may have on one occasion inadequate working capital and on another occasion excess working capital. A concern may have inadequate working capital mainly because of the following reasons:

I. Shortage Of liquid funds.

II. Nil or under investment in marketable securities.

III. Under investment in receivables.

IV. Under Investment in inventory.

The effects of inadequate working capital are at times alarming. The immediate effects of inadequate working capital are : (i) low liquidity (ii) low profitability (iii) higher interest charges (iv) undersation of production capacity.

The above description leads us to the conclusion that shortage in working capital caused mainly due to insufficient cash presents a very serious problem. Every concern should,therefore, plan its cash requirements properly and try to Maintain the required balance in cash. Failure to do so may lead to bankruptcy and early liquidation of the concern. If the actual investments in working capital is more than the actually required amount, it is termed as excess working capital or mismanagement of working capital funds. A business house may have excess working capital mainly due to the following reasons :

(i) Over investment in inventory

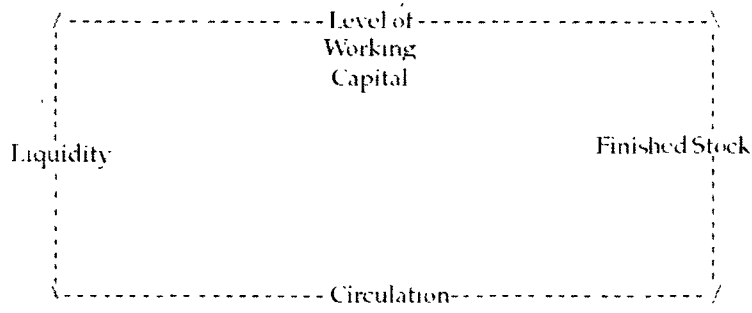
(ii) Over investment in receivables

(iii) Excess idle cash

(iv) over investment in marketable securities.

Financing of Current Assets:

Current assets of a concern are financed by spontaneous currant liabilities (trade creditors, back over credit, short term loans and provisions), and long term sources (share capital and debentures mainly). Assuming that the level of spontaneous current liabilities is determined by extraneous factors (business practice, income tax and dividend etc.), the relevant question in current assets financing is : What should be the relative proportion of short term sources of financing and long term sources of finance? The following three approaches have been applied in practice.



Matching Approach: If the concern adopts a matching approach for financing, each assets will be offset by a financing instrument of the same approximate maturity.In other words, the firm can adopt a financing approach which involves the matching of expected life of assets with the expected life of the sources of funds raised to finance assets. Thus, a seven year loan may be raised to finance a plant and machinery with an expected life of seven years, stock to be sold in one month may be financed with a one month bank loan and so on. Short term or seasonal variation in current assets would be financed with short term funds. This situation is illustrated in the figure 2 (Page No.I)

If total fund requirements behave in the manner shown in the figure 2 only the short term variation shown at the top of the figure

will be financed with short term debt. To finance short term needs with long term sources would necessitate the payment of interest for the use of funds. With a matching approach of financing, a borrowing and payment schedule for short-term financing would be arranged to correspond to the expected swing in current assets. Fixed assets and the permanent current assets would be financed with long term sources of funds.

Conservative Approach : An exact matching plan may not be possible in practice. Therefore, a firm may adopt a conservative approach to finance its current assets and fixed assets. The financing policy of the firm may be said to be conservative when it relies more on the long term sourres of funds for financing its requirements. The use of short term funds should be limited only to emergency situations or when there is an unanticipated cutflow of funds. It can be seen in the figure 2.3 (Page No.II)that under conservative approach of financing long term funds are used to finance fixed assets, permanent current assets and a part of temporary current assets.

Aggressive Approach : A concern may be aggressive in financing its currant assets. An aggressive approach is said to be followed by the concern when it uses more short term sources of financing than warranted by the matching plan. Under an aggressive approach, the concern finances a part of its permanent current assets with short term sources of funds. Some extremely aggressive concerns may even finance a part their fixed assets with short term sources of funds.The relatively greater use of short term sources of funds makes the concern more risky.The aggressive financing approach is illustrated in the figure 2.4. (Page No.II)

Techniques of Working Capital Analysis:

There are two main measuring tools or techniques for analysing the working capital position of a firm. (i) Fund Flow Analysis (ii) ratio Analysis.

Fund Flow Analysis : Fund flow technique helps to analyse the changes in working capital components between two balance sheet dates. Fund–flow analysis states how much funds have been

obtained from different sources to finance working capital and how they have been utilised. The statement of changes in working capital is based mainly only on the same approach as used for preparation of fund flow statement. The necessity of the finds flow analysis is now realised by all.

".....information concerning the financing and investing activities of a business enterprise and the changes in its financial position for period is essential for financial statement users, particularly owners and creditors, in making economic decisions. When financial statements purporting t o present both Financial positions (balance sheet) and results of operation (statement of income and retained earnings) are issued, a statement summarizing changes in financial position should also be presented as a basic financial statement for which an income statement is presented". The funds-flow technique of analysing working capital, does not clarify the Importance of movement in the working capital structure. Further this technique can be used only by the internal management in its control of working capital.Moreover, it does not throw light on the questions whether the capital is being used most efficiently or whether the current financial position of the firm has improved.

Ratio Analysis : The most important and commonly used technique for the analysis of working capital in modern time is the "Ratio Analysis". It is the basic technique used in judging the liquidity position of a concern. "A ratio is simply one number expressed in terms of another". There are two ways of expressing ratios, viz. (1) the "Phrase Method", such as "two for three", (2) the "percentage method", such as 200 percent.

"Ratios are simply a means of highlighting in arithmetical terms the relationship between figures drawn from financial statement".In the words of J. Batty, the term "accounting ratios" is used, "to describe significant relationship which exists between figures shown on the balance sheet, in a profit and loss account, in a budgetary control system or in any other part of the accounting organisation.

The technique of ratio analysis is gaining acceptance in the, accounting and mathematical world. Helfert has rightly stated, "The

ratio analysis provides guides and clues especially in spotting trends towards better or proper performance and in finding out significant deviation from any average or relativelyapplicable standard".

Although ratio analysis is used widely but it should be kept in mind that "No one ratio will give the entire picture, but they do tend to give indications., which cumulatively assist considerably in appraisal of financial position and operation of the organisation " . Ratios by themselves are not conclusions, the analyst must draw inferences from the ratio he has computed before he can reach at any conclusions. In brief, "It should be remembered that ratios are only guides in analysis, and not conclusive ends in themselves.

Trend Analysis : Trend analysis makes it easy to understand the changes in an item or a group of items over a period of time. For this purpose a base year is selected and the amount of that item relating to the base year is taken equal to 100 and index number are computed for other years based on the amount of that item in those Years. It is dynamic method of analysis of showing the changes over a period of time. This method of analysis indicates the direction in which a firm is going and thus helps in making forecasts of future trends.

Other Techniques : Some other techniques like cash flow analysis and a few statistical mathematical techniques can also be used for the analysis of working capital. The statistical techniques generally applied are moving average, index numbers, range,co-relation, regression and analysis of time series.

Tests of Working Capital Policy :

There are four test of working capital policy.

1. ***Level of working capital :*** This should be Maintained by careful study of the movement of working capital in sucessive periods. If a management can develop a pattern in these movements, this pattern would serve as guide to its changing requirements in relation to certain decisions which are made from time to time.

2. ***Structural Health :*** The relative health of the various component of working capital should be considered from the point

of view of liquidity. It is necessary to draw structural relationships in respect of each component constituting the current assets.

3. ***Circulation:*** This in an important feature of the liquid position and involves the natural activity cycle of an enterprise. Ratios may be calculated to show the average period required for the conversion of raw materials into finished stock, finished goods into sales and sales into cash.

4. ***Liquidity :*** A more comprehensive test to measure liquidity may he adopted by using the following two ratios, each expressed as percentage of :

a. stocks to current assets.

b. Liquid resources to current assets.

□□□

17

FINANCIAL SYSTEM AND LEVERAGE

Leverage belongs to the category of capital gearing. It shows the tendency of the profits to fluctuate. A change in the percentage of amount can increase or decrease percentage in the other amounts. It serves as an important tool in financial planning. Financial leverage is a very important factor in financial management because the cost structure of a company should not change in a significant manner as a result of change in sales. On account of leverage, the tendency will be for the business profits to increase higher in period of rising sales and to decrease in period of decreasing sales. Leverage is one of the tools used by the management to plan because a change in the independent variable leads to a predictable change in dependent variable.

Financial Leverage :

Also known as 'Leverage Factor', it shows the changes that take place in taxable income as a result of changes in operating income. It signifies the existence of fixed interest bearing securities in the capital structure of a company. In other words, it shows the use of the debt which pays a fixed return in the capital structure of a company. When in the capital structure of a company, debentures and preference share capital are greater as compared to equity capital, the leverage is said to be financial leverage. It represents the

ratio of the total debt to total assets. This leverage denotes the tendency of the profits to change on account of the existence of senior securities in the capital structure. It shows that any change in the company's earning power will be reflected in the proportionate increase in its return on the equity. It signifies that the relationship between the earning power on equity capital and the rate of interest on borrowed capital or debt. One of the most important methods of financial analysis is the calculation of the relative proportion of debt and equity in the company's financial structure. It is a process by which the rate of return on equity shares can be modified from what it would otherwise be by the use of debt and preference capital. In other words, when the rate of return on the investment by the equity shareholders is high, there is said to be 'favourable leverage'. On the other hand, where the company's earnings on an overall rate is less than the cost of capital, than it is said to be 'negative leverage.'

Financial leverage therefore denotes that profits and losses are affected by the existence of debt in the capital structure of a company. As financial leverage is the result of trading on equity, it signifies that a change in earning before interest and taxes (EBIT) results in a larger percentage of return on the equity shares. Therefore this kind of leverage highlights the changes that take place in income before tax. This represents the percentage change that takes place in the income as a result of the percentage change in operating income. The effect of this kind of leverage on the profits of a company has already been pointed out. How this leverage affects the operating income is illustrated by the following example :

Company 'A' has equity share capital of	Rs. 1,00,000
and 10% debenture of	Rs. 1,00,000
Company 'B' has equity capital of	Rs. 2,00,000
and no debenture debt.	

Company A has debt of 50 percent to total capital structure and hence it is said to employ financial leverage.

Company 'B' has no debt and as such, its debt to total capital structure is zero.

In company A which is a leverage company, the equity shareholders will get a higher rate of return on their capital if the profit earned by the company are more than Rs. 10,000 being debenture interest payable. Where in a particular year, the profits of a company A are less than Rs. 10,000, the return to the equity shareholders is reduced on account of unfavourable leverage.

The operating leverage and financial leverage are the two quantitative tools which are used to measure the returns to the owners, *viz.*, earning per share (EPS) and market price of the equity shares. Of the two tools, financial leverage is considered to be superior because it focuses attention on the market price of the shares and the management trying to increase the net present value of the equity shares. Under certain level of earnings, trading on equity is profitable for the equity shareholders. This is due to the fact that a company earns higher return on the employment of its assets than it pays on the debt. When there is increase in EBIT, there will be corresponding increase in the market price of equity shares.

As the EBIT increase, the price/earning ratio (P/ER) also increases because it increase in the times of interest earned on the equity shares. It should be noted that change in price/earning ratio has impact on trading on equity. But when a company used trading on equity on an increasing scale at a given level of EBIT, the price/earning ratio on the equity shares increases and the market price of the share also increases. Therefore with a given capital structure change in EBIT causes a relatively large change in other amounts.

When a company is trading on equity, any percentage decrease in EBIT will result in larger percentage decrease in earnings per share and in the market price per share. When in a company, the capital structure is different, the question arises to what extent of financial risk, the management should be prepared to take by trading on equity. This will lead to an increase the earnings per share. Two opposing factors will be in existence one to raise the price of the equity shares and the other to lower the price/earning ratio on the equity share. A balance of these two will have to be find out. The most important factor therefore in planning the source of capital mix depends upon the estimated level and estimated stability of EBIT.

It was also observed that financial leverage discloses the change taking place in the taxable income. The degree of this leverage represents the percentage change which is taking place in taxable income on account of a specified percentage change in the operating income. The fixed changes are included in the calculation of financial leverage is the interest charge or senior securities.

The formula for calculating the degree of financial leverage is given below :

$$\text{Degree of financial leverage at certain level of sales} = \frac{\text{Operating income}}{\text{Taxable income}}$$

$$= \frac{\text{EBIT}}{\text{Taxable income}}$$

In the example below we explained the theory, we had seen when sales are Rs. 330000 than the taxable income will be :

	Rs.
Sales	3,30,000
Less Variable expenses	1,10,000
	2,20,000
Less Fixed charges	1,00,000
EBIT	1,20,000
Less interest	50,000
Taxable income	70,000
Less Income-tax (@) 50%	35,000
EAT (Net income)	35,000

$$\text{The result is } \frac{\text{EBIT}}{\text{Taxable income}} = \frac{1,20,000}{70,000} = 1.8$$

Increase in operating income as compared to the sales of Rs. 1,00,000 is Rs. 20,000.

$$\text{Percentage increase } \frac{20,000 \times 100}{50,000} = 40\%$$

Taxable income increase = $1.8 \times 40 = 72$ percent.

	Rs.
Effect of leverage on EBIT of	1,00,000
EBIT	1,00,000
Less Interest	50,000
Taxable income	50,000
Less Tax@50%	25,000
EAT (Net income)	25,000

$$\frac{\text{EBIT}}{\text{Taxable income}} = \frac{1,00,000}{50,000} = 2$$

Effect of Leverage :

The effect of leverage on capital structure is important in finding the best proportion of debt and equity of funds. If the overall cost of capital structure of a company is minimum, then there is optimum capital structure in existence. The combination of debt and equity capital will have the maximum effect on the market value. Therefore it is important to note that if the debt ratio is high, it may result in speculative activities. This ratio must be used in conjunction with coverage ratio as an indication of the riskiness of investment.

Future Growth Rate of Sales is a measure of the extent to which the EPS are likely to be magnified by leverage. If sales and earnings increase, due to financing by debt with limited fixed charges should magnify the returns to the owners. The equity shares command a high price when sales and earnings increase at a favourable rate.

Where there is greater stability in sales and earnings, a company can meet the fixed charges of debt with less risk. When sales and earnings decline, it will be difficult for the company to meet its obligations when due.

The stability of profit margin is important. A growth in industry ensures higher profit margin but this margin is likely to be narrowed down if the industry is of a type in which the number of companies can be increased.

Example 1. **:** The capital structure of the progressive company consists of ordinary share capital of Rs. 10,00,000 (Rs. 100 per share)

and Rs. 10,00,000 of 10% debentures. Sales increased by 20% from 1,00,000 units to 1,20,000 units, the selling price is Rs. 10 per unit; variable cost amounts to Rs. 6 per unit and fixed expenses amount to Rs. 2,00,000. The income tax rate is assumed to be 50%.

You are required to calculate the following :

(i) The percentage increase in earnings per share;

(ii) The degree of financial leverage at 1,00,000 units and 1,20,000 units;

(iii) The degree of operating leverage at 1,00,000 units and 1,20,000 units.

Comment on the behaviour of operating and financial leverage in relation to increase in production from 1,00,000 units to 1,20,000 units.

Solution :

Statement showing percentage increase in EPS and the degree of operating and financial leverage :

	For 1,00,000 units	***For 1,20,000 units***
	Rs.	***Rs.***
Sales @ Rs. 10 per unit	10,00,000	12,00,000
Less Variable cost @ Rs. 6 per unit	6,00,000	7,20,000
Contribution	4,00,000	4,80,000
Less Fixed expenses	2,00,000	2,00,000
EBIT	2,00,000	2,80,000
Less interest 10% of 10,00,000	1,00,000	1,00,000
	Rs.	***Rs.***
EBT	1,00,000	1,80,000
Less Tax @ 50%	50,000	90,000
EAT	50,000	90,000
EPS	50,000	90,000
	10,000	10,000

Percentage increase in EPS	=	Rs. 5	Rs. 9
Operating leverage		$\frac{4}{5} \times 100 = 80\%$	
$\frac{\text{Contribution}}{\text{EBIT}}$	=	$\frac{4,00,000}{2,00,000}$	$\frac{4,80,000}{2,80,000}$
	=	2	1.71
Financial leverage			
$\frac{\text{EBIT}}{\text{EBT}}$	=	$\frac{2,00,000}{1,00,000}$	$\frac{2,80,000}{1,80,000}$
	=	2	1.55

Decrease in both the leverage indicates that there is decrease in business risk.

Example 2 : The selected financial data for A, B and C companies for the year ended December 31, 2007 are as follows :

	A	*B*	*C*
Variables expenses as a percentage of sales	66-2/3	75	50
Interest expenses	Rs.200	Rs.300	Rs.1,000
Degree of operating leverage	5—1	6—1	2—1
Degree of Financial leverage	3—1	4—1	2—1
Income tax rate	.50	.50	.50

(a) Prepare income statements for A, B and C companies.

(b) Comment on the financial position and structure of these companies.

Solution :

Income statement for A, B and C companies for the year ended December 31, 2007.

	A	*B*	*C*
	Rs.	*Rs.*	*Rs.*
Sales	4,500	9,600	8,000
Less Variable costs	3,000	7,200	4,000
Contribution	1,500	2,400	4,000

Less Fixed costs	1,200	2,000	2,000
EBIT	300	400	2,000
Less Interest	200	300	1,000
EBT	100	100	1,000
Less Tax 10%	50	50	500
EAT	50	50	500

Working Notes :

1. *Financial leverage :*

$\frac{EBIT}{EAT}$	A	B	C
	$\frac{3}{1}$	$\frac{4}{1}$	$\frac{2}{1}$

Verification in taxable income :

$$(54,000 - 40,000) = \frac{14,000 \times 100}{40,000} = 35\%$$

(3) Degree of financial leverage if EBIT increase by 6%

$$\frac{EBIT}{\text{Taxable income}} = \frac{40,000}{35,000} = 1.15$$

If EBIT increase by 6 percent, taxable income will increase by $1.1 \times 56 = 6.9$ percent.

Working :	***Rs.***
EBIT	40,000
Add 6%	2,400
	42,400
Less Interest	5,000
Taxable income	37,400

$$\text{Increase } (37,400 - 35,000) = \frac{2,400 \times 100}{35,000} = 6.9 \text{ percent.}$$

Leverage Ratios

Purposes :

Leverage ratios are used to measure the contribution of the shareholders as compared to funds provided by loan creditors. These

ratios have great significance as they measure the extent in which the company has been financed by debt. It has already been pointed out that loan creditors look to the equity shareholders or owner supplied funds to provide margin of safety (buffer). If the owners have provided a low proportion of finance, the risks are mainly to be borne by the loan creditors. If the earnings are more on the borrowed funds than the interest paid to them, the return to the owners is high and if the earning are lower than the interest payable, the equity shareholders should make good from this deficiency.

1. ***Debt-Ratio or Debt-to-Total Assets :*** This ratio measures the percentage of the total funds given by the creditors. Debt includes current liabilities also. The creditors would prefer a moderate debt ratio because lower the rate, the greater will be the safety against the losses to the creditors, in the event of liquidation. On the other hand, the owners, *viz.*, the equity shareholders would prefer a higher ratio because the earnings may be increased because of the issue of new shares resulting in giving up the control of the business to some extent. It should be noted that if the debt-ratio is too high, there is also the danger of irresponsibility on the part of the equity shareholders. If the ratio is high, it will be difficult for the company to raise additional funds, without raising additional equity capital at the outset. The loan creditors would not be willing to lend additional loans and thereby subjecting the owners with dangers if the debt is raised.

2. ***Times Interest Earned :*** This ratio is determined by dividing the profit before interest and taxes—EBIT—by interest charges. This measures the extent to which the company is able to meet its annual interest charges.

$$\text{Formula : } \frac{\text{Profit before interest and taxes}}{\text{Interest charges}}$$

$$\text{or } \frac{\text{EBIT}}{\text{Interest}}$$

The result will be the number of times the interest charges are covered. This is also called 'coverage ratio'. If the number of times is less than the industry average, it shows the company is covering

only with the bare minimum of margin of safety. This must be examined in conjunction with the debt-ratio. The ratio therefore measures the extent to which the earnings will be reduced without affecting the fixed interest charges. The reason why the profits before interest and tax are used in determining this ratio is that the liability for income-tax is calculated only after deducting interest charges.

3. ***Fixed Charges Coverage :*** This ratio is determined by dividing the income before fixed charges by the total fixed charges. This ratio serves as supplement to the times interest earned because it discloses the financial problems that may arise by nonpayment of fixed interest charges.

$$\text{Formula : } \frac{\text{Income before fixed charges}}{\text{Fixed charges}}$$

If the ratio is less than the industry average it shows that it is not possible for the company to resort to further borrowings. According to J.F. Weston, fixed charges will include interest, lease payments and sinking fund payments. When sinking fund payments are made annually relating to debentures they are not deductions for income-tax computation. Therefore the company should earn sufficient profits after payment of tax to enable the company to make annual sinking fund payments.

4. ***Price/earning Ratio*** (P/E Ratio) shows the relationship between the market price of the share to the earnings per equity share. This is calculated as under :

Market price per share	Rs.150
Earning per share	Rs. 5

$$\frac{\text{Market price}}{\text{Earning per share}} = \frac{150}{5} = 30$$

If the price earning ratio is high, it shows that the earning per share will increase. On the other hand, if the ratio decreases, it means that there is no possibility of increase in the earning per share. The investors will be reluctant to invest in such shares. It should be noted that price/earning ratio differs from business to business. This ratio is very important from the view point of the

investors for every day of securities. A high or low ratio will signify that the prices of shares are high or low in relation to the recent earnings as the case may be. An intelligent investor will correlate the current market price to future earnings per share because the ultimate position of share value depends on future earnings per share also.

5. ***Pay-out Ratio :*** It shows the percentage of profits available for equity shareholders which is paid as cash dividends to them.

$$\text{The formula is : } \frac{\text{Dividend per share}}{\text{Earning per share}}$$

This is an important ratio that shows the cash dividend policy of the management because it reflects the amount reinvested in the business which will have effect on the future market price of the share.

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18

RATIO ANALYSIS AND FINANCIAL STATEMENTS

Ratio analysis is an important and useful tool to check upon the efficiency with which working capital is being used in the enterprise. Some ratio indicate the trend or progress or downfall of the company. It helps the financial manager in evaluating the financial position and performance of the company. The use of ratio analysis is not confined to the financial manager only. The credit supplier, bank, lending institutions and experienced investor all use ratio analysis as their initial tool in evaluating the company as a desirable borrower or as potential investment outlet. It functions as a sort of health test. With the help of ratio analysis financial executive can measure whether the company is at present financially healthy or not. The following are the important material uses of ratio analysis.

(A) Aid in Financial Forecasting : Ratio analysis is very helpful in financial forecasting. Ratios relating to past sales, profits and financial position are base for future trends.

(B) Aid in Comparison : With the help of ratio analysis ideal ratios can be composed and they can be used for comparison of a particular company's progress and performance.

(C) Aid in Cost Control : Ratios are very useful for measuring the performance and very useful in cost control.

(D) Communication Value : Different financial ratios communicate the strength and financial standing of the company to the internal and external parties.

(E) Other Uses : Financial ratios are very helpful in the diagnosis and financial health of a company. They highlight the liquidity, solvency, profitability and capital gearing, *etc.* of the company. They are a useful tool of analysis of financial performance.

Classification of Ratios :

Ratios can be classified on the following two important basis :

1. ***According to Financial Statements :*** According to this basis, the ratios are classified as follows :

(i) Balance Sheet Ratios : These ratios are calculated to know the financial position of a company on a particular date. Both items for which ratio is to be calculated appear on the balance sheet. Such a ratio may be called a financial ratio. Example of balance sheet ratios are - current ratio, quick ratio, liquidity ratio, ratio of inventory to working capital, ratio of current assets to fixed assets, debt to equity ratio, proprietary ratio and capital gearing ratio.

(ii) Profit and Loss Ratios : Ratios which are drawn from trading and profit and loss account are known as profit and loss ratios. These ratios deal with the relationship between two items both of which belong to the profit and loss account. Such a ratio may be called an operating ratio. Examples of these ratios are—Gross profit ratio, Operating ratio, Operating profit ratio and net profit ratio.

(iii) Combined Ratios : These ratios shows the relationship between items, one of which is a part of the balance sheet and the other of the profit and loss account. Such a ratio may be called a mixed ratio. Examples of these ratios are—Stock turnover ratio, Receivable turnover ratio, Working capital turnover ratio, Fixed assets turnover ratio, Capital turnover ratio, Total assets turnover ratio, Return on shreholders, Investment and Return on capital employed.

2. ***According to Purpose or Functional Classification :*** On the basis of purpose, ratios can be grouped into the following four categories :

(i) ***Profitability Ratios :*** A measure of 'profitability' is the overall measure of efficiency. Under profitability ratios, following ratios should be studied to judge the profitability of a company.

- ***Gross Profit Ratio (GPR) :*** It expresses the relationship of gross profit on sales to net sales, in terms of percentage, representing the percentage of gross profit earned on sales. The ratio is arrived at as follows :

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

Example : Where a business effects net sales of Rs. 1,26,900 and the cost of goods sold by it is Rs. 71,000 the gross profit ratio would be :

$$\text{Gross Profit Ratio} = \frac{\text{Rs. 126900 - Rs. 71000}}{\text{Rs. 126900}} \times 100$$

$$= \frac{\text{Rs. 55,800}}{\text{Rs. 1,26,900}} \times 100$$

$$= 44 \text{ percent.}$$

- ***Operating Ratio :*** This ratio shows the relationship between total cost of goods sold and sales. It is calculated as follows;

$$\frac{\text{Cost of Goods Sold + Operating expenses}}{\text{Net Sales}} \times 100$$

The important components of this ratio are :

(a) Cost of goods sold = Opening stock + Purchases + Manufacturing expenses—Closing Stock or Sales Gross profit.

(b) Operating expenses = Office and administrative expenses and selling and distribution expenses.

Example : Cost of goods sold as well as operating expenses of M/s Shyam Lal & sons are Rs. 6,00,000 and Rs. 1,00,000 respectively. Their net sales amounted to Rs. 80,000 the operating ratio expressed in terms of percentage would be :

$$\text{Operation Ratio} = \frac{\text{Rs. } 6,00,000 + \text{Rs. } 1,00,000}{\text{Rs. } 80,000} \times 100$$

$$= \frac{\text{Rs. } 3,50,000}{\text{Rs. } 80,000} \times 100$$

$$= 87.5 \text{ percent.}$$

It will be more informative to analyse the operating ratio by working out the ratios of :

(1) Material Consumed Ratio :

$$= \frac{\text{Material Consumed}}{\text{Net Sales}} \times 100$$

(2) Labour to Sales Ratio :

$$= \frac{\text{Wages}}{\text{Net Sales}} \times 100$$

(3) Office of Administrative Expenses Ratio :

$$= \frac{\text{Office and Administration Expenses}}{\text{Net Sales}} \times 100$$

(4) Selling and Distribution Expenses Ratio :

$$= \frac{\text{Selling and Distribution Expenses}}{\text{Net Sales}} \times 100$$

- ***Operating Profit Ratio :*** This ratio shows the relationship between operating profit and sales and is calculated as follows :

$$\text{Operating Profit Ratio} = \frac{\text{Operating Profit}}{\text{Net Sales}} \times 100$$

The important components of this ratio are :

(a) Operating Profit = Gross Profit – Operating Expenses.

(b) Operating Profit Ratio = 100 – Operating Ratio.

- ***Net Profit Ratio :*** This is the ratio of net income or profit after taxes to net sales. This ratio is very useful to the

proprietors because it reveals the overall efficiency of the business. The ratio is arrived at as follows :

$$\text{Net Profit Ratio} = \frac{\text{Net Profit after Taxes}}{\text{Net Sales}} \times 100$$

(b) ***Liquidity Ratios :*** These ratios, constituting ratio analysis of the short-term financial position, are intended to derive a picture of the capacity of a company to meet its short-term obligations out of its short-term resources. Some of the important liquidity ratios are as follows :

(i) ***Current or Working Capital Ratio :*** This is the ratio of the current assets to the current liabilities of a business at any time. The ratio is usually taken at the end of a financial year when all the required figures can be collected after they have been thoroughly examined. It is expressed as follows:

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

The ratio should preferably be 2 : 1. If the current assets are two times the current liabilities, there will be no adverse effect on business operations when the payment of current liabilities is made.

(ii) ***Quick Ratio :*** This is the ratio of liquid assets to current liabilities. 1 to 1 ratio is considered ideal ratio for company. This ratio is of great importance for banks and financial institutions. This ratio is also known as Acid Test Ratio or Liquid Ratio. It is worked out as follows :

$$\text{Quick Ratio and Acid Test Ratio} = \frac{\text{Liquid or Quick Assets}}{\text{Liquid or Quick Liabilities}}$$

Liquid assets are those assets which are readily converted into cash and will include cash, cash at bank, bills receivables, sundry debtors and short term investments.

(iii) ***Debtors Turnover Ratio :*** This ratios also known as Receivable Turnover Ratio measures the accounts

receivables (trade debtors and bills receivables) in terms of number of days of credit sales during a particular period. This ratio is calculated as follows :

$$\text{Debtor Turnover Ratio} = \frac{\text{Trade Debtors + Bills Receivable}}{\text{Net Credit Sales}} \times \text{No. of Days in a period}$$

(iv) ***Stock or Inventory Turnover Ratio :*** It shows the relation ship between cost of goods sold during a given period and the average stock of goods in hand during that period. This ratio can be calculated as follows :

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average stock held}}$$

(a) Cost of Good sold = Opening Stock + Purchases – Closing Stock or Sales – Gross Profit

$$\text{(b) Average Stock} = \frac{\text{Opening Stock + Closing Stock}}{2}$$

(c) ***Solvency Ratios :*** Solvency means the ability of the company to meet its long-term liabilities.

These ratios are studied to measure the long-term solvency and comprise of :

(i) ***Debt to Equity Ratio :*** This ratio reflects the proportionate relationship between outsider's Funds' and Shareholders' funds. It relates to all recorded creditors' claims on assets to the owners, recorded claims in order to measure the company's obligations to creditors in relation to funds provided by the owners. It is also known as "External Internal Equity Ratio and is calculated as follows :

$$\text{Debt to Equity Ratio} = \frac{\text{External Equity}}{\text{Internal Equities}}$$

or

$$\text{Debt to Equity Ratio} = \frac{\text{Outsiders' Funds}}{\text{Shareholders Funds}}$$

Outsiders' Funds include all long-term debts, while shareholders funds consist of Preference Share Capital, equity share capital and all types of reserves.

(ii) ***Proprietary Ratio :*** A variant of debt to equity ratio is the proprietary ratio which establishes the relationship between proprietors funds and total assets. The ratio is worked out as follows :

$$\text{Proprietary ratio} = \frac{\text{Shreholders' Funds}}{\text{Total Assets}}$$

(iii) ***Creditors' Equity to Total Equities :*** This ratio is calculated to find out the proportion of outsiders' equity in the total equities. This can be calculated with the help of the following formula :

$$\text{Creditors' Equity to Total Equities} = \frac{\text{Creditors' Equity}}{\text{Total Equities}}$$

(d) ***Over-all Ratios :*** These ratios are also known as 'Test of overall profitability'. Under this, we shall study the following ratios :

(i) ***Return on Investment :*** The ratio shows how much company is earning on its capital employed. Return on Investment or Return on Capital Employed can be ascertained with the help of the following formula :

$$\text{Return on Investment} = \frac{\text{Profit before Tax}}{\text{Capital Employed}} \times 100$$

(ii) ***Return on Equity Capital :*** Another aspect to be considered in the analysis of over-all profitability is the Rate of Return on Equity Capital which relates to the net profits available to equity shareholders to the amount of capital invested by them.

Another way of looking at the rate of return on equity capital is to divide the net profit available to equity shareholders by the number of outstanding equity shares in order to calculate earnings per equity share. This ratio is calculated with the help of the following formula :

Rate of Return of Equity Capital

$$= \frac{\text{Net Profit - Dividend due to Preference Shares}}{\text{Number of Equity Shares}}$$

= Earnings per Equity Share

(iii) Divided Per Share and Pay-out Ratio : The pay-out ratio shows the proportion of earnings which has been paid out to the equity shareholders out of the total earnings available to them. This is calculated with the help of the following formula :

$$\text{Dividend per share} = \frac{\text{Account of Dividend Paid}}{\text{Number of Equity Shares}}$$

$$\text{Pay-out Ratio} = \frac{\text{Amount of Dividend Paid on Equity Shres}}{\text{Amount of Total Earnings Available for Distribution Among Equity Shares}}$$

Limitations of Ratio Analysis :

1. *A Single Ratio has no Significance :* A ratio taken by itself would be meaningless unless it is studied along with other ratios. Ratios of one company should be compared with ratios of other such similar companies and any deviations should be investigated.

2. *It Ignores Qualitative Factors :* They are the factors which can not be expressed in terms of money. Ratio analysis is a tool of quantitative analysis and does not take account of qualitative factors like sincerity, ability to pay back loans *etc.*, which may sometimes be of more importance in taking financial decisions.

3. *Lack of Proper Standard for Comparison :* Since business companies differ from one another in capital structure, financial problems, size *etc.*, a standard fixed for one company may not be suitable to other companies.

4. *Reveals More About Past :* Balance Sheet and profit and Loss Account are historical statements because they are prepared on the basis of the event and transactions that have already taken place. Ratios are calculated from these historical statements and

thus they give the idea of the happening of the past rather than the future which is more important.

5. ***Fraction of Information :*** Information received from the ratio analysis should always be used in conjunction with the informations received from other sources because this ratio analysis provides only a fraction of information required for decision making.

6. ***Illusionary Precision :*** Ratio analysis may attach some precision to the arithmetical results of the accounting data because of their numerical character. But these datas are more estimates *e.g.*, estimates regarding the life of an asset, provision for doubtful debts *etc.*

Financial statements of a company (Trading Account, Profit and Loss Account and balance Sheet *etc.*) do not covey to the reader the real significance of the operating result and financial health of the business. Ratio analysis is one of the tools that make such statements more meaningful.

Ratio broadly speaking, is the numerical relationship between two numbers. In other words ratio is simply one number expressed in terms of another, it is an expression of relationship spelt out by dividing one figure into another. For example if the current assets on a particular date are Rs. 3,00,000 while the current liabilities are Rs. 1,00,000 the resulting ratio would be $\frac{3,00,000}{1,00,000}$ *i.e.* 3 : 1. Sometimes these simple ratios all multiplied by 100 and converted 300% of current liabilities.

Ratio analysis means the process of determining and presenting the relationship of items and groups of items in the financial statements.

Important Ratios :

1. ***Current Ratio :*** It is also called Working Capital Ratio and Balance Sheet Ratio. It expresses the relationship between two items taken from balance sheet. It is calculated as :

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

Components : Current Assets usually include cash in hand, cash at bank, sundry debtors, work-in-progress, inventories and prepaid expenses. Current liabilities include sundry creditors, bills payable, income tax payable, bank overdraft and outstanding and accrued expenses.

There are two opinions about the treatment of bank overdraft. In many cases overdraft arrangement with a bank are more or less permanent and, therefore, it is contended that overdraft should be treated as long-term liability to be excluded from the purview of current ratio. According to the second opinion, this overdraft is a mere facility given by the bank and which can be cancelled by the bank at any time. Therefore, it is advisable it include bank overdraft in current liabilities.

Precautions : In determining this ratio it is important that all current assets and current liabilities should be properly valued otherwise this current ratio will, unnecessarily, be inflected or reduced. Therefore, reserves and other accounts related to the valuation of current assets are deducted from the total current assets.

Example :

Balance Sheet

	Rs.			*Rs.*
Creditors	6,000	Cash		5,000
Bills Payable	5,000	Investments		15,000
Bank Overdraft	5,000	Bills Receivable		5,000
Outstanding Expenses	1,000	Debtors	22,000	
Income Tax Payable	13,000	Less : Reserve	2,000	
				20,000
		Inventories		30,000
		Work-in-progress		15,000
	30,000			*90,000*

Current Ratio would be $\frac{90,000}{30,000} = 3 : 1$

This means for every Re. 1 worth of current liabilities there are current assets worth Rs. 3. The minimum of 2 : 1 ratio is often referred to as a banker's rule of thumb standard of liquidity for a business.

Significance : This ratio in rough fashion, shows whether a company can meet its short-term financial obligations easily and whether the working capital is being utilised efficiently or not. Surplus or current assets over current, liabilities is referred to as working capital. When compared over a number of years it indicates whether short term financial position is improving or deteriorating.

2. ***Acid Test Ratio or Liquid Ratio or Quick Ratio :*** This ratio expresses the relationship between liquid assets and liquid liabilities. This ratio supplements the information given by current ratio. It is calculated as :

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

Comments : Liquid assets would include cash, sundry debtors (after providing for doubtful debts) and securities which can be converted into cash without difficulty. Liquid liabilities refer to current liabilities less bank overdraft *i.e.*, sundry creditors bill payable, and outstanding or accrued expenses. But on basis of conservation some prefer to include bank overdraft in the liquid liabilities.

Inventories are excluded from the current assets for the purpose of calculating this ratio because realisation of cash from inventories takes time and shrouded with difficulty and thus short term creditors have to depend on cash in hand and collections from bills receivable and debtors for payments.

Precautions : All the precautions which are necessary in the calculation of the current ratio have also to be observed in case of this ratio.

Example :

In the example of current ratio given earlier, the liquid assets would amount to Rs. 45,000 and liquid liabilities to Rs. 25,000 (Bank overdraft is excluded) so the Acid Test Ratio would be :

$$= \frac{\text{Rs. } 45{,}000}{\text{Rs. } 25{,}000} \textit{ i.e., } 1.8 : 1$$

It shows that for liquid liabilities worth Re. 1, these are liquid assets worth Rs. 1.8. The company can easily pay its quick liabilities.

Significance : In Acid Test Ratio rule of thumb is 1 : 1 *i.e.*, if a business has quick ratio of atleast 100% it is considered to be in a fairly good financial position. This ratio is more rigoros test of liquidity than current ratio because it eliminates inventories from the current assets. When this ratio is used in conjunction with current ratio it gives a better picture of the company's ability to meet its short-term obligations.

3. ***Stock Turnover Ratio of Inventory Turnover Ratio :*** This ratio establishes the relationship between the cost of the goods sold during a given period and the average amount of inventory outstanding during that period. This can be calculated by one of the three following formulas :

(i) $\dfrac{\text{Cost of Goods Sold}}{\text{Average Inventory at Cost}}$

(ii) $\dfrac{\text{Net Sales}}{\text{Average Inventory at Cost}}$

(iii) $\dfrac{\text{Net Sales}}{\text{Average Inventory at Selling Price}}$

Components : This ratio can best be expressed by the first method but when cost of goods sold is not available, second method or the third method is used.

Cost of goods sold is calculated as :

Sales – Gross Profit = Cost of goods sold.

Or

	Rs.
Opening Stock	...
Add : Purchases	...

Add : Trading Expenses		...
	Total	...
Less : Closing Stock		...
Cost of Goods sold	Rs.	...

Average Inventory

$$= \frac{\text{Opening Inventory + Closing Inventory}}{2}$$

For greater accuracy in the calculation of this ratio monthly inventories should be used. Where inventories fluctuate substantially in the course of the year, use of monthly inventories is treated far better.

Example :

If the cost of goods sold for S.K. Ltd. is Rs. 3,00,000 and the average inventory is Rs. 30,000, the stock turnover ratio would be

$$= \frac{\text{Rs. 3,00,000}}{\text{Rs. 30,000}} = 10 \text{ times}$$

Significance : This ratio helps in determining the liquidity of the company as it gives the rate at which inventories are converted into sales and then into cash. This ratio helps the financial manager in evaluating the inventory policy to avoid any danger of overstocking or understocking.

A low inventory turnover ratio may reflect dull business, over investment in industry, accumulation of merchandise at the end of the period in anticipation of higher prices. A high stock turnover ratio is favourable high turnover ratio may not always be accompanied by a relatively high income as profits may be sacrificed in obtaining large volume of sales. So great care should be taken in analysing this ratio and on straight conclusion should be drawn from high or low turnover ratio because it would be misleading.

4. ***Debtor's Turnover Ratio or Receivable Turnover Ratio :*** This ratio establishes the relationship between the recorded trade debtors and net credit sales of a company. It indicates the rate at which cash is generated by turnover of receivable or debtors.

It is calculated as :

$$\text{Debtor's Turnover Ratio} = \frac{\text{Trade Debtors}}{\text{Sales per day}} \quad \ldots \text{(i)}$$

$$\text{Sales per day} = \frac{\text{Net Sales}}{\text{No. of working days}} \quad \ldots \text{(ii)}$$

Average Collection period

$$= \frac{\text{Sundry Debtors + Bill Receivables}}{\text{Not credit sales}} \times \text{No. of working days}$$

Components : The trade debtors in this ratio also include bills receivables at the end of the accounting period. Moreover, debtors which do not arise from the regular sales should be excluded, *e.g.* a bill receivable received the buyer of fixed asset. Another important point is that reserve of doubtful debts is not deducted from the total amount of debtors. If it not possible to break up the total sales into cash and credit sales, the total sales taken for the calculation of the ratio. This will be overstated to the extent cash sales are included.

Example :

If the net sales for a year were Rs. 3,65,000 and the amount of debtors at the end of the year Rs. 60,000 turnover ratio would be :

$$\text{Sales per day} = \frac{\text{Rs. } 3,65,000}{365} = \text{Rs. } 1,000$$

$$\text{Debtors' Turnover Ratio} = \frac{60,000}{1,000} = 60 \text{ days.}$$

Significance : This ratio enables us to find out as to how many day's average sales are tied up on the amounts due on debtors and how old accounts are. The amount of trade debtors depends on the

volume of sales, credit and collection policy of a business company. For better results is should be compared over a period of time.

Expenses Ratio :

There is a very important relationship existing between operating expenses and volume of sales, expenses ratios are calculated by dividing net sales into each individual operating expenses (selling, administrative and general expenses) showing the portion of net sales revenue which is consumed by various operating expenses. These ratios, which represent a summation of changes in net sales and in the expenses items, are valuable in comparing similar business or operating data from year to year.

These ratios are broken up into the following important categories :

(a) Material Consumed Ratio

$$= \frac{\text{Material Consumed}}{\text{Net Sales}} \times 100$$

(b) Conversion Cost Ratio

$$= \frac{\text{Labour + Manufacturing Expenses}}{\text{Net Sales}} \times 100$$

(c) Office and Administrative Expenses Ratio

$$= \frac{\text{Office and Administrative Expenses}}{\text{Net Sales}} \times 100$$

(d) Selling and Distribution Expenses Ratio

$$= \frac{\text{Selling and Distribution Expenses}}{\text{Net Sales}} \times 100$$

The total of all these ratios will be equal to the operating ratio.

Operating Ratio :

This ratio establishes the relationship between cost of goods sold + operative expenses and net sales.

It is calculated as :

$$\text{Operating Ratio} = \frac{\text{Cost of goods sold + Operating Expenses}}{\text{Net Sales}}$$

Components : Cost to goods sold and net sales have already been explained. Operative expenses include the following :

(a) Selling and Distribution Expenses–Salaries to salesman, advertisement and travelling expenses *etc.*

(b) Financial Charges – Interest, discount and bad debts *etc.*

(c) Administrative Expenses – Rent, insurance, salaries of office clerks, directors' fees and legal expenses *etc.*

Example :

If the cost of goods sold as well as operating expenses of a company are Rs. 80,000 and Rs. 28,000 respectively and the net sales amounted to Rs. 1,20,000 the Operating Ratio would be :

$$\text{Operating Ratio} = \frac{80{,}000 + 28{,}000}{1{,}20{,}000} \times 100 = 90\%$$

Significance : This ratio shows the extent to which returns from sale are absorbed by the cost of goods sold and operating expenses. The higher the operating ratio the less favourable it is because little will be left to meet interest, dividend and other corporate needs.

Gross Profit Ratio :

This ratio matches the gross profit on sales to net sales. This ratio is usually calculated in percentages. It is calculated as :

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

Components : Gross Profit is obtained from the trading account. It is the difference of sales and cost of goods sold. Net sales are obtained after reducing the amount of sales returns from total sales. Cost of goods include purchase price of raw material and all expenses till the finished goods are ready for sale.

Example :

Net sales of company are Rs. 1,00,000 and cost of goods sold is Rs. 80,00, the Gross Profit Ratio would be :

$$\text{Gross Profit Ratio} = \frac{\text{Rs. } 20{,}000}{\text{Rs. } 1{,}00{,}000} \times 100 = 20\%$$

Significance : This ratio helps us to know whether a company has sufficient gross profit to cover all operating expenses and to give for dividends and reserves *etc.* The information received from this ratio becomes more clear and meaningful if information about company's purchase policies, credit and collection policies is available.

Higher the ratio the better it is. A low ratio indicates unfavourable trend.

Example :

The following are the summarized Profit and Loss Account of N.K. Industries Limited for the year ended 31 December, 2005 and a Balance Sheet of the Company as on that date :

Profit and Loss Account

	Rs.		*Rs.*
To Opening Stock	9,950	By Sales	85,000
" Purchase	54,525	" Closing Stock	14,900
" Carriage Inwards	1,425		
" Gross Profit	34,000		
	99,900		*99,900*
To Office Expenses	15,000	By Gross Profit	34,000
" Selling Expenses	3,000	" Profit on Sale of Shares	600
" Financial Expenses	1,500	" Interest on Investments	300
" Loss on Sale of an Asset	400		
" Net Profit	15,000		
	34,900		*34,900*

Balance Sheet

	Rs.		*Rs.*
Share Capital :		Land and Building	15,000
2,000 Equity Shares of		Plant	8,000
Rs. 10 each	20,000	Stock	14,000
Reserves	9,000	Debtors	7,000
Profit and Loss Account	6,000	Bills Receivable	1,000
Bank Overdraft	3,000	Cash and Bank Balance	3,000
Sundry Creditors	8,000		
Outstanding Expenses	2,000		
	48,000		*48,000*

Calculate the following ratios :

(i) Gross Profit Ratio;

(ii) Debt-Equity Ratio;

(iii) Liquid Ratio; and

(iv) Fixed Assets Turnover Ratio;

(v) Current Ratio;

(vi) Operating Ratio;

(vii) Stock Turnover Ratio; and

(viii) Returns on Total Resources.

Solution :

(i) Gross Profit Ratio :

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

$$= \frac{\text{Rs. } 34{,}000}{\text{Rs. } 85{,}000} \times 100 = 40\%$$

(ii) Debt to Equity Ratio :

$$\text{Debt to Equity Ratio: } = \frac{\text{Outsider's Funds}}{\text{Shareholder's Funds}} \times 100$$

$$= \frac{\text{Rs. } 13{,}000}{\text{Rs. } 35{,}000} = 0.37$$

(iii) Liquidity Ratio :

$$\text{Liquidity Ratio} = \frac{\text{Quick Assets}}{\text{Quick Liabilities}} \times 100$$

$$= \frac{\text{Rs. } 11{,}000}{\text{Rs. } 10{,}000} = 1.1$$

(iv) Fixed Assets Turnover Ratio :

$$\text{Fixed Assets Turnover} = \frac{\text{Net Sales}}{\text{Fixed Assets}}$$

$$= \frac{\text{Rs. } 85{,}000}{\text{Rs. } 23{,}000} = 3.7 : 1$$

(v) Current Ratio :

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

$$= \frac{\text{Stock Sundry Debtors} + \text{Bills Receivable} + \text{Cash}}{\text{Current Liabilities}}$$

$$= \frac{\text{Rs. } 14{,}000 + 7{,}000 + 1{,}000 + 3{,}000}{\text{Rs. } 13{,}000}$$

$$= \frac{\text{Rs. } 25{,}000}{\text{Rs. } 13{,}000} = 1.923 : 1.$$

(vi) Operating Ratio :

$$\text{Operating Ratio} =$$

$$= \frac{\text{Cost of goods sold} + \text{Operating Expenses}}{\text{Net Sales}} \times 100$$

$$= \frac{\text{Rs. } 51{,}000 + 19{,}500}{\text{Rs. } 85{,}000} \times 100$$

$$= \frac{\text{Rs. } 70{,}500}{\text{Rs. } 85{,}000} \times 100 = 83\% \text{ or } .83 : 1$$

(vii) Stock Turnover Ratio :

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average Inventory}}$$

$$= \frac{\text{Rs. } 51{,}000}{\text{Rs. } 12{,}425} = 4.1 : 1.$$

$$\text{Average Inventory} = \frac{\text{Opening Stock} + \text{Closing Stock}}{2}$$

$$= \frac{\text{Rs. } 9{,}950 + 14{,}900}{2} = \text{Rs. } 12{,}425$$

(viii) Return on Total Resources Ratio :

$$\text{Stock Turnover Ratio} = \frac{\text{Net Profit}}{\text{Total Assets}} \times 100$$

$$= \frac{\text{Rs. } 15{,}000}{\text{Rs. } 48{,}000} \times 100$$

$$= 31\% \text{ or } 31 : 1.$$

Example :

Current ratio 2.5 : Working Capital Rs. 60,000. Calculate the amount of current asset and current liabilities.

(i) Opening Stock Rs. 29,000; Closing Stock Rs. 31,000; Sales Rs. 3,20,000; Gross Profit 25% on Sales. Calculate Stock Turnover Ratio.

Solution :

Calculation of current assets and liabilities :

Current Assets – Current Liabilities = Working Capital.

$\therefore$ $2.5 - 1 = \text{Rs. } 60{,}000$

$\therefore$ $1.5 - 1 = \text{Rs. } 60{,}000$

... $1 = \text{Rs. } 40{,}000$

Thus current liabilities are Rs. 40,000

Current Assets = Working Capital + Current Liabilities

$\therefore$ Rs. 1,00,000 = Rs. 60,000 + Rs. 40,000

Thus, current liabilities are Rs. 1,00,000

(ii) Stock of Turnover Ratio :

$$\text{Stock of Turnover Ratio} = \frac{\text{Cost of Sales}}{\text{Average Inventory}}$$

$$= \frac{\text{Rs. 2,40,000}}{\text{Rs. 30,000}} = 8 \text{ Times.}$$

Cost of Sales = Sales – Gross Profit

$$= \text{Rs. 3,20,000} - \frac{25}{100} \times \text{Rs. 3,20,000}$$

$$= 2,40,000$$

$$\text{Average Inventory} = \frac{\text{Opening Stock + Closing Stock}}{2}$$

$$= \frac{\text{Rs. 29,000 + Rs. 31,000}}{2} = \text{Rs. 30,000}$$

Example :

(a) Current Liabilities of a company are Rs. 3,00,000. Its current Ratio is 3 : 1 and Quick Ratio is 1 : 1. Calculate the value of stock in trade.

(b) From the following Balance Sheet of S.K. Ltd. as on 31st December, 2007, you are required to comment on (i) the liquidity and (ii) solvency reatios of the company :

Liabilities	*Rs.*	*Assets*	*Rs.*
Share Capital	5,00,000	Fixed Assets	6,00,000
Long term Liabilities	2,50,000	Current Assets	4,00,000
Current Liabilities	2,50,000		
	10,00,000		10,00,000

Solution :

(a) Current Liabilities = Rs. 3,00,000

Current Ratio = 3 : 1

Current Assets will be = Rs. 9,00,000

Quick Ratio = 1 : 1

Liquid Assets = Rs. 3,00,000

Stock = Current Assets – Liquid Assets

= 9,00,000 – 3,00,000

= Rs. 6,00,000.

Stock :

(b) (i) Liquidity Ratio : $= \frac{\text{Liquid Asset}}{\text{Current Liabilities}}$

$= \frac{4,00,000}{2,50,000} = 8 : 5$

(ii) Solvency Ratio : $= \frac{\text{Total Liabilities}}{\text{Total Assets}} \times 100$

$= \frac{5,00,000}{10,00,000} \times 100 = 8 : 5$

$= 50\%.$

Example :

(a) Gross Profit Ratio,

(b) Net Profit Ratio,

(c) Inventory Turnover Ratio, and

(d) Current Ratio.

	Rs.		*Rs.*
Sales	25,20,000	Debts (long-term)	9,00,000
Cost of Sales	19,20,000	Current Liabilities	6,60,000
Net Profit	3,60,000		
Average Inventory	8,00,000		

Other Current Assets	7,60,000
Fixed Assets	14,40,000
Net Worth	15,00,00

Solution :

(a) Gross Profit Ratio :

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

$$= \frac{\text{Rs. } 6,00,000}{25,20,000} \times 100$$

$$= 23.81\%$$

$$\text{Gross Profit} = \text{Sales} - \text{Cost of Sales}$$

$$= \text{Rs. } 25,20,000 - \text{Rs. } 19,20,000$$

$$= \text{Rs. } 6,00,000$$

(b) Net Profit Ratio :

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

$$= \frac{\text{Rs. } 3,60,000}{25,20,000} \times 100$$

$$= 14.28\%$$

(c) Inventory Turnover Ratio :

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

$$= \frac{\text{Rs. } 19,20,000}{\text{Rs. } 8,00,000}$$

$$= 2.4 \text{ times}$$

(d) Current Ratio :

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

$$= \frac{\text{Rs. } 7,60,000 + 9,00,000}{6,00,000}$$

$$= \frac{\text{Rs. } 16,60,000}{6,00,000} = 2.77 : 1$$

Example :

(i) From the following calculate the Debt-Equity Ratio :

		Rs.
Equity Share Capital :		
10,000 Equity Shares of Rs. 10 each :		1,00,000
General Reserves	...	45,000
Accumulated Profits	...	30,000
Debentures	...	75,000
Sundry Trade Creditors	...	40,000
Outstanding Expenses	...	10,000

(ii) From the following calculate the Current Ratio :

S.K. Company Limited
Balance Sheet as on 31st December, 2007

Liabilities	***Rs.***	***Assets***	***Rs.***
Share Capital	21,000	Fixed Assets (Net)	17,000
Reserve	1,500		
Annual Profits	2,500	Stock	6,200
Bank Overdraft	2,000	Debtors	3,200
Creditors	6,000	Cash	6,600
	33,000		33,000

Solution :

(i) Debt-Equity Ratio :

$$\text{Debt-Equity Ratio} = \frac{\text{Outsiders' Fund}}{\text{Shareholders' Funds}}$$

$$= \frac{\text{Rs. } 75{,}000 + 40{,}000 + 10{,}000}{\text{Rs. } 1{,}00{,}000 + 45{,}000 + 30{,}000}$$

$$= \frac{\text{Rs. } 1{,}25{,}000}{1{,}75{,}000} = 0.71 : 1 \text{ or } 5 : 7.$$

Outsiders' Funds = Debentures + Sundry creditors + Outstanding Expenses

Shareholders' Funds = Share Capital + General Reserves + Accumulated Profits

(ii) Current Ratio :

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

$$= \frac{\text{Rs. } 16{,}000}{\text{Rs. } 8{,}000} = 2 : 1.$$

Example :

From the following Financial Statements calculate :

(i) Current Asset Ratio;
(ii) Stock Turnover Ratio;
(iii) Gross Profit Ratio;
(iv) Net Profit Ratio and
(v) Liquidity Ratio.

Trading and Profit & Loss Account

	Rs.		*Rs.*
To Opening Stock	1,000	By Sales	8,000
" Purchases	4,000	" Closing Stock	2,000
" Gross Profit c/d	5,000		
	10,000		*10,000*
To Sundry expenses	4,000	By Gross Profit b/d	5,000
" Net Profit	1,000		
	5,000		*5,000*

Balance Sheet

Liabilities		***Rs.***	***Assets***		***Rs.***
Capital	22,000		Fixed Assets		20,000
Add : Net Profit	1,000	23,000	*Current Assets :*		
Current Liabilities		3,000	Liquid Assets	4,000	
			Stock	2,000	
					6,000
		26,000			*26,000*

Solution :

(i) Current Assets Ratio :

$$\text{Current Assets Ratio} = \frac{\text{Cost of Sales}}{\text{Current Assets}} \times 100$$

$$= \frac{\text{Rs. } 8{,}000 - 5{,}000}{6{,}000} \times 100$$

$$= \frac{3{,}00{,}000}{6{,}000} = 50\%$$

$$\text{Cost of Sales} = \text{Sales} - \text{Gross Profit}$$

$$= \text{Rs. } 8{,}000 - \text{Rs. } 5{,}000 = \text{Rs. } 3{,}000$$

(ii) Stock Turnover Ratio :

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Sales}}{\text{Average Inventory}}$$

$$= \frac{\text{Rs. } 3{,}000}{\text{Rs. } 1{,}500} = 2 \text{ times}$$

$$\text{Average Inventory} = \frac{\text{Opening Stock} + \text{Closing Stock}}{2}$$

$$= \frac{1{,}000 + 2{,}000}{2} = \text{Rs.}1{,}500$$

(iii) Gross Profit Ratio :

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

$$= \frac{\text{Rs. } 5{,}000}{\text{Rs. } 8{,}000} \times 100$$

$$= 62.5\ \%.$$

(iv) Net Profit Ratio :

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

$$= \frac{\text{Rs. } 1{,}000}{\text{Rs. } 8{,}000} \times 100$$

$$= 12.5\ \%.$$

(iv) Liquidity Ratio :

$$\text{Liquidity Ratio} = \frac{\text{Liquid or Quick Assets}}{\text{Liquid or Quick or Current Liabilities}}$$

$$= \frac{\text{Rs. } 4{,}000}{\text{Rs. } 3{,}000} = 1.333 \text{ or } 133.3\ \%$$

(Liquid Assets = Current Assets – Stock)

Example :

Rearrange the Balance Sheet given below in a form which you think more suitable for analytical purpose an calculate the following:

(a) Working Capital Ratio;

(b) Liquid Ratio;

(c) Proprietary Ratio.

Balance Sheet

Liabilities	*Rs.*	*Assets*	*Rs.*
Paid-up Capital	3,00,000	Cash in hand	250
Bank Overdraft	38,000	Stock in hand	1,28,200
Sundry Creditors	26,000	Trade Debtors	1,25,050
Provision for Depreciation	55,750	Land and Buildings	92,150
Provision for Taxation	9,250	Machinery	1,28,600
Proposed Dividends	15,000	Prepaid Expenses	1,500
General Reserve	55,000	Goodwill	30,000
Profit and Loss Account	6,750		
	5,05,750		5,05,750

Solution :

Arrangement of Balance Sheet

Fixed Assets	***Assets***	
	Rs.	
Land and Buildings	92,150	
Machinery and Equipments	1,28,600	
	2,20,750	
Less : Depreciation written off	55,750	1,65,000
Investments :		
Current Assets :		
Stock in hand	1,28,200	
Sundry Debtors	1,25,050	
Cash in hand	250	*2,53,500*
Miscellaneous Expenditure :		
Prepaid Expenses	1,500	
Goodwill	30,000	31,500
		Total Rs. 4,50,000
	Liabilities	
Share Capital :		
		Rs.
Paid-up Capital		3,00,000
Reserves and Surplus :		
General Reserve	55,000	
Provision for Taxation	9,250	
Provision for Dividends	15,000	
Profit and Loss	6,750	86,000
Secured Loans :		
Current Liabilities :		
Sundry creditors	26,000	
Bank overdraft	38,000	64,000
		Total Rs. 4,50,000

Calculation of Ratio :

(a) Working Capital Ratio :

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

$$= \frac{2,53,500}{64,000} = 3.96 : 1$$

(b) Liquidity Ratio :

$$= \frac{\text{Liquid Assets}}{\text{Liquid Liabilities}}$$

$$= \frac{1,25,300}{64,000} = 1.95 : 1$$

(c) Proprietary Ratio :

$$= \frac{\text{Proprietor's Fund}}{\text{Total Liabilities}}$$

$$= \frac{3,55,000}{4,50,000} = 0.79 : 1.$$

Example :

The following are the summarised Profit and Loss a/c for the year ending and the balance Sheet as on such date :

Trading and Profit and Loss a/c

	Rs.		*Rs.*
To Opening Stock	10,000	By Sales	1,00,000
" Purchases	50,000	" Closing Stock	15,000
" Direct Expenses	5,000		
" Gross Profit c/d	50,000		
	1,15,000		1,15,000

Balance Sheet

	Rs.		*Rs.*
Capital	1,00,000	Land and Building	50,000
Current Liabilities	40,000	Plant and Machinery	30,000
Profit and Loss a/c	20,000	Stock	15,000

		Sundry Debtors	15,000
		Bills Receivable	12,500
		Cash in Hand and at Bank	17,500
		Furniture	20,000
	1,60,000		1,60,000

From the above, calculate :

(i) Gross Profit Ratio, (ii) Current Ratio, (iii) Acid Test Ratio, (iv) Stock Turnover Ratio and (v) Fixed Assets Turn Ratio.

Solution :

(i) Gross Profit Ratio :

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

$$= \frac{\text{Rs. } 50{,}000}{\text{Rs. } 1{,}00{,}000} \times 100 = 50\%$$

(ii) Current Ratio :

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

$$= \frac{\text{Rs. } 15{,}000 + 15{,}000 + 12{,}500 + 17{,}500}{\text{Rs. } 40{,}000}$$

$$= \frac{\text{Rs. } 60{,}000}{\text{Rs. } 40{,}000} = 3 : 2$$

(iii) Liquidity Ratio :

$$= \frac{\text{Liquid Assets}}{\text{Liquid Liabilities}}$$

$$= \frac{\text{Rs. } 15{,}000 + 12{,}500 + 17{,}500}{\text{Rs. } 40{,}000}$$

$$= \frac{\text{Rs. } 45{,}000}{\text{Rs. } 40{,}000} = 9 : 8$$

(iv) Stock Turnover Ratio :

$$= \frac{\text{Cost of Goods Sold (Op.Stock + C. Stock)}}{\text{Average Inventory}}$$

$$= \frac{\text{Rs. 50,000}}{\text{Rs. 12,000}} = 4 : 1$$

(v) Fixed Assets Turn Ratio :

$$= \frac{\text{Net Sales}}{\text{Fixed Assets}}$$

$$= \frac{\text{Rs. 1,00,000}}{\text{Rs. 50,000 + 30,000 + 20,000}}$$

$$= \frac{\text{Rs. 1,00,000}}{\text{Rs. 1,00,000}} = 1 : 1$$

Example :

(a) From the following information, calculate the amount of gross profit and sales :

Average Stock	...	...	Rs. 80,000
Stock Turnover Ratio	...	...	6 times
Selling Price	...	...	25% above cost

(b) The debt-equity ratio of a company is 1 : 2. Which of the following suggestions would increase, decrease and not change it?

(i) Issue of equity shares,

(ii) Cash received from debtors,

(iii) Redemption of debentures,

(iv) Purchased goods on credit.

Solution :

(a) As selling price is 25% above cost, therefore, Gross Profit marin is 25% on cost of goods sold.

$$\text{As Stock Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average stock}}$$

or Cost of goods sold = 5 times the Average Stock

or $6 \times 80{,}000 = \text{Rs. } 4{,}80{,}000$

Hence Gross Profit is 25% of Rs. 4,80,000

$= \text{Rs. } 1{,}20{,}000$

(b) $\text{Debt Equity Ratio} = \dfrac{\text{Outsiders' Funds}}{\text{Shareholders' Funds}}$

Debt Equity Ratio is given as 1 : 2

(i) Issue of Equity Shares will increase the ratio.

(ii) Cash received from Debtors will not change it.

(iii) Redemption of Debentures will decrease it.

(iv) Purchases of goods on credit will not change it.

Example :

(a) Calculate debtors turnover ratio from the following data :

			Rs.
Total Sales for the year	...	...	2,00,000
Cash Sales for the year	...	...	40,000
Debtors at the beginning of the year	...	...	20,000
Debtors at the end of the year	...	...	60,000

State the significance of this ratio.

(b) Calculate stock turnover ratio from the following data :

			Rs.
Stock at the beginning of the year	...	...	20,000
Stock at the end of the year	...	...	10,000
Purchases	...	...	50,000
Carriage Inward	...	...	5,000
Sales	...	...	1,00,000

State the significance of this ratio.

Solution :

(a) $\text{Debtors Turnover Ratio} = \dfrac{\text{Credit Sales}}{\text{Average Debtor}}$

$\text{Average Debtors} = \dfrac{\text{Op. Debtors + Closing Debtors}}{2}$

Credit Sales = Total Sales – Cash Sales

$$= 2,00,000 - 40,000$$

$$= \text{Rs. } 1,60,000$$

$$\text{Average Debtors} = \frac{20,000 + 60,000}{2}$$

$$= \text{Rs. } 40,000$$

$$\text{Debtors Turnover Ratio} = \frac{1,60,000}{40,000} = 4:1$$

Significance : This ratio shows the turnover of the debtors during the year. It shows that the debtors changes about 4 times in the year.

(b) Stock Turnover Ratio = Cost of goods sold : Average Stock

$$= 65,000 : 15,000$$

$$= 13 : 3$$

Cost of goods sold = (20,000 + 50,000 + 5,000 – 10,000) = 65,000

$$\text{Average} = \left(\frac{20,000 + 10,000}{2}\right) = 15,000$$

Significance : This ratio shows as to how many times stock is purchased during the year.

Example :

(a) S.K. Ltd. has a current ratio of 3 : 1. Its net working capital is Rs. 2,00,000. You are required to determine :

(i) Current Assets,

(ii) Current Liabilities,

(iii) Liquid Assets, assuming inventory of Rs. 2,20,000.

(b) J.K. Ltd. normally has debtors equal to two months credit sales. During the coming year it expects credit sales of Rs. 7,20,000 spread over evenly over the year (12 months). What is the estimated amount of debtors at the end of the year?

Solution :

(a) Current Assets – Current Liabilities = Rs. 2,00,000

$$3 - 1 = 2,00,000$$

$$2 = 2,00,000$$

$$1 = 1,00,000$$

Thus, (i) Current Assets = Rs. 3,00,000

(ii) Current Liabilities = Rs. 1,00,000

(iii) Liquid Assets = Current assets – inventory

= 3,00,000 – 2,20,000

= Rs. 80,000

(b) Sales per month $= \frac{\text{Annual Sales}}{12} = \frac{7,20,000}{12}$

= Rs. 60,000

Debtors at the end of the year

= Rs. 60,000 x 2 months

= Rs. 1,20,000.

Example :

Balance Sheet of R.K. Ltd. as on 1st December, 2007 :

Liabilities	*Rs.*	*Assets*	*Rs.*
Share Capital	3,20,000	Building	3,00,000
9% Debentures	1,20,000	Machinery	60,000
Current Liabilities	3,04,000	Stock	1,76,000
Profit and loss a/c	48,000	Debtors	3,28,000
Reserves	1,00,000	Bank	28,0000
	8,92,000		8,92,000

From the balance sheet given above, work out any four ratios out of the following :

(i) Proprietary Ratio (ii) Debt Equity Ratio (iii) Fixed assets to current assets ratio (iv) Creditors equity to Total Equity Ratio (v) Long-term funds to fixed assets Ratio (vi) Reserves to Capital Ratio.

Solution :

(i) Proprietary Ratio :

$$= \frac{\text{Equity Capital + Reserve + P \& L a/c}}{\text{Total Assets}}$$

$$= \frac{3,20,000 + 1,00,000 + 48,000}{8,92,000}$$

$$= \frac{4,68,000}{8,92,000} = 0.52 : 1$$

(ii) Debt Equity Ratio :

$$= \frac{\text{External Equities}}{\text{Internal Equities}}$$

$$= \frac{1,20,000 + 3,04,000}{3,20,000 + 1,00,000 + 48,000}$$

$$= \frac{4,24,000}{4,68,000} = 0.67 : 1$$

(iii) Fixed Assets to Current Assets Ratio :

$$= \frac{\text{Fixed Assets}}{\text{Current Assets}}$$

$$= \frac{3,00,000 + 60,000}{1,76,000 + 3,28,000 + 28,000}$$

$$= \frac{3,60,000}{5,32,000} = 0.67 : 1$$

(iv) Creditors Equity to Total Equity Ratio :

$$= \frac{\text{External Equities}}{\text{Total Equities}}$$

$$= \frac{1,20,000 + 3,04,000}{8,92,000}$$

$$= \frac{3,24,000}{8,92,000} = 0.36 : 1$$

(v) Long-term Funds to Fixed Assets Ratio :

$$= \frac{\text{Long - term Funds}}{\text{Fixed Assets}}$$

$$= \frac{\text{Total Equities - Current Liabilities}}{\text{Fixed Assets}}$$

$$= \frac{8,92,000 - 3,04,000}{3,00,000 + 60,000}$$

$$= \frac{5,88,000}{3,60,000} = 1.63 : 1$$

(vi) Reserve to Capital Ratio :

$$= \frac{\text{Reserves}}{\text{Capital}}$$

$$= \frac{1,00,000 + 48,000}{3,20,000} = 0.46 : 1$$

Example :

Following is the Balance Sheet of Sangeeta Ltd. as on 31st December, 2007 :

Creditors	6,000	Cash	5,000
Bills Payable	10,000	Short term Investments	15,000
Outstanding Expenses	1,000	Sundry Debtors	20,000
Taxation Provision	13,000	Stock	30,000
6% Debentures	70,000	Fixed Assets	1,30,000
7% Preference Shares	10,000		
Equity Shares	50,000		
Reserve and surplus	40,000		
	2,00,000		2,00,000

Others Informations :		*Rs.*
(i)	Net Sales	3,00,000
(ii)	Cost of goods sold	2,58,000
(iii)	Net Income before tax	50,000
(iv)	Net Income after tax	10,000

Calculate appropriate ratios from the information given.

Solution :

Solvency Ratios

(1) Current Ratio : $= \frac{\text{Current Assets}}{\text{Current Liabilities}}$

$$= \frac{\text{Rs. } 70,000}{\text{Rs. } 30,000} = 2.3 : 1$$

(2) Acid Test Ratio : $= \dfrac{\text{Liquid Assets}}{\text{Current Liabilities}}$

$= \dfrac{\text{Rs. } 40{,}000}{\text{Rs. } 30{,}000} = 1.3 : 1$

(3) Debt-Equity Ratio : $= \dfrac{\text{External Equities}}{\text{Internal Equities}}$

$= \dfrac{\text{Rs. } 1{,}00{,}000}{\text{Rs. } 1{,}00{,}000} = 1 : 1$

(4) Proprietary Ratio : $= \dfrac{\text{Proprietors' Funds}}{\text{Total Assets}}$

$= \dfrac{\text{Rs. } 1{,}00{,}000}{\text{Rs. } 2{,}00{,}000} = 5 : 1 \text{ or } 50\%$

(5) Ratio of Fixed Assets to Proprietor's Ratio :

$= \dfrac{\text{Fixed Assets}}{\text{Proprietor's Funds}}$

$= \dfrac{\text{Rs. } 1{,}30{,}000}{\text{Rs. } 1{,}00{,}000} = 1.3 : 1$

Profitability Ratios

(6) Gross Profit Ratio : $= \dfrac{\text{Gross Profit}}{\text{Net Sales}} \times 100$

$= \dfrac{\text{Rs. } 42{,}000}{\text{Rs. } 3{,}00{,}000} \times 100 = 14\%$

Working : Gross Profit = Net Sales – Cost of goods sold

(7) Net Profit Ratio : $= \dfrac{\text{Net Profit after tax}}{\text{Net Sales}} \times 100$

$= \dfrac{\text{Rs. } 10{,}000}{\text{Rs. } 3{,}00{,}000} \times 100 = 3.3\%$

(8) Operating Ratio :

$$= \frac{\text{Cost of goods sold + Operating Exp.}}{\text{Net Sales}} \times 100$$

$$= \frac{\text{Rs. 2,58,000} \times \text{Rs. 19,300}}{\text{Rs. 3,00,000}} \times 100 = 92.4\%$$

Working : (A) Net Operation Profit = N.P. before tax + Interest on debentures – Interest on Investments (assumed at 10%)

= Rs. 20,000 + Rs. 4,200 – Rs. 1,500 = Rs. 22,700

(B) Operating Expenses = G.P. – Net Operating Profit

= Rs. 41,000 – Rs. 22,700 = Rs. 19,300

(9) Return on Shareholders :

$$\text{Investment} = \frac{\text{Net Profit after tax}}{\text{Proprietor's Funds}} \times 100$$

$$= \frac{\text{Rs. 10,000}}{\text{Rs. 1,00,000}} \times 100 = 10\%$$

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