

Costing & FM Theory

Cost Center

It is defined as a location, person or item of equipment for which cost may be ascertained and used for the purpose of cost control. Cost centers are of two types,

1. Personal Cost Center: Consisting of a person or a group of persons.
2. Impersonal Cost Center: Consisting of a location or an item of equipment.

In case of manufacturing concerns cost centers are mainly of two types,

- I. Production Cost Center: Where actual production activity is carried on. eg. Machine shop, assembly shop.
- II. Service Cost Center: Which provides ancillary services to production cost centers eg. Power plant maintenance department etc.

Relevant and Irrelevant Cost

A cost, which is affected by a decision, is relevant cost and hence is important in decision-making.

A cost which is not affected by a decision is irrelevant cost i.e. it will remain the same irrespective of the decision taken.

Incremental/Differential Cost

Differential costs are the additional costs, which will be incurred if the management chooses one course of action as oppose and to another. They are the extra or incremental costs, by a particular decision.

Opportunity Cost

It is the value of benefits foregone, (sacrificed) by choosing one alternative instead of the other. These costs are computed only for comparison in managerial decision-making.

Replacement Cost & Conversion Cost

It is the current market cost of replacing an asset or material.

It refers to direct wages, direct expenses and overhead costs for converting raw materials to the finished stage or for converting a material from one stage of production to the other.

Out of Pocket Cost and Sunk Cost

A cost, which requires current or future cash expenditure, is out of pocket cost.

However those costs, which have already being incurred in the past and will not required current cash expenditure are called as sunk costs.

Avoidable and Un-avoidable costs

Costs that are specifically incurred for an activity and would be avoided if the activity were discontinued are avoidable costs. Unavoidable costs are costs, which will be incurred irrespective of continuation/stoppage of a particular activity.

A. Treatment of Waste, Scrap, Spoilage and Defective:

1. Waste: Is that portion of basic raw material lost in processing having no recoverable value? Waste may be visible or invisible. Normal waste is

absorbed in the cost of net output i.e. the unit price of material used is inflated in such a way that total cost is recovered from smaller quantity.

Example:

1,000 kgs of coal is used costing Rs. 1.80 per kg. If the normal waste is 10%, the cost per kg of coal charged to production will be $\{(1.80 \times 1,000) / (1000 - 100)\}$ i.e. Rs. 2 per Kg.

Abnormal waste is transferred to the costing Profit And Loss A/c.

2. Scrap: Is the incidental residue from certain type of manufactures, usually of small amounts and low value recoverable without further processing. Scrap may be treated in cost accounts as follows.
 - i. When value of scrap is negligible no entry is passed i.e. the cost of scrap is borne by the good units. The sale of scrap is treated as other income in Profit and Loss A/c.
 - ii. Where the value of scrap is significant and cannot be identified with a particular job then sale of scrap is credited to factory overhead a/c i.e. factory overheads are reduced.
 - iii. Where the value of scrap is significant and the scrap is identified with a particular job or process, the scrap a/c is charged with full cost and the profit or loss on realization of scrap will be transferred to Costing Profit And Loss A/c.
3. Spoilage: Refers to materials, which are so badly damaged in manufacturing operation that they cannot be rectified economically and hence are removed from the process and disposed off. Normal spoilage cost are production costs and charged to the specific production order or charged to production overhead so that it is spread over all production. Any sale proceeds from spoilage are credited to the production order or production order or production overhead a/c abnormal spoilage costs are charged to costing Profit And Loss A/c.
4. Defectives: Those units of output which do not meet quality requirement and/or have minor defects, but which can be rectified and turned out as good units by the application of additional material, labours or other service. Defectives may arise due to substandard materials, bad planning, poor workmanship, improper rectified then the cost of rectification is added to the total production cost and observed by all units. If the defective are not rectified and sold as seconds, the cost of good units will be:

Total Manufacturing Cost - sale Value of Defectives

Goods Units

Losses due to obsolescence: Obsolescence means the loss in the value of an asset due to its suppression. In case of obsolescence, material held in stock is a total loss and should be immediately disposed off. Since this loss is of an abnormal nature it is transferred directly to Costing And Loss A/c.

A. ABC Analysis:

This method of stores control is based on the concept of "Management by exception" or "Selective Inventory Management". It is an analytical method of material control that aims at concentrating efforts in those sectors where attention is needed most. It is also called as "Always Best Control" method.

Under this method the total number of items of materials are classified into three categories namely A, B, and C according to their value,

Costing & FM Theory

availability , importance, etc. it is generally observed that a very less percentage of the total items (say 5 to 10) account for a high percentage of the total value of materials consumed (say 60 to 70%).

These items are classified under category 'A'. Similarly the items which account for 15 to 20% of the total number set of items which are around 60 to 70% in terms of quantity may hardly account for 5 to 10% of the total value of materials consumed during the year, these are classified under category 'C'.

Once the total number of items is grouped under these three categories, the management can now focus their attention more on category 'A' item and relatively low on category B and C items. An example of ABC Analysis can be given as follows:

Category	Number of items	%of total no of items	Total Annual Usage Value	% of the total value Rs.
A	300	6%	5,60,000	70%
B	1500	30%	1,60,000	20%
C	3200	64%	80,000	10%
Total	5200	100%	8,00,000	100%

Bill of Material & Material Requisition Note

(May 1992, May 1994)

Particular	Bill of Material	Materials Requisition
1. Meaning	It is a comprehensive list of materials with exact description and specifications required for a job or other production units.	It is a formal written demand / request, usually from the Production Department to Stores Department for the supply of specified materials, stores etc.
2.Information Contents	This provides information about required quantities and if there is any deviation from the standards, it can easily be detected.	It provides information on actual quantities of materials consumed by Production Department.
3. Origination	It is prepared by the Engineering or Planning Department in a standard form.	It is prepared by Production Department and is further signed by the Store – Keeper for actual issue of materials.

Bin Cards and Stock Control Cards

Particular	Bin Card	Stock Control Card
1.Meaning	Bin card are quantitative records of stores showing quantities received, issued to production and balance stock available	They are quantitative records of stores showing quantities received,, issued to production and valance stock available . These contain further information as regards stocks on order.
2. Location	These are kept attached to the bins to assist in the identification of stock.	Stock Control Cards are kept in cabinets or trays or loose binders, and not along with the bin.

Costing & FM Theory

3. Merits.	(a) Fewer chances of mistakes (b) Effective control over stocks. (c) Easy identification of the different items of materials.	(a) Records kept in compact manner. (b) Division of labour between record keeping and actual material handling.. (c) Possible to get an overall idea of the stock position, easily
4. Demerits	(a) Records dispersed over a wide are. (b) Cards are liable to be smeared with dirt and grease (c) Need for both clerical & handling staff.	(a) No comparison of the physical stocks its book balance. (b) No easy physical identification of material in stock.
5.Points of difference	- Does not contain information on material ordered, expected date of receipt etc. - Kept attached to the bins or receptacles in which the matters are stored, hence distributed availability.	- Shows further information on the Re-order Quantity. - Kept in a tray or file on the Store-keeper desk, hence concentrated availability of all records in one place.

ROL and ROQ

Particulars	ROL	ROQ
1.Meaning	It is the stock level at which next purchase procedure should be initiated.	It is the quantity that should be placed in the Purchase Order.
2.Question	It answers the question when to purchase	It answers the question what quantity to purchase.
3. Formula	Maximum Usage Rate * Max. Lead Time	$ROQ = EOQ = 2 AO \div C$

Bin Card and stores Ledger

(1999,2000,2002,2003, Nov 2004)

Particular	Bin card	Stores Ledger
1. Maintained by	Store – keeper	Cost Accounting Dept.
2. Nature	Store Recording Document	Accounting Record
3. Contain	Quantitative only	Quantitative cum Financial (including costs also)
4.Time of recording	At the time of transaction	After the transaction takes place
5. Source documents	Recorded at source. No separate source document required	Posted from Material Requisition Slips, Goods Received Notes etc
6. Manner of posting	Each transaction is recorded individually	Transactions are posted on summary basis

Economic Order Quantity & its computation

Meaning: Economic Order Quantity (EOQ) refers to the quantity to be purchased every time so as to minimize the total of Ordering Costs per annum and Carrying Costs per annum are minimum is known as the EOQ.

Computation: By applying Wilson's formula-

$$EOQ = 2AO \div C$$

Periodic and Continuous Stock Verification

(May 2001)

Particulars

Periodic Stock Taking

Continuous Stock Taking

1. Timing	Stock Verification takes place at the end of a financial period, say a year.	Stocks are verified at regular intervals during the year. Since stock- taking takes place regular, it is called continuous stock-taking.
2. Coverage	All items of stocks are covered in a single stretch of verification, say over two or three days.	In each verification, two or three items are covered on random basis. In the entire period all items are covered on rotation basis.
3. Effect on work	Regular stores procedures like materials receipts, issues etc. may have to be stopped to facilitate stock - taking	There is no interference with regular workflow.
4. Control	Discrepancies can be known only at the end of the period. Responsibility cannot be easily fixed.	Discrepancies are ascertained immediately in order to take corrective action and avoid recurrence.
5. Record	Inventory Records may also be updated periodically, say weekly or monthly, in fact, at any time before physical verification.	Due to surprise element involved, inventory records must be maintained up – to – date at all times. Such records are called Perpetual Inventory Record.
6. Interim results	This does not facilitate or help the quick compilation of interim or final financial results.	It provides stock figures on real – time basis Hence final accounts can be compiled quickly interim results can also be prepared easily.

1. Labour Record:

There are two types of records maintained in case of Labour–Time keeping & Time Booking.

- I. Time keeping- Time keeping refers to the correct recording of the employee's attendance time.
 - Methods of Time Keeping
 - (A) Hand-written records
 - (B) Disc or Token Method
 - (C) Punch Card System
- II. Time Booking - It refers to the recording of time spent by a worker on each job, process or operation.
 - Methods of Time Booking
 - (A) Time Card and
 - (B) Job Card

2. Treatment of Items Of Labour Cost:

- I. Idle Time– The difference between the time paid for and actual (effective) time worked for is known as idle time. This can also be calculated as the difference between the times recorded as per Time Keeping Records and as per the Time Booking Records. The idle time then is analysed into Normal and Abnormal idle time.

Accounting Treatment:

- (a) Normal idle time: - Cost of normal idle time is transferred to factory overheads account and thereby charged to Cost of Production.
- (b) Abnormal idle time: - Cost of abnormal idle time is transferred to Costing Profit and Loss Account.

II. Overtime Time-spent by labour over and above normal time is known as overtime and it is generally paid at double the normal wage rate.

$$\text{Overtime wages} = \text{normal wages} + \text{overtime premium}$$

Treatment of Overtime Premium In Cost Accounting

- (a) If overtime is resorted to at the desire of the customer, then overtime premium should be charged to that job directly.
- (b) If overtime is required to cope up with the general production programmes or for meeting urgent orders, the overtime premium should be treated as “overhead cost” of the particular department, or cost centers in which overtime work was done
- (c) If overtime is worked in department due to the fault or mistake of another department, then the overtime premium should be charged to the latter department’s “Overhead Cost”
- (d) If overtime is worked on account of abnormal conditions such as flood, earthquake, strikes, lockouts, etc, then it should not be charged to cost, but should be transferred to costing Profit and Loss A/c or Profit and loss A/c as the case may be.

Various methods of computing Labour turnover
985, May 2003, Nov 2004)

(Nov

Without Expansion in production facilities e.g. diversification, plant capacity increase etc.	With Expansion i.e. increase in plant capacity, commencement of new factory etc.
1. Separation Method $S \div L$	1. Separation Method $S \div L$
2. Replacement Method $R \div L$	2. Accession Method $A \text{ or } (R+N) \div L$
3. Mixed Method $(S+R) \div L$	3. Flux Method $(S + A) \div L \text{ or } (S+R+N) \div L$

Where S = Number of Separation; R = No. Of replacements; A= Accessions;

N = Number of New Recruitments; L = Average Labour Force.

Causes of Labour Turnover

(Nov 1985)

The major causes of labour turnover are –(1) Unavoidable Causes; and (2) Avoidable Causes.

1. Unavoidable Causes

2. Avoidable Causes

Costing & FM Theory

These are causes under which it becomes obligatory on the part of management to ask one or more of their employees to leave the organisation; such as –

- (a) Seasonal nature of the business;
- (b) Shortage of raw material, power, slack market for the product etc,
- (c) Change in the plant location;
- (d) Disability, making a worker unfit for work;
- (e) Disciplinary measure;
- (f) Personal reasons e.g. ill health, premature retirement, family responsibilities etc.

These are the causes that require the attention of management on a continuous basis so as to keep the labour turnover rating as low as possible, such as –

- (a) Dissatisfaction with job, remuneration, hours of work, working condition, etc.
- (b) Strained relationship with management, supervisors or fellow workers;
- (c) Lack of training facilities and promotional avenues;
- (d) Lack of recreational and medical facilities;
- (e) Low wages and allowances.

Steps to minimize Labour Turnover (Nov 1985, Nov 1994, May 1996)

The following remedial steps may be adopted to minimize labour turnover –

1. Exit interview with each outgoing employee to ascertain the reasons for his leaving the organisation.
2. Job analysis and evaluation carried out even before recruitment to ascertain the requirement of each job.
3. Scientific system of recruitment, placement and promotion, by fitting the right person in the right job.
4. Enlightened attitude of management- Mental Revolution on the part of management by taking workers into confidence and creating a healthy working atmosphere, with measures such as-
 - (a) Framing Services Rules after discussion between management and workers union.
 - (b) Provision of facilities for education, training and development of workers.
 - (c) Introduction of procedures for settlement of workers grievances.
5. Use of committee, comprising of members from management and workers to handle issues concerning workers grievances, requirement etc

Effects of Labour turnover (RPT, Nov 1994, Nov 1998, Nov 1999, Nov 2003)

1. Effect of Labour Turnover: High labour turnover leads to increase in the cost of production due to the following reasons
 - (a) Regular flow and schedule of production is Disturbed.
 - (b) Efficiency of new workers is low. Even if they are experienced, it takes some time to get oriented to the Firm.
 - (c) There are increased costs on training, orientation and induction.
 - (d) New workers cause increased breakage of tools, materials, etc. leading to wastage of resource.
2. Cost of Labour Turnover: the two types of costs associated with labour turnover are-
 - (a) Preventive Costs: These are costs incurred to keep the labour turnover at a low level, e.g. cost of medical services, welfare schemes and pension schemes. If the firm incurs high preventive costs, its rate of labour turnover is usually low.
 - (b) Replacement Costs: These are costs arising due to high labour turnover and represent the amount spent on new workers. Some examples are cost

Costing & FM Theory

of employment, training and induction, abnormal breakage and scrap, extra wages and overheads due to inefficiency of new workers. The company will incur high replacement costs if its rate of labour turnover is high. The behaviour of the two types of costs is given in the diagram above. Hence, every company must keep the labour turnover at an optimum level keeping in view its personnel policies and behaviour of replacement and preventive costs at various levels of labour turnover rates.

Allocation & Apportionment

(Nov 90, May 94)

Particular	Allocation	Apportionment
1. Meaning	Identifying a cost center and charging its expenses in full	Allotment of proportions of common cost to various cost center.
2. Nature of Expenses	Specific and Identifiable	General and Common
3. Number of Depts.	One	Many
4. Amount of OH	Charged in Full	Charged in Proportions

6. Recovery/Absorption: This means charging every unit of output with overhead cost. There are various basis of absorption and the most appropriate method shall be selected. This is the final step wherein overheads are linked with the output.

Methods of re-apportionment of Service department expenses to production departments
(Nov 1999, RTP)

Based on the nature of service provided by service departments, there are three methods of re-apportionment of expenses to production departments. The methods and their underlying assumptions are-

Let A and B be production departments; X and Y be service departments.

Assumption	Relationship	Method used
1. Service departments do not serve one another	X serves A, B; Y serves A, B X does not serve Y and vice-versa.	Direct distribution method
2. One service dept. serves the other; but does not take back services in return	X serves Y, A and B Y serves A and B only (Not X) X serves Y; but Y does not serve X	Step ladder method or Non-reciprocal services method
3. Service department serve one another	X serves Y, A and B; Y serves X, A and B.	Reciprocal services method ▪ Repeated redistribution technique (or trial & error technique) (or) ▪ Simultaneous equations technique

Of these, the third assumption i.e. service departments serve one another, is considered the most practical.

Blanket and Departmental overhead recovery rates

(May 1999, Nov 2000, May 2005)

1. Single or Blanket or Factory Overhead Rate: It involves computation of one single overhead absorption rate for the whole factory, as under-

$$\text{Blanket Overhead Rate} = \frac{\text{Overhead Costs for the entire factory}}{(\text{Total output/DLF/machine hours for all dept. in the factory})}$$

Note: Blanket Rate should be used only in the following circumstances:

- (a) Where only one major product is being produced.
- (b) Where several products are processed but;
 - All products pass through all departments and
 - All products are processed for the same tie duration in each department.

2. Multiple or Departmental Overhead Rates: It involves computation of separate rates for each production department, service department, cost center and each product, for both fixed and variable overheads. It may be computed as follows-

Overhead allocated/apportioned to each department or product
Multiple Overhead Rates = Output or DHL or Machine hours of that department or product

Using multiple overhead rates, jobs or products are charged with varying amount of factory overheads, depending on the type and number of departments through which they pass. However, the number of overhead rates, which a firm may compute would depend upon two opposing, factors viz. the degree of accuracy desired and the clerical cost involved.

Rated Capacity

1. Rated capacity refers to the maximum possible productive capacity of a machine or a plant as indicated by its manufacturer.
2. It is also known as – (a) Maximum Capacity or (b) Installed Capacity or (c) Theoretical Capacity or (d) Nominal Capacity.
3. The rated capacity can never be achieved due to avoidable and unavoidable losses in operating time.

Practical capacity

1. Practical capacity = Rated Capacity less normal / unavoidable time losses.
2. It is also known as Operating Capacity or Net Capacity or Available Capacity
3. This capacity takes into account loss of time due to repairs, maintenance, minor break down, idle time, setup time, normal delays, Sundays and holidays, stock taking etc.
4. It may also use as a base for determining overhead rates.

Normal Capacity

1. It is the capacity of a plant, which is expected to be utilized over a long period based on sales expectations. The determination of this capacity considers the average utilization of plant capacity during one full business cycle that may extend over 2 to 3 years.
2. It is also known as Average Capacity or Capacity based on Sales Expectancy. It is used to compute overhead recovery rate.
3. Normal Capacity = Normal Sales Volume in unit's ÷ Processing time per unit.
4. Normal Capacity may be equal to or slightly lower than Practical Capacity. Normal Capacity cannot be higher than the Practical Capacity.

Idle Capacity

(Nov 1983, May 1997)

1. Definition: It is that part of the capacity of plant, machine or equipment, which cannot be effectively utilized in production.
2. Idle Capacity: Practical (or sometimes Normal) Capacity less Actual Capacity Utilization.

3. Causes: Idle capacity may arise due to reasons like lack of product demand, non-availability of raw material, shortage of skilled Labour, absenteeism, shortage of power or fuel or supplies, seasonal nature of product etc. these are identified into Abnormal & Abnormal; and also as Controllable & Non-Controllable.
4. Treatment: Idle Capacity Costs can be treated in product costing, in the following ways-
 1. Normal & unavoidable Reasons: Such costs arising due to normal reasons like repairs, maintenance shutdown job changeover etc., should be treated as regular cost and included s overhead. Supplementary overhead rate should be used to recover the idle capacity cost.

Accounting treatment of Under-absorption and Over-absorption of Production overheads

(May 1986, Nov 1989, May 1994, Nov 1998, and May 2004 Nov 1989, May 1994)

Overhead absorption rates for any period are pre-determined based on the normal activity data. However, the actual amount of overhead incurred may differ due to difference in (a) overhead costs; (b) volume of output or hours or other allocation base; or (c) both.

The difference between absorbed OH and Actual OH is termed as Difference in Absorption [or] OH Variance. For accounting /disposition purposes, Difference in Overhead Absorption is analysed as under-

$$\text{DIFFERENCE IN ABSORPTION} = \text{Absorbed OH less Actual OH}$$

Absorbed OH is greater than Actual OH
(credit Balance in OGH Control A/c)

Absorbed OH is less than Actual OH
(Debit Balance in Oh Control A/c)

OVERABSORPTION

UNDERABSORPTION

A

Analysed as due to -
(An one of the following)

1. Write Off: Small amounts may be credited to Costing P&L A/c
2. Deferral: May be carried over to next year, by transfer to OH Reserve A/c or suspense A/c.
3. Cost Reversal: In case of large amounts, cost of jobs may be reduced/adjusted by passing reversal journal entries.

<u>Normal Reasons</u>	<u>Abnormal Reasons</u>
e.g. genuine planning errors, Changes in assumptions etc.	e.g. strike period wages, labour Court Award, write off of Obsolete stores,
penalties paid etc.	
Treated as increase in Costs & apportioned to-	

(Using supplementary OH Treated as Loss &

Recovery Rate) debited to Costing P&L

Units Sold	Closing Stock of Finnish goods	closing stock of WIP
Debited to cost of Sales A/c	Debited to FG Control A/c	Debited to WIP control A/c

Note: When under absorption is small and immaterial, it is fully debited /transferred to costing P&L A/c, irrespective of whether it is due to normal or abnormal reasons.

Treatment of idle capacity costs

(RTP. Nov 1983, May 1997, Nov 2001)

1. Nature: Costs associated with idle capacity are mostly fixed in nature. These include depreciation repairs and maintenance charges, insurance premium, rent,

related, management and supervisory costs. These costs remain unabsorbed or unrecovered due to under utilization of plant and service capacity.

$$2. \text{ Idle Capacity Costs} = \frac{\text{Aggregate overhead related to plant}}{\text{Normal Plant Capacity}}$$

3. Treatment: Idle Capacity Costs can be treated in product costing, in the following ways-

(a) Normal & unavoidable Reasons: Such costs arising due to normal reasons like repairs, maintenance shutdown job changeover etc., should be treated as regular cost and included s overhead. Supplementary overhead rate should be used to recover the idle capacity cost.

Process Costing and Job Costing

No.	Particulars	Job Costing	Process Costing
1.	Meaning	Job refers to specific contract work order or arrangement, where work is executed as per customer's requirements.	Process refers to a stage in manufacture where raw materials are converted from one form to another.
2.	Nature of work	Specialized production based on customer's specifications.	Specialized mass production.
3.	Quantity of Output	Each job is distinct from the other output consists of one or a few items Only	Output of each process consists of homogeneous (similar) units, in large quantities.
4.	Cost Centre	Job itself	Process itself.
5.	Cost Unit	Job itself	Output of the process.
6.	Cost Compilation	Cost is compiled by reference to job or work order irrespective of its time of completion.	Cost is complied by reference to processes for a specific time period.
7.	Cost Assignment	Cost is computed for each job or unit of work. It is not averaged.	Cost is first ascertained for the process and then averaged over the number of units produced.
8.	Cost transfers	There is no transfer of costs from one job to another.	Cost of one process is transferred to next process, by reference to process flow.
9.	WIP Valuation	Different jobs might be complete at different degrees. Hence WIP consists of job wise cost incurred till date.	The concept of equivalent production is applied. It is presumed that all units of closing WIP are uniformly semi complete on an average.
10.	Supervision & Control	Close supervision is necessary since each job is distinct from the other.	Comparatively easier since processes are standardized.
11.	Scope for cost reduction	Comparatively less and requires active management decisions.	Easier due to mass production and economies of scale.

Valuation of WIP in processes

1. Need for Valuation of WIP

a) If all units introduced into a process during a period are fully completed and transferred to the next process, it is simple to compute the average cost per unit as Total Costs incurred during the period divided by Output during that period.

b) However, generally manufacturing processes are continuous activities. Hence all units introduced into a process may not be fully completed. There might be units lying as Closing Work in Progress.

- c) Hence, the cost incurred during a period represents the cost of work carried on Opening Work-In-Progress Closing Work-In-Progress and completed units.
- d) Thus, to ascertain the cost of each completed unit, it is necessary to ascertain the cost of Work-In-Progress in the beginning and at the end of the process.

2. Bases of Valuation of WIP; (Nov 2002)

- a) Based on Actual: WIP can be valued on actual basis, i.e. materials used on the unfinished units and the actual Rs. Of labour expenses involved. However, this method does not ensure accuracy.
- b) Based on Equivalent Production: In order to provide a higher measure of accuracy, an alternative method of WIP valuation is based on converting partly finished units into equivalent finished units.

3. Methods of Valuation: WIP in processes may be valued in any of the following alternative methods-

- a) First-in-First Out (FIFO) method.
- b) Last-in-First Out (LIFO) method.
- c) Weighted Average Cost (WAC) method.

Of these, FIFO and WAC methods are the generally adopted methods of valuation.

Equivalent Production

- 1. Equivalent Production mean converting the incomplete Production units into their equivalent completed units.

Equivalent Units = Physical units (partly complete) × Percentage of Completion.

- 2. Example: Closing WIP consists of 2,500 units each 20% complete. Hence Equivalent Units = $2,500 \times 20\% = 500$ units. Hence cost of closing WIP is equal to cost of 500 fully completed units.

Joint Products and By-products

Particulars	Joint Products	By-products
1. Meaning	Two or more products; separated in the course of the same processing operation, considered as relatively equally important.	Products recovered from material discarded in a main process.
2. Nature	Intentionally manufactured.	Incidentally arises during process
3. Importance	Comparatively higher Sale Value.	Comparatively higher Sale Value.

Treatment of By-product Costs/Revenues in Cost Account

- 1. When they are of small total value: In such case, the sale realization of By-Product is treated as under –
 - (a) Credit to the P & L Account either as Miscellaneous Income or as Additional Sales Revenue.
 - (b) Reduction from Total Costs (either Cost of production or Cost of sales) of the main product.

2. When the by-products are of considerable total value: When the sale value is considerable, they should be treated as Main / Joint Products. The Joint Costs of production should then be apportioned using appropriate methods like physical quantities or average unit Cost or market value methods etc.
3. When they require further processing: in such a case, the net realizable value of the By-Product at the split-off point should be derived.

NRV = Final Sales Value Less Profit Margin Less Selling Overheads Less Further Processing Cost.

If such NRV is small, it may be treated as credit to P & L Account Or Joint Process Cost Account.

If such NRV is considerable, the by-product it should be treated as a Joint Product.

Absolute and Commercial Tonne- Kilometers

Composite units like Tonne-Kilometers, Quintal- Kilometers etc. may be computed in two ways.

1. Absolute (Weighted Average) Tonne-Kilometers: This is the sum total of Tonne-Kilometers, arrived at by multiplying various distances by respective load quantities load quantities carried.
2. Commercial (simple Average) Tonne Kilometers: It is derived by multiplying total distances (i.e. Kilometers), by average load quantity (tones).

Job Costing and Contract Costing

	Job Costing	Contract Costing
1.	Job refers to any specific assignment, contract or work order where in work is executed as per customer's requirement.	Contract refers to bigger job / assignment / work order. The execution of work is spread over two or more financial year.
2.	Job Costing is applied in Printing Press, Furniture works, Interior Decoration and other similar work.	Contract Costing is applied in activities like Civil Construction, Ship Building etc

Work Certified and Work Uncertified

	Work Certified	Work Uncertified
1.	It represents work done during the period and also certified by the Architect / Surveyor.	It represents work done during the period but not yet certified by the Architect / Surveyor.
2.	The amount of work Certified is based on Architect's Certificates.	The Cost of Work Certified is based on the Contractor's own estimate.
3.	It includes profit element since it is based on Contract Price.	It is a conservative Cost estimate and does not include any profit element.
4.	It is considered for calculating percentage of completion. (i.e. Work Certified + Contract Price)	It is not considered in calculation of percentage of completion.
5.	It provides the basis for claiming periodical progress payments from the Contract.	It arises due to timing difference i.e. from the date of previous certificate to the close of the financial year.

Principles for recognition of profit on incomplete contracts

Costing & FM Theory

Profit on incomplete contract is recognized based on the National Profit and Percentage of Completion. The rules of recognition are –

Description	Percentage of Completion	Profit to be recognized and transferred to P& L Account
1. Initial Stages	Less than 25% ($\leq 25\%$)	NIL
2. Work Performed but not substantial	More than 25% but less than 50% (25% - 50%)	$\frac{1}{3}^{\text{rd}} \times \text{National profit} \times \frac{\text{Cash received}}{\text{Work Certified}}$
3. Substantially Completed	More than 50% but less than 90% (51% - 90%)	$\frac{2}{3}^{\text{rd}} \times \text{National Profit} \times \frac{\text{Cash received}}{\text{Work Certified}}$
4. Almost complete	More than 90% but not fully complete (90% - 99%)	Profit is recognized on the basis of Estimated Total Profit
5. Fully complete	100%	$\text{National Profit} \times \frac{\text{Cash received}}{\text{Work Certified}}$

Notes:

Recognize profit on almost complete contracts (91%-99% completion) / process of estimating profits / losses on incomplete contracts

Profits on almost complete contracts are recognized on the basis of Estimated Total Profits (ETP).

Suppose a contract (Value = Rs.100 Lakhs) is 95% complete by the close of a financial year and gets completed on 18th May. The accounts for the period ending 31st March are finalized only in the month of May. By the time the accounts are finalized, the contract is fully complete and the costs thereof can be obtained. Thus, the following profits are calculated.

Close of Financial Year e.g. 31 st March	Additional Costs incurred On the contract	Date of Completion of Contract e.g. 18 th May	Date of finalization of accounts for last year e.g. 31 st May
Cost till date Rs.82 Lakhs	Rs.9 Lakhs	Estimate Total Costs 82 + 9 = Rs.91 Lakhs	

- National Profit = Work Certified Less Cost incurred till date = $(100 \times 95\%) - 82 = \text{Rs.13 Lakhs.}]$
- Estimated Total Profit = Contract Price Less Estimated Total Contract Costs = $100 - 91 = \text{Rs.9 Lakhs.}$

Any of the following alternative formula may be used recognition of profit –

1. $\text{ETP} \times \frac{\text{Work Certified}}{\text{Contract Price}}$ i.e. $\text{ETP} \times \text{percentage of Completion}$
2. $\text{ETP} \times \frac{\text{Work Certified}}{\text{Contract Price}} \times \frac{\text{Cash Received}}{\text{Work Certified}}$ i.e. $\text{ETP} \times \% \text{age of Completion} \times \% \text{ of Payment}$
3. $\text{ETP} \times \frac{\text{Costs incurred till date}}{\text{Estimated Total Costs}}$ i.e. $\text{ETP} \times \text{percentage of cost incurred}$

$$4. \text{ETP} \times \frac{\text{Costs incurred till date}}{\text{Estimated Total Costs}} \times \frac{\text{Cash Received}}{\text{Work Certified}}$$

Even where the ETP information is available, Notional Profit may also be used to recognize profit. In this case, the formula based on Notional Profit could be -

$$5. \text{Notional Profit} \times \frac{\text{Work Certified}}{\text{Contract price}} \quad \text{i.e. Notional Profit} \times \% \text{age of Completion}$$

$$6. \frac{2}{3}^{\text{rd}} \times \text{Notional Profit} \times \frac{\text{Cash Received}}{\text{Work Certified}} \quad \text{i.e. relating to substantially complete contracts.}$$

Escalation Clause

1. In Fixed Price Contracts, the contract price is fixed and pre-determined. If there is an increase in prices of materials, rates of labour etc. during the period of execution of a contract, the total contract costs may rise and the contractor's profit may be reduced.
2. This increase in prices may induce the contractor to use materials of lower quantity and price in order to maintain his profit margin on the contract.
3. To overcome such a situation, the agreement generally contains a stipulation that the Contract Price will be increased by an agreed amount or percentage, if the prices of materials, wages etc. rise beyond a particular limit. Such a stipulation / condition is called Escalation Clause.
4. Accounting Treatment: The amount of reimbursement due to should be determined by references to the Escalation Clause. The following Journal Entry should record the amount due from the Contractor.

Budget Manual

Meaning: Budget Manual is a schedule, document or booklet, which shows in written form, the budgeting organization and procedures. A copy of the manual is given to each departmental head for guidance.

The Manual indicates the following matters-

1. Brief explanation of the principles of Budgetary Control System; its objectives and benefits.
2. Procedure to be adopted in operating the system- in the form of instructions and steps.
3. Definition of duties and responsibilities of- (a) Operational Executives; (b) Budget Committee, and (c) Budget Controller.
4. Nature, type and specimen forms of various reports; persons responsible for preparation of the Reports and the programmed of distribution of these reports to the various officers.
5. Accounts code and chart of accounts used by the company.
6. Budget Calendar showing the dates of completion of each part of the budget and submission of reports.
7. Budget Periods and control periods.
8. Follow-up procedure.

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Costing & FM Theory

Particular	Fixed Budget	Flexible Budget.
(a) Definition	It is a budget designed to remain unchanged irrespective of the level of activity actually attained.	It is a budget, which by recognizing the difference between fixed, semi-variable & variable costs is designed to change in relation to level of activity attained.
(b) Rigidity	It does not change with actual volume of activity achieved. Thus it is known as a Rigid or Inflexible budget.	It can be re-casted on the basis of activity level to be achieved. Thus it is not rigid.
(c) Level of activity	It operates on one level of activity & under one set of conditions. It assumes that there will be no change in the prevailing conditions, which is unrealistic.	It consists of various budgets for different levels of activity.
(d) Effect of variance analysis.	Variances analysis does not give useful information as all costs (fixed, variable, & semi-variable) are related to only one level of activity.	Variance analysis provides useful information, as each cost is analysed according to its behaviour.
(e) Use for Decision Making	If the budgeted and actual activity levels differ significantly, then aspects like cost ascertainment and price fixation do not give a correct picture.	It facilitates the ascertainment of cost, fixation of selling price and submission of quotations.
(f) Performance evaluation	Comparison of actual performance with budgeted targets will be meaningless, especially when there is a difference between two activity levels.	It provides a meaningful basis of comparison of the actual performance with the budgeted targets.

1.BASED ON COVERAGE:

Functional Budget		Master Budget (M 97)	
Budgets, which relate to the individual function in an organization are known as functional budget, e.g. purchase budget, sales budgeted, production budget, plant-utilization budget and cash budget.		It is a consolidated summary of the various functional budgets. It serves as the basis upon which budgeted P & L A/c and forecasted balance sheet are built up.	
Actual capacity utilization ratio.	It indicates the extent to which facilities were actually utilized during the budget period.	<u>Actual Hours</u> Budgeted Hours	Standard <u>Output</u> Budgeted Output
Efficiency ratio	Standard hours equivalent of work produced expressed as a percentage of the actual hours spent in producing the work.	<u>Standard hours</u> Actual Hours	<u>Actual Output</u> standard Output
Volume or Level of activity ratio.	Number of standard hours equivalent to work produced expressed as a percentage of the budget of standard hours	<u>Standard Hours</u> Budgeted Hours	<u>Actual Output</u> Budgeted Output

$$\text{Volume Ratio} = \text{Capacity Ratio} \times \text{Efficiency Ratio}$$

Break-Even Chart

The Break-Even Chart is a graphical representation of Cost-Volume-Profit relationship. It depicts the following –

1. Profitability of the Firm at different levels of output.
2. Break-Even Point – No profit no loss situation.
3. Angle of Incidence: This is the angle at which the Total Sales line cuts the Cost line. It is shown as angle θ (theta). If the angle is large, the Firm is said to make Profits at a high rate and vice versa.
4. Relationship between Variable Cost, Fixed Expenses and Contribution.
5. Margin of Safety representing the difference between the Total Sales at Break-Even Point.

Limitations of Break-Even Chart

1. The variable Cost line need not necessarily be a straight line because of the possibility of operation of law of increasing returns or law of decreasing returns.
2. The Selling Price may not be a constant factor. Any increase or decrease in output is likely to have an influence on the Selling Price per unit.
3. When a number of products are produced, separate Break-Even Charts will have to be prepared. This poses a problem of apportionment of Fixed Expenses to each product.
4. Break-Even Charts ignore the Capital Employed in business, which is one of the important guiding factors in the determination of profitability.
5. The Break Even Chart assumes that business conditions will not change. This assumption is not realistic.

Marginal Costing And Absorption Costing

Particular	Marginal Costing	Absorption Costing
1. Cost Recognition	Only Variable Costs are include for product costing & inventory valuation.	Both Fixed & Variable Costs are considered for product costing and inventory valuation.
2. Classification	Classification of expenses is based on nature, i.e. Fixed and Variable.	Classification of expenses is based on functions, i.e. production, Administration, Selling and Distribution.
3. Treatment of Fixed Costs	Fixed Costs are regarded s a Period Cost. Profitability of different products is analysed by their PV Ratio (and not Net Profit Ratio)	Fixed costs are charged to cost of production. Each product bears a reasonable share of Fixed Cost and thus the profitability of a product is influenced by the apportionment of Fixed Costs.
4. Presentation	Cost data presented highlight the total contribution and contribution of each product.	Cost data are presented on conventional pattern. Net profit of each product is determine after subtracting Fixed Cost along with their variable costs.
5. Effect of Stock holding	The Difference in the magnitude of opening stock and closing stock does not affect the unit cost of production.	The difference in the magnitude of opening and closing stock affects the unit cost of production due to the impact of related Fixed Cost.
6. Variance Reporting	In variance Reporting, FOH expenditure variance only can be computed. There is no volume variance since Fixed Overheads are not “absorbed”.	In variance Reporting, FOH expenditure and volume variances can also be sub-classified into Capacity, Efficiency and Calendar Variances.

FINANCIAL MANGEMENT

OBJECTIVES OF FINANCIAL MANGEMENT

The two objectives of financial management are:

(a). Profit maximization (short term); (b). Wealth maximization (long term).

(a) Profit maximization: the finance manager has to make his decision to maximize the profits of the concern. Profit maximization, as an objective has the following advantages and limitations.

Advantages	Disadvantages / limitations
Must for survival of business, else, capital is lost.	The “profit” is vague.
Essential for growth and development of business.	Higher the profit, Higher the risk involved.
Impact on society through factor payments.	Ignores the time pattern of return.
Profit-making firms only can pursue social obligations.	Ignores social and moral obligations of business.

Hence Profit maximization is viewed as a objective, i.e. essential but not sufficient.

(b) Wealth maximization: the objective of a firm should to maximize its value or wealth Value or wealth of a firm is represented by the market price of its shares. This value is a function of the two factors:

- The likely rate of earnings per share (EPS) of the company; and
- The capitalization rate

$$\text{Value of a firm} = \frac{\text{Earnings per share}}{\text{Capitalization rate}}$$

EPS: EPS depends on assessment as to how profitably a company is going to operate in the future or what it is likely to earn against each of its ordinary shares.

Capitalization rate: it is the cumulative results of the assessment of the various shareholders regarding the risk and other qualitative factors of a company. This rate reflects the likings of the investors for company.

Hence, wealth maximization is a better objective for a business since it represents both return and risk.

Du pont control chart-1

Return on investment (ROI) represents the earning power of the company. ROI depends on two ratios: (a) net profit ratio and (b) capital turnover ratio. a change in any of these ratios will change the firms earning power. These two ratios are affected by many factors. A change in any of these factors will change these ratios also. The various factors affecting the ROI can be put through a chart given below. This chart is known as the Du Pont control chart since it was first used by Du Pont Company of the USA.

The chart shows that return on capital employed is affected by a number of factors. Any change in these factors will affect the return on capital employed. E.g. if the cost of goods sold increases, without any corresponding increase in the selling price of the goods, the net profit would decrease and consequently ROI would also decrease. Similarly, if there is, increase in working capital, the total capital employed would increase and, therefore, in the absence of any increase in the net profit, ROI would decrease.

The chart helps the management in concentrating attention on different forces affecting profit. An increases in profit can be achieved either by more effective use of capital which will result in a higher

Costing & FM Theory

turnover ratio or better sales efforts which will result in a higher net profit ratio. The same rate of return can be obtained either by a low net profit ratio but a higher turnover ratio or a low turnover ratio but a high net profit.

Du pont control chart-2

Return on Equity (ROE):

ROE measures the profitability of equity funds invested in the firm. This ratio reveals how profitability of the owner's funds have been utilized by the firm. This ratio is computed as.

$$\text{ROE} = \frac{\text{Profit after tax}}{\text{Net worth}}$$

ROE is one of the most important indicators of a firm's profitability & potential growth. Companies that boast a high return on equity with little or no debt are able to grow without large capital expenditures, allowing the owners of the business to withdraw cash and reinvest it elsewhere. Many investors fail to realize, however, that two companies can have the same return on equity, yet one can be a much better business.

For that reason, a finance executive at E.I. Du Pont de Nemours & co. of Wilmington, Delaware, created the DuPont system of financial analysis in 1919. That system is used around the world today and serves as the basis of components that make up return on equity.

		Profit Margin = $\text{EBIT} \div \text{Sales}$
	Return on Net Asset (RONA) $= \text{EBIT} \div \text{NA Financial}$	
Return on Equity (ROE) = $\text{PAT} \div \text{NW}$	Leverage (Income) $= \text{PAT} \div \text{EBIT}$	Asset Turnover = $\text{Sales} \div \text{NA}$
	Financial Leverage (Balance sheet) = $\text{NA} \div \text{NW}$	

Capital Structure

MEANING

Meaning: Capital Structure refers to the mix of sources from where the long-term funds required in a business may be raised. In other words, it refers to the proportion of debt, preference capital and equity capital.

Factors determining Capital Structure: There is no exhaustive list of such factors. Some examples are:

- Nature of industry,
- Risk, Cost and Control considerations,
- Gestation period,
- Certainty with which profits will accrue after the undertaking goes into commercial production,
- Quantum of return on investment,
- Lending policy of financial institutions,
- Monetary and fiscal policies of the Government.

III. OPTIMUM CAPITAL STRUCTURE

One of the basic objectives of financial management is to maximum the value or wealth of the firm. Capital Structure is optimum when the firm has a combination of equity and debt so that the wealth of the firm is maximum. At this level, cost of capital is minimum and market price per share is maximum.

Costing & FM Theory

In theory, one can speak of an optimum capital structure; but in practice, appropriate capital structure is a more realistic term than the former.

The following are the major features of an appropriate capital structure:

1. Profitability: It should minimize the cost of financing and maximize earning per equity share.
2. Flexibility: The capital structure should be such that company can raise funds whenever needed.
3. Conservation: The debt content should not exceed the maximum, which the company can bear.
4. Solvency: The capital structure should be such that the firm does not run the risk of becoming insolvent.
5. Control: There should be minimum risk of loss or dilution of control of the company.

VIII. CAPITAL STRUCTURE THEORIES

Capital Structure Theories seek to explain the relationship between the following variables:

Proportions of Components of capital
(debt, equity etc.):

Costs of each component of Capital:

Impact of Leverage:

Overall Cost of Capital (WACC); and

Value of the Firm.

Costing & FM Theory

These theories can be broadly classified into two categories:

Theories which suggest that capital structure (i.e. debt equity mix) affects WACC;

Theories which suggest that capital structure (i.e. debt equity mix) do not affect WACC, which is a constant.

These theories explaining Capital Structure and Cost of Capital are:

Capital Structure affects WACC

1. Net Income Approach (NI Approach)
2. Traditional Theory

Capital Structure does not affect WACC

1. Net Operating Income Approach (NOI Approach)
2. Modigliani and Miller Approach (MM Approach)

XXIII. WEIGHTED AVERAGE COST OF CAPITAL (WACC)

- WACC denotes the Weighted Average Cost of Capital. It is defined as the Overall Cost of Capital computed by reference to the proportion of each component of capital as weights. It is denoted by K_o .
- Hence $WACC = \text{Sum of [Cost of Individual Components X Proportion i.e. Capital]}$

Importance of WACC

The cost of weighted average method is preferred because the proportions of various sources of funds in the capital structure are different. To be representative, therefore, cost of capital should take into account the relative proportions of different sources of finance.

Securities analysts employ WACC is used as the discount rate applied to future cash flows for deriving a business's net present value. WACC can be used as a hurdle rate against which to assess return on investment capital performance. It also plays a key role in economic value added (EVA) calculations.

Investors use WACC as a tool to decide whether or not to invest. The WACC represents the minimum rate of return at which a company produces value for its investors. Let's say a company produces a return of 20% and has a WACC of 11%. By contrast, if the company's return is less than WACC, the company is shedding value, which indicates that investors should put their money elsewhere. Therefore, WACC serves as a useful reality check for investors.

XXIV. FINANCIAL BREAK EVEN POINT

- It denotes the level at which a firm's EBIT is just sufficient to cover Interest and Preference Dividend.
- Financial Breakeven Point = $I + \frac{PD}{(1 - \text{Tax Rate})}$

Where, I = Interest and PD = Preference Dividend.

XXV. EPS INDIFFERENCE POINT

- Alternative modes of financing have different impact on EPS. A firm is said to be indifferent between two modes of financing if the EPS under both options is the same. This level of EBIT that results in equal EPS is called EPS Equivalency Point or Indifference Point.
- The level of EBIT at which EPS remains the same for two options of debt-equity mix, is called Indifference Point.
- Indifference Point is computed by solving the following equation for EBIT.

Alternative 1: With Debt	Alternative 2: Without Debt
$\frac{[\text{EBIT} - \text{interest}] \times [100 - \text{Tax Rate}]}{\text{Number of Equity Shares}}$	$\frac{\text{EBIT} [100 - \text{Tax Rate}]}{\text{Number of Equity Shares}}$

When both the alternatives in the above chart is equal at a certain level of EBIT (to be computed by solving the equation), the company is said to be indifferent between the two alternatives.

Venture capital Financing:

When technically competent entrepreneurs, who lack experience and funds required as promoter's contribution is financed under venture capital financing. Venture capital financing refers to financing new highly risky venture promoted by qualified entrepreneurs with a potential of success. Venture Capital industry is a recent introduction. It is a national priority especially in the areas of tele-communication, Non-conventional energy, Quality upgrading, Biotechnology, information Technology, Induction of new technologies etc. The Government of India issued guidelines for venture capital companies in 1988 and offered number of tax concessions. In 1999 the existing guidelines are relaxed to increase the attractiveness of the venture schemes and induce high net worth investors to commit their funds to "Sunrise", sectors, particularly the information Technology Sector. Initially the contribution to the funds available for the venture was only from all India financial institutions, state development corporations, commercial banks and companies in private sector. In the last couple of years, many offshore funds have been started in the country and maximum contribution is from foreign institutional investors.

Some methods of Venture capital financing are as follows:

1. Equity Financing:

As venture capital undertaking generally requires funds for a longer period but may not be able to provide returns to the investors during initial stages, the venture finance is normally the form of equity capital. The equity contribution of venture capital funds does not exceed 49% of the total equity capital, so that control remains with the entrepreneur.

2. Conditional Loan:

A conditional loan is repayable in the form of royalty after the venture enterprise is able to generate sales. No interest is payable on such loans. A royalty charge may range between 2 to 15%, actual rate depends on factors like gestation period, cash flow pattern, risk and other related factors. Some capital financiers give a choice to enterprise of paying high rate of interest (say above 20%) instead of royalty on sales once it becomes commercially sound.

3. Income Note:

It is a hybrid security, which combines the features of both conventional loan and conditional loan. The entrepreneur has to pay both interest on loan and royalty on sales but at substantially low rates.

4. Participating Debentures:

Such security carries charges in three phases:

Start phase	:	No interest
Next phase	:	Low rate of interest up to a particular level of operation.
Subsequent phase	:	high rate of Interest

9. Asset / Debt Securitisation:

The term Securitisation refers to both switching away from bank intermediation to direct financing via capital market and/or money market, and the transformation of illiquid assets like automobile loans, mortgage loans, receivables into marketable securities.

"Securitisation is a process of transformation of illiquid assets into security, which may be traded later in the open market".

Costing & FM Theory

It is a method of recycling of funds. It is especially beneficial to financial intermediaries to support lending volumes. Assets generating steady cash flow are packaged together and against this asset pool, market securities can be issued.

Securitisation Process:

1. The Originating Function:

A borrower seeks a loan from finance company, housing company or lease from leasing company. The creditworthiness of the borrower is evaluated and contract is entered into in a normal manner with repayment schedule.

2. The normal Function:

The originated assets viz. trade receivables, lease rentals, housing loans, and automobiles etc. According to maturity pattern and interest rate risk are clubbed together to create a pool. This pool is transferred, in favour of Special Purpose Vehicle (SPV), which acts as a trustee for the investor. Once the assets are transferred they are held in the SPV's portfolio.

3. The Securitisation Function:

It is the SVP's job now to structure and issue the securities on the basis of asset pool. The securities carry a coupon an on-expected maturity, which can be asset, based or mortgage based. They are generally sold to investors through merchant banker. The investors interested in this type of securities are generally institutional investors like mutual fund, insurance companies etc. the originator usually keeps spread available between yield from secured assets and interest paid to investors.

Thus trustee act as receiving and paying agent. Thus good quality loans will be eligible for securitisation. The repayment pattern of assets in particular will be deciding factor to structure the instrument.

The process of securitisation is generally without resources i.e. investor bears the credit risk or risk of default and issuer is under an obligation to pay to the investors only if he receives the cash flows from the collateral. The issuer however, has a right to legal recourse in the event of default. Obtaining insurance cover, often provided by a pool insurance policy, can further reduce the risk run by the investor.

Bank / Financial
Institution / Company

Balance Sheet

Liabilities

Assets

Trade receivable Automobile
loans
Housing loans
Mortgage loans, etc.

Pool of Assets

Trust

Instruments

Credit Rating

Third Party support

Insurance cover

Underwriting

Benefits to the originator:

1. The additional source of capital can be tapped through securitisation reliving trade receivables, deposit collection process.

2. Without disturbing the liabilities side of the Balance Sheet, the funds can be raised and enhance activity of lending, which increases the profitability.
 3. Reduce the existing debtors and its related risks.
 4. Conversion of illiquid asset into liquid portfolio.
1. Foreign Currency Convertible Bonds (FCCB):
 - a. The FCCB is a bond issued in accordance with the relevant scheme and subscribed by a non-resident in a foreign currency and convertible into equity shares of issuing company, either in whole or part, on the basis of equity related warrants attached to the debt instrument.
 - b. FCCBs are unsecured, carry fixed rate of interest and option to convert into fixed number of equity shares of the issuer company. Interest rates are very low as compared to domestic market.
 - a. FCCBs are denominated in freely convertible foreign currency.
 - d. FCCBs are popular with issues, as domestic market can be restricted with comparatively shorter maturities with high rate of interest. On the other hand low coupon security option and arbitrage opportunities available with the investors is also an attractive feature.
 - e. The major drawback is that issuing company cannot plan its capital structure, as it is not assured of conversion of FCCBs. Moreover projection of cash out flow on maturities also cannot be made.
 - f. FCCBs are also subject to foreign exchange risk. FCCBs result in creation of external debt that requires foreign exchange outflow from the country, if conversion option is not exercised by the investors.
 - ”.
 - a. American Depository Receipts (ADR) – Depository Receipts issued by a company in the United States of America is known as American Depository Receipt (ADR). Such receipts have to be issued in accordance with the provisions stipulated by the Securities and Exchange Commission (SEC) of USA. Such provisions cover many matters such as minimum requirements with respect to size, reporting requirements such as adherence to US GAAP, etc. and are fairly stringent. Only very large companies in India can perhaps qualify for such parameters. The deposit of the securities of a non-US company generally creates an ADR with a custodian bank in the issuers' country. The custodian bank ties up with the US Depository for the issue of the ADRs. ADRs are denominated in dollars and are traded in the same way as other securities in the USA.

Some of the advantages to the issuer of ADRs are (a) access to large capital (b) access to foreign exchange (c) no change in the shareholding / voting pattern. High cost of issue, need for large size and stringent requirements for fulfillment would perhaps be the disadvantages here.
 - b. Global Depository Receipts (GDR) – It is a negotiable certificate denominated in US dollars, which represents a Non-US Company's publicly, traded local currency equity. GDRs are created when the local currency shares of an Indian company are delivered to the depository's local custodian bank, against which depository bank issues depository receipts in US\$.

The GDRs may be freely traded in the overseas market like any other dollar denominated security either on a foreign stock exchange or in the over the counter market of among qualified institutional buyers. By issue of GDRs Indian companies are able to tap global equity market to raise foreign currency funds by way of equity. It has distinct advantage over debt as there is no repayment of the principal and service costs are lower.

Rule 144A of SEC of USA permits companies from outside USA to offer their GDRs to Qualified Institutional Buyers QIBs.

2. Foreign Currency Convertible Bonds (FCCB):

- a. The FCCB is a bond issued in accordance with the relevant scheme and subscribed by a non-resident in a foreign currency and convertible into equity shares of issuing company, either in whole or part, on the basis of equity related warrants attached to the debt instrument.
- b. FCCBs are unsecured, carry fixed rate of interest and option to convert into fixed number of equity shares of the issuer company. Interest rates are very low as compared to domestic market.
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- f. FCCBs are also subject to foreign exchange risk. FCCBs result in creation of external debt that requires foreign exchange outflow from the country, if conversion option is not exercised by the investors.

13. Lease Financing:

A lease is a contractual arrangement, whereby one party (i.e. owner of the asset – Lessor) grants a right to other party (i.e. user of the asset – Lessee) the right to use the asset in return for a periodic payment.

The asset is initially purchased by the Lessor and thereafter leased to the user, which pays lease rental at periodic intervals. There are two types of leases:

1. Financial Lease
2. Operating Lease

From Source of Financing point of view, let us concentrate on “Finance Lease”.

Advantages to the Lessee:

1. Leasing is an alternative to the buying of an asset out of own or borrowed funds.
2. A medium term finance
3. Lease rentals are tax deductible.
4. Lease financing can be arranged much faster as compared to term loans from financial institution
5. Lease rentals can be fixed on the basis of projected cash flow, which may vary over a lease period
6. Ownership risks remain with the lessors.

Advantages to the Lessor:

1. A different method of lending.
2. Being a owner, depreciation allowance is tax deductible. With higher depreciable rate of assets like commercial vehicles, solar equipment etc., there can be substantial tax saving and increase in yield.
3. Ownership of the asset continues over lease period.
4. Rate of yield / interest is higher than under term lending.
5. “Lease Rental” receivable over a period of lease period can be pooled together for Debt securitisation and fund can be made available through SPV.

14. Hire Purchase / Instalment Scheme Financing:

In case of Hire purchase, the seller hands over the asset to the buyer, but the title to the goods is transferred only after payment of last instalment. In case of default in payment, the seller has a right of repossession. The instalment paid by the buyer to the seller on repossession is treated as ‘hire’ towards use of an asset. The hire purchaser shows the asset. The hire purchaser show the asset in

his Balance – Sheet and can claim depreciation, which is tax deductible, although he may not be owner at that time. The interest part of the instalment being expenditure is also tax deductible.

In case of instalment sale, the title to the goods is immediately transferred to the buyer; though the payment of price along with interests is settled over agreement period. This is like a credit sale over a longer period. In case of default, the seller has no right of repossession, but a remedy is to sue and recover the dues through the Court of Law.

Both Hire – Purchase and Instalment Scheme finances can be availed much faster as compared to term loans from financial institutions or banks.

1. Pre – Shipment Packing Credit Finance:

Packing credit is an advance extended by banks to an exporter for the purpose of buying, manufacturing or processing, packing and shipping the goods to overseas buyers. An exporter having in hand firm order placed with him by a foreign buyer or irrecoverable letter of credit opened in his favour, can approach bank for availing packing credit. An advance so taken is required to be liquidated within 180 days from the date of its commencement by negotiation of export bills or receipt of export proceeds in an approved manner. Packing credit in the case of customers of long standing, may also be allowed against firm contracts entered into by them with overseas buyers.

Types of Packing Credit

i. Clean Packing Credit:

It is a clean type of export advance each proposal is weighted according to requirement of trade and credit worthiness of the exporter. Export credit Guarantee Corporation [ECGC] cover is obtained by the bank.

ii. Packing credit against hypothecation of goods:

Export finance is made available on certain terms and conditions, where the exporter has pledgeable interest and goods are hypothecated to the bank as security with stipulated margin. In this case borrower is required to submit periodical stock statement to bank.

iii. Packing credit against pledge of goods:

Export finance is made available on certain terms and conditions, where the exportable finished goods are pledged to the bank with approved clearing agents who will ship the goods from time to time as required by the exporter. The possession of the goods so pledged lies with the bank and kept under lock and key.

2. Post – Shipment Packing Credit Finance:

Bank provides finance to exporters by purchasing export bills drawn payable at sight or by discounting usage export bills covered by confirmed sales and backed by documents of the title of the goods such as bill of lading, air / ship consignment notes. It is necessary that exporter should obtain a shipment or contract risk policy of ECGC.

Finance is also provided by banks to exporters by way of advance against bill forwarded through them for collection, taking into account creditworthiness of the party, nature of goods exported, usage etc.

17. Commercial Papers:

Commercial Paper (CP) is an unsecured promissory note issued as a debt instrument, that enables highly – rated corporate borrowers to raise funds for a short period. The maturity period may vary between 90 days to 180 days. The amount raised by CP is also large.

The firm or the dealers in CP sell these to the short term lenders, who use it as interest earning investments of temporary surplus operating funds. The maturity term of CP is fixed.

The CPs are issued with face value but the issue price is less than face value. The difference is discount on the issue price which works as a return to the lender at the time of maturity. Discount on CP depends upon the amount involved, maturity period and prime lending rate of commercial banks. The main advantage of CP is that the cost involved is lower than the prime lending rates. In

addition to this cost the borrower has to bear another cost in the form of stamp duty and placement fees payable to the dealer of CP who arrange the sale.

CP comes under the purview of RBI, which has issued guidelines in 1990 on the basis of recommendations of the Vaghul Committee.

18. Bridge Finance:

Bridge finance refers, normally to loans taken by a business usually from commercial banks for a short period, pending disbursement of sanctioned term loan by financial institutions. Normally it requires a time for the financial institution to finalize procedures of creation of security, tie – up participation with other institutions etc. even through appraisal of the project is made. Once the loans are sanctioned in principle, in order to avoid delay in project implementation, bridge finance arrangement is made. Such temporary finance is repaid out of the disbursement of the principal term loan: it is secured by hypothecation of movable assets, personal guarantees and demand loans. Generally the rate of interests on bridge finance is higher than as compared to that on term loans.

9. Seed Capital Assistance:

- a. **Applicability:** The Seed Capital Assistance Scheme is designed by the IDBI for professionally or technically qualified entrepreneurs and / or persons possessing relevant experience, skills and entrepreneurial traits. All the projects eligible for financial assistance from IDBI directly or indirectly through refinance are eligible under the scheme.
- b. **Amount of Finance:** The project cost should not exceed Rs.2 crores. The maximum assistance under the scheme will be (a) 50% of the required promoter's contribution or (b) Rs.15 lacs, whichever is lower.
- c. **Interest and Charges:** The assistance is initially interest free but carries a service charge of 1% per annum for the first five years and at increasing rate thereafter. When the financial position and profitability is favourable, IDBI may charge interest at a suitable rate even during the currency of the loan.
- d. **Repayment:** The repayment schedule is fixed depending upon the repaying capacity of the unit with an initial moratorium of up to five years.
- e. **Other Agencies:** For projects with a project cost exceeding Rs.2 crores, seed capital may be obtained from the Risk Capital and Technology Corporation Ltd. (RCTC). For small projects costing up to Rs.5 lakhs, assistance under the National Equity Fund of the SIDBI may be availed.

VI. FACTORING

A factor is a financial institution, which offers, services relating to management and financing of debts arising from credit sales. While factoring is well established in Western countries, entry of factoring in Indian market, in April 1991, is a new route for managing receivables. It is not just a single service, rather a portfolio of complementary financial services available to clients i.e., sellers. Factoring involves specialized services relating to credit investigation, sales ledger management, purchase and collection of debts.

Mechanics of Factoring

The following is the procedure in factoring service –

- Seller (Client) negotiates with the factor for establishing factors relationship.
- Request by seller for credit check on the buyer (customer) whose name and address is furnished to the factor.
- Factor checks the credit credentials and approves the buyer, a credit limit and the period upto which credit can be given are fixed.
- Seller sells goods to the buyer.
- Seller sends invoice to the factor. The invoice is accounted for in the buyer's Accounts in the factor's sales ledger.
- Factor sends notice of assignment / copy of invoice to the buyer.
- Factor advises the amount to which seller is entitled after retaining margin, say, of 20%, the residual amount business being paid later.

- On the expiry of the agreed credit period, buyer makes the payment of invoice to the factor. At this point the factor pays to seller margin money retained as per point above. If however, the buyer defaults to pay the factor, it would still make the final payment to the seller in the case of without recourse factoring.

Advantages –

1. Conversion of Account receivable in cash without botheration of repayment
2. Ensuring definite pattern of cash flow from credit sales.
3. Continuous Factoring may eliminate the need of Credit and Collection Department.
4. Relieving the borrowing firm of substantial credit and collection costs.

Limitations –

1. Cost of factoring tends to be higher than the cost of other forms of short-term borrowing.
2. Factoring of debt may be perceived as a sign of financial weakness.

Types / Forms of Factoring:

1. Recourse Factoring – Under recourse factoring, the factor purchases the receivables on the condition that any loss arising out of irrevocable receivables will be borne by the client. In other words, the factor has recourse to the client if the receivable purchased turnout to be irrecoverable.
2. Non-recourse or Full factoring – As the name implies, the factor has no recourse to the client if the receivables are not recovered, i.e. the client gets total credit protection. In this type of factoring, all the components of service, viz. short-term finance, administration of sales ledger and credit protection is available to the client.
3. Maturity Factoring – Under this type of factoring arrangement, the factor does not make any advance or per-payment. The factor pays the client either on a guaranteed payment date or on the date of collection from the customer.
4. Advance Factoring – In this, the factor makes prepayment of around 80% of the invoice value to the client. The balance is paid on collection / guaranteed payment date.
5. Notified factoring – In case of notified factoring, the customer is intimated about the assignment of debt to the factor and also directed to make payments to the factor instead of the firm. It is also called ‘Disclosed Factoring ‘.
6. Non-notified (Undisclosed) Factoring – This facility is one under which the supplier / factor arrangement is not disclosed to the customer unless there is a break of the agreement of the part of the supplier or, exceptionally, where the factor considers himself to be at risk.
7. Bank Participation Factoring – in bank participation factoring, the supplier creates a floating charge on the factoring reserves in favour of banks and borrows against these reserves. For instance, if factor reserve is 20%, the supplier firm can borrow to the extent of 80%, of this reserve from Bank, thereby reducing its investments on receivable.
8. International Factoring – This deals with exports. The factoring service may include completing legal and procedural formalities pertaining to export. It is also called export cross-border factoring. The parties in this factoring are exporter (client), importer (customer), export factor and import factor.

Difference between Forfeiting Vs. Export Factoring

Forfeiting	Export Factoring
1. A forfeiter discounts the entire value of the note/bill	In a factoring arrangement the extent of financing available is 15-80%
2. The forfeiter’s decision to provide financing depends upon the financing	The export factor bases his credit decision on the credit statement of the exporter

- | | |
|--|---|
| <p>standing of the availing bank</p> <p>3. It is a pure financial agreement</p> <p>4. It is a short term financial deal.</p> | <p>It includes ledger administration, collection, etc.</p> <p>It spreads over 3-5 years</p> |
|--|---|

Difference between Factoring Vs. Bills Discounting

Factoring	Bills Discounting
- also called 'Invoice Factoring' - the parties are client, factor and debtor - It is management of book debts - Grace time is not given - There is no specific Act - Provision of advance payment on book debts is available	Also called 'Invoice Discounting' The parties are drawer, drawee and payee It is sort of borrowing from commercial banks Grace time is 3 days Negotiable instruments act is applicable No such provision to available

MEANING AND SIGNIFICANCE OF OPERATING LEVERAGE.

- Definition: Operating leverage is defined as the "firm's ability to use fixed operating costs to magnify effects of changes in sales on its earnings before interest and taxes."
- Explanation: A change in sales will lead to a change in Profit i.e. Earnings before Interest and Taxes (EBIT). The effect of change in sales on EBIT is measured by operating leverage. Since fixed costs remain the same irrespective of level of output, percentage increase in EBIT will be higher than increase in Sales.
- Measurement: The degree of Operating Leverage (DOL) is measured by: (expressed in times)

$$\frac{\% \text{ Change in EBIT}}{\% \text{ Change in Sales}} \quad \text{or} \quad \frac{\text{Contribution}}{\text{EBIT}}$$

MEANING AND SIGNIFICANCE OF FINANCIAL LEVERAGE.

- Meaning: Financial Leverage is defined as the ability of a firm to use fixed financial charges (interest) to magnify the effects of changes in E.B.I.T. / Operating profits, on the firm's Earning Per Share (EPS).
- Explanation: Financial Leverage occurs when a Company has debt content in its capital structure and fixed financial charges e.g. interest on debentures. These fixed financial charges do not vary with the EBIT. They are fixed and are to be paid irrespective of level of EBIT. Hence an increase in EBIT will lead to a higher percentage increase in Earnings per Share (EPS). The Financial Leverage measures this.
- Measurement: The degree of Financial Leverage (DFL) is measured by: (expressed in times)

$$\frac{\% \text{ Change in EPS}}{\% \text{ Change EBIT}} \quad \text{or} \quad \frac{\text{EBIT}}{\text{EBT}}$$

WHEN IS A FIRM SAID TO BE FINANCIALLY FAVOURABLY LEVERAGED

To determine whether the degree of Financial Leverage is favourable or not, the Return on Capital Employed (ROCE) should be compared with Rate of Interest on Debt.

- When ROCE greater than Interest rate:

DFL is considered to be favourable or advantageous to the firm, when it earns more on its total investment than what it pays towards debt capital. In other words, DFL is advantageous only if Return on Capital Employed (ROCE) is greater than Rate of Interest on Debt.

This is because shareholders gain in a situation where the company earns a high rate of return and pays a lower rate of return to the supplier of long-term debt funds. Financial Leverage in such cases is therefore also called 'Trading on Equity'.

The difference, between the return (EBIT) and the cost of debt funds would enhance the earnings of shareholders. Further, in case of debt funds the interest cost is also tax deductible. Hence. Gain from DFL arises due to:

Costing & FM Theory

Excess of return on investment over effective cost (cost after considering taxation effect) of debt funds.

Reduction in the number of shares issued due to the use of debt funds.

2. When ROCE is less than Interest rate:

When the rate of return on investment falls below the rate of interest, the shareholders suffer, because their earnings fall more sharply than the fall in the return on investment. This is because fixed interest costs have to be met, irrespective of the level of EBIT. In such cases, a high DFL is disadvantageous. In fact, the use of debt funds involving fixed commitment of interest payment and principal repayment is not justified.

3. Conclusion: DFL should be high when Return on Capital Employed (ROCE) is greater than Interest Rate on Debt. If ROCE is less than Interest Rate on Debt, DFL should be maintained low.

MEANING AND SIGNIFICANCE OF COMBINED LEVERAGE

- a) Meaning: Combined Leverage is used to measure the total risk of a firm i.e. Operating Risk and Financial Risk.
- b) Explanation: Operating Leverage (DOL) measures Effect of Fixed Operating Costs (i.e. Operating Risks). Financial Leverage (DFL) measures effect of Fixed Interest Charges (i.e. Financial Risks). The combined effect of these is measured by Combined by Commercial Leverage (DCL).
- c) Measurement: The degree of Combined Leverage (DCL) is measured as $DOL \times DFL$.
Therefore, $DCL = \frac{\text{Contribution}}{EBT}$

XI. CAPITAL RATIONING

A firm normally fix up maximum amount that can be invested in capital projects during a given period of time. The firm then attempts to select a combination of investment proposals, that will within the specific limits provide maximum profitability and put them in descending order according to their rate of return. Such a situation is called 'Capital Rationing'. The situation may arise due to –

Financing capital expenditure only by way of retained earnings.

Allocation of specified departmental limits.

Restricted availability of own funds and thereby restrictions on borrowings.

Classification of Investment Proposals: For Capital Rationing purpose, the investment proposals are classified as under:

Nature of Project	Indivisible	Divisible
Meaning	Investment should be made in full. Partial or Proportionate investment is not possible.	Partial Investment is possible and proportionate NVP can be generated.
Steps involved in Decision Making	Determine the combination of projects to utilize amount available. Compute NVP of each combination. Select the combination with maximum NVP.	Compute PI of various projects and rank them. Projects are selected based on maximum Profitability Index.

XII. SOCIAL COST BENEFIT ANALYSIS

An increasing awareness in our society in recent times is that business managers are made increasingly responsible for consequential social and environment impact. Changing environment and social parameters have compelled them to revalue their social as well as economic obligations towards the needs of the society since society provides the requisite working infrastructure and facilities. Hence, the organization has to present the accounting system, which will reflect the social and economic benefits created by it as well as the costs incurred with which to appraise its contribution towards solving the problems of society.

‘Social Costs’ are scarifies of the society for which the business firm is responsible like air pollution, water pollution, deficiency due to bankruptcy, soil erosion, deforestation, production of dangerous products, explosives, etc. ‘Social benefits’ are the compensation made to the society as the form of increase in per capital income, employment opportunities, etc.

Need for Social Cost Benefit Analysis (SCBA) –

- a. Market prices used to measure costs and benefits in project analysis do not represent social value due to imperfections in market.
- b. Monetary cost and benefit analysis fails to consider the external effects of projects.
- c. Taxes and subsidies are monetary costs and gains, but these are only transfer payments from social point of view and therefore irrelevant.
- d. It is essential for measuring the redistribution affects of benefits of a project as benefits going to poorer section are more important than are going to economically better off sections.
- e. Projects manufacturing liquor and cigarettes are not distinguished from those generating electricity or producing necessities of life.

MODIFIED INTERNAL RATE OF RETURN (MIRR).

There are several limitations attached with the concept of the conventional Internal Rate of Return. The MIRR addresses some of these deficiencies e.g., it eliminates multiple IRR rates; it addresses the reinvestment rate issue and produces results which are consistent with the Net Present Value method.

Under this method, all cash flows, apart from the initial investment, are brought to the terminal value using an appropriate discount rate (usually the Cost of Capital). This results in a single stream of cash inflow in the terminal year. The MIRR is obtained by assuming a single outflow in the zeroth year and the terminal cash inflow as mentioned above. The discount rate, which equates the present value of the terminal cash inflow to the zeroth year outflow, is called the MIRR.

II. VARIOS WAYS IN WHICH WORKING CAPITAL CAN BE CLASSIFIED

Working Capital can be classified based on (a) Concept or (b) Time Factor.

- a) Based on Concept – Gross and Net Working Capital:

Gross Working Capital = Current Assets only.

Net Working Capital = Current Assets Less Current Liabilities

- b) Based on Time Factor – Permanent and Temporary Working Capital.

Permanent Working Capital: It is the minimum level of investment required in the business at any point of time and hence at all points of time. It is also called Fixed or Hard Core Working Capital.

Temporary Working Capital: It represents working capital requirements over and above permanent working capital and is department on factors like peak season, trade cycle, boom etc. it is also called as Fluctuating or Variable Working Capital.

IV. IMPORTANCE OF THE WORKING CAPITAL CYCLE

Meaning: Working Capital Cycle or Cash Cycle or Operating Cycle is the time duration for

conversion of cash into cash equivalents like Raw Materials, Work-in-Progress, Finished

Goods, sundry Debtors and thereafter back into cash.

Segments: The operating cycle has the following phases or Segments:

Conversion of Cash into Raw Materials – Lead Time		Cash
Conversion of Raw Materials, into WIP and then into Finished Material	Debtors	Raw
Goods – Production / Process Cycle		
Conversion of Finished Goods into Debtors through Sales		
Stockholding Period	Finished Goods	
WIP		
Conversion Receivables into Cash – Average Collection Period.		

Computation: Operating Cycle is computed in terms of number of days (or sometimes in months), it is computed as under:

Operating Cycle = (Raw Material Storage Period + WIP holding Period + Finished Goods Storage Period + Debtors Collection Period) Less Creditors Payment Period

The various components of working capital cycle are computed as under:

XVII. TREASURY MANAGEMENT

Treasury Management refers to efficient management of liquidity and financial risk in business.

The responsibilities of Treasury Management include:

- Management of Cash, while obtaining the optimum return from surplus funds;
- Management of foreign exchange rate risks, in accordance with the Company policy;
- Providing long-term and short-term funds as required by the business, at the minimum cost;
- Maintaining good relationship and liaison with financiers, lenders, bankers and investors (shareholders); and
- Advising on various issues of corporate finance like capital structure, buy-back, mergers, acquisitions, disinvestments etc.

XV. FUNCTIONS OF THE TREASURY DEPARTMENT

The responsibilities of the Treasury Department are discharged through its functions. These are as under:

- Cash Management:** This involves aspects such as:
 - Planning or forecasting future cash requirements through cash Budgets.
 - Efficient collection of receivables and payment of liabilities through float management.
 - Monitoring of funds position at various divisions / branches and identifying surplus or idle funds to transfer them to other divisions.
 - Investment planning or parking of surplus funds in marketable securities to optimize return
 - Centralization of collections and release of funds to various divisions.
- Currency Management:** This involves aspects such as:
 - Managing the foreign currency risk exposure through hedging or forward or futures.
 - Timely setting or setting off of intra-group indebtedness when there are divisions in various countries.
 - Matching transactions of receipts and payments in the same currency to save transaction costs.
 - Decision on currency to be used while invoicing export sales.
- Funding or Financing Management:** This involves aspects such as:
 - Planning of long-term, medium, medium-term and short-term cash needs.
 - Participation in decisions concerning capital structure, dividend payout etc.
 - Obtaining the fund requirements from various sources like bank loans, public issues etc.
- Banking Liaison:** This involves aspects such as:
 - Maintaining cordial and good relationships with bankers, lending institutions and financiers
 - Coordinating, liaisons and negotiating with the lenders during the course of obtaining finance.

e) Corporate Finance: This involves aspects like:

Advising on various issues such as buy-back, mergers, acquisitions and divestments.

Investor relationships.

Capital Market Intelligence – obtaining information on market trend, timing of public issue etc.

VARIOUS TYPE OF FLOATS IN THE CONTEXT OF CASH MANAGEMENT

The term “float denotes a delay or lag between two events. In the context of cash management, the term float is usually used for the following delays

Dispatch of Finished Goods to Consumer

Billing Float

Preparation of Bill or Invoice

Mailing Float

Receipt of invoice by customer

Credit Period

Payment of amount due under the invoice

Mailing Float

Receipt of Cheque (by the **Seller**)

Cheque Processing Float

Deposit of Cheque into Bank

Banking Processing Float

Credit of Cheque by Bank

To convert receivables into cash quickly, all the floats have to be reduced to the minimum. While credit period is considered as a policy decision, all other floats can be reduced by judicious managerial action.

MEASURES FOR REDUCING VARIOUS FLOATS IN MANAGEMENT OF CASH

Some measures to reduce floats in Cash Management are:

Type of Float	Technique
Billing Float	Immediate preparation of bill, on the date of dispatch of goods
Mailing Float – in sending invoice to customer	Use of faster modes of mailing, including e-mail Sending the invoice by fax first, followed by normal mail.
Mailing Float – receipt of cheque from customer Cheque Processing Float Banking Processing Float	Concentration Banking and Lock Box System

XXV. WILLIAM J. BAUMOL'S EOQ MODEL FOR OPTIMUM CASH BALANCE.

The Baumol model on Optimum Cash Balance is similar to Wilson's model on raw material EOQ.

Assumptions: the Optimum Cash Balance model is based on the following assumptions:

- a) Uniform Cash Flows: Cash payments arise uniformly during a year. For example, if the total annual cash outflow is Rs.36,00,000 and there are 300 working days, the average payment per day = $\text{Rs.}36,00,000 / 300 \text{ days} = \text{Rs.}12,000 \text{ per day}$.
- b) Fixed Transaction Costs: Surplus Cash can be invested in short-term marketable securities. However, for every purchase of securities (i.e. investments) and for every sale (i.e. disposal of investments), fixed transaction costs are incurred e.g. brokerage, registration costs, clerical expenses etc. hence, these costs rise along with the number of transactions (i.e. purchase and sale of securities).
- c) Fixed Holding Costs: Surplus cash, if held by the firm, entails loss of interest at a fixed rate. This constitutes the carrying costs of cash, i.e. the interest foregone on marketable securities.
- d) Free marketability: Short-term instruments can be freely traded. The firm can invest them at anytime and sell off / dispose investments at any time.

Theory: according to this model, optimum investment size is that level of investment where the total of carrying costs and transactions costs per annum are the minimum. At that point, these two costs are equal and constitute half of the total costs.

Formula:

Optimum Investment Size =

Where A = Annual Cash Requirements

T = Costs per Transaction

I = Interest rate, i.e. Carrying Cost per rupee

Limitation of Baumol Model

The limitation of the Baumol's model is that it does not allow the cash flows to fluctuate. Firms in practice do not use their cash balance uniformly nor they are able to predict daily cash inflows and outflows. The Miller-Orr (MO) model overcomes this shortcoming and allows for daily cash flow variation.

XXVI. MILLER-ORR CASH MANAGEMENT MODEL

Stochastic Cash Flow Assumption: Under this model, cash payments are presumed at different amounts on different days, i.e. stochastic. In practice, the payment flow is not uniform. For example, wage and salary payment arises in the first week; telephone bills fall due for payment once in a month etc. with this assumption, this model is designed to determine the time and size of transfers between an investment account and cash account.

Theory: This model operates as under:

- a) Cash outflows are not uniform during the year.
- b) Upper and lower limits can be fixed for cash balances, as outflows do not exceed a certain limit on any day. These limits are determined based on fixed transaction costs, interest foregone on marketable securities and the degree of likely fluctuations in cash balances.
- c) When cash balance reaches the upper limit, surplus cash is invested in marketable securities, to bring down the cash balance to the average limit or return point.
- d) When cash balance touches the lower limit, investments (marketable securities) are disposed off so that cash balances goes up to the average limit or return point.
- e) During the period when cash balance stays between high and low limits, there are no transactions between cash and marketable securities.

XXVII. RECENT DEVELOPMENT IN CASH MANAGEMENT

Now-a-days, electronic delivery and payment system are becoming increasingly important because of increased competition and the demand for more efficient and convenient capabilities. A considerable number of transactions and amounts of funds can be moved electronically from one place to another almost instantaneously. Therefore, we can easily observe the rapid transactions from the most basic and traditional principles to now complex strategies dominated by the technology and globalisation, but the basic goal is same i.e. the efficient utilization of cash in a way which is consistent with the overall strategic objectives of a business unit.

- a. **Electronic Fund Transfer:** with the developments, which took place in the information technology, the present banking system is switching over to the computerization of banks branches to offer efficient banking services and cash management services to their customers. The network will be linked to the different branches, banks. This will help the customers in the following ways:
 - Instant updation of accounts
 - The quick transfer of funds.
 - Instant information about foreign exchange rates.
- b. **Zero Balance Account:** For efficient cash management some firms employ an extensive policy of substituting marketable securities for cash by the use of zero balance accounts. Every day the firm totals the cheques presented for payment against the account. The firm transfers the balance amount of cash in the account if any, for buying marketable securities. In case of shortage of cash the firm sells the marketable securities.
- c. **Money Market Operations:** One of the tasks of 'treasury function' of larger companies is the investment of surplus funds in the money market. The chief characteristic of money market banking is one of size. Banks obtain funds by competing in the money market for the deposits by the companies, public authorities, high Net worth Investors (HNI), and other banks. Deposits are made for specific periods ranging from overnight to one year, a highly competitive rates which reflect supply and demand on a daily, even hourly basis are quoted.
- d. **Petty Cash Imprest System:** for better control on cash, generally the companies use petty cash imprest system wherein the day-to-day petty expenses are estimated taking into account past experience and future needs and generally a week's requirement of cash will be kept separate from making petty expenses.
- e. **Management of Temporary Cash Surplus**
Temporary cash surpluses can be profitably invested in the following:
 - Short-term deposits in Banks and financial institutions.
 - Short-term debt market instruments.
 - Long-term debt instruments.
 - Shares of Blue chip listed companies
- f. **Electronic Cash Management System:** Most of the cash management systems now-a-days are electronically based, since 'speed' is the essence of any cash management system. Electronically, transfer of data as well as funds play a key role in any cash management system. Various elements in the process of cash management are linked through a satellite. Various places that are interlinked may be the place where the instrument is collected, the place where cash is to be transferred in company's account, the place where the payment is to be transferred etc.

Certain networked cash management system may also provide a very limited access to third parties like parties having very regular dealings of receipts and payments with the company etc. a finance company accepting deposits from public through sub-brokers may give a limited access to sub-brokers to verify the collections made through him for determination of his commission among other things.

Benefits: Good cash management is a conscious process of knowing:

When, where and how a company's cash needs will arise.

Knowing what are the best sources of meeting at a short notice additional cash requirement.

Maintaining good and cordial relations with bankers and other creditors.

- g. Virtual Banking: the practice of banking has undergone a significant change in the nineties. While banks are striving to strengthen customer base and relationship and move forwards relationship banking, customers are increasingly moving away from the confines of traditional branch banking and are seeking the convenience of remote electronic banking services. And even within the broad spectrum of electronic banking the virtual banking has gained prominence.

Broadly virtual banking denotes the provision of banking and related services through extensive use of information technology without direct recourse to the bank by the customer. The origin of virtual banking in the developed countries can be traced back to the seventies with the installation of Automated Teller Machines (ATMs). Subsequently, driven by the competitive market environment as well as various technological and customer pressures, other types of virtual banking services have grown in prominence throughout the world.

XXIX. ASPECTS OF MANAGEMENT OF DEBTORS

The three basic aspects of management of sundry debtors are:

- 1) Credit Policy – decisions on credit period to be allowed, early payment discount rates etc.
- 2) Credit Analysis – decision on whether credit can be extended to a particular customer
- 3) Control over Receivables – steps for debtors follow-up, faster collection of debtors

XXXI. COSTS OF MAINTAINING RECEIVABLES

The cost of maintaining receivables comprises the following:

- 1) Interest on Investment: Additional funds are blocked in receivables. This involves cost in the form of interest (in case of loan funds) or opportunity cost of capital (in case of own funds).
- 2) Administrative Costs: Costs of record keeping, investigation of credit worthiness etc.
- 3) Delinquency Costs: Cost of reminders, phone calls, follow-up letters etc.
- 4) Collection Costs: Cost of contacting customers, collecting cheques in person, outstation collection charges, etc.
- 5) Defaulting Costs: Bad debts, legal charges in respect of suits pending against debtors etc.

Note: These costs are compared with benefits, i.e. Additional Contribution, in the evaluation of credit period or credit policy.

XXXII. CREDIT POLICY

Credit Policy: This involves decisions relating on the following aspects of credit:

- 1) Length of the credit period;
- 2) Discount Policy;
- 3) Other special items.

Role: The credit policy determines the investment in sundry debtors, average collection period and bad debt losses. Hence, credit policy of a firm should enable it to achieve the following objectives:

- 1) Increasing sales and market share
- 2) Increasing profits due to higher sale and higher sale and higher sale and margins on credit sales.
- 3) Meeting competition.

XXXIII. CREDIT PERIOD

Meaning: Credit Period denotes the period allowed for payment by customers, in the normal course of business.

Factors: Credit period depends on a number of factors, for example:

- 1) Nature of product i.e. if demand is inelastic or if product is perishable, credit period may be small.
- 2) Quantum of Sales – Credit may not be allowed if small quantities are purchased.
- 3) Customs and Practices – normal trade practices and those followed by competitors
- 4) Funds available with the Company
- 5) Credit Risk i.e. possibility of bad debts

Expression: The credit period is generally stated in terms of net days. For example, if the credit terms are “net 45”, it means that customers will repay credit obligations not later than 45 days.

XXXIV. DISCOUNT POLICY

Meaning: in the context of Debtors Management, Discount Policy involves decisions relating to:

Percentage of Cash Discount to be offered as incentive for early settlement of invoice
Period within which cash discount can be availed.

Role: Discounts are given to speed up the collection of debts. Hence, it improves the liquidity of the seller. It also ensures prompt collection and reduces risk of bad debts.

Expression: Normally, credit terms are expressed in this order: (a) the rate of cash discount, (b) the cash discount period and (c) the net credit period. For example, credit terms of “2/10 net 60” means that a cash discount of 2% will be granted if customer pays within 10 days; if he does not avail the offer he must pay within 60 days, being the credit period.

XXXV. FACTOR TO BE ANALYSED BEFORE CREDIT IS GRANTED TO A CUSTOMER

A firm selling on credit terms cannot extend credit to all customers. Credit granting decision is taken on a case – to – case basis, based on the following illustrative factors:

- a) Nature of Product: Generally perishable items are sold on “cash and carry” basis, while durable / non-perishable items may be sold on credit.
- b) Nature of customer: A Valued customer, who has long and favourable past dealings with the firm may be given credit immediately, than a new customer. However, credit may also offered for attracting new customers.
- c) Quantity purchased: Firms may decide to grant credit only beyond a certain lot size. For most example sale up to 5 kg per invoice is made on cash basis only, while orders beyond 5 kg may be supplied on credit.
- d) Value of Sales: Sometimes, the invoice value (instead of quantity) may be the determinant in a credit decision. For example, credit may be granted for amounts exceeding Rs.15, 000/-
- e) Credit worthiness of the customer: The credit-worthiness of the customer is the most crucial factor in deciding whether credit should be granted or not. This is based on past experience (for existing customers) and credit analysis (for existing and new customers).
- f) Risk of Bad Debts: The extent of risk of bad debts that a firm can bear should be determined. For example, if there is a 1% chance of bad debts, the firm may take the risk of credit supply, but when the chance of bad debts is 55%, credit should not be granted.

Credit granting is a two-phase decision making process:

Phase I - Whether Credit should be granted at all? – Decision to be based on Credit Rating.

Phase II - up to what limits and how long credit be granted? – Decision to be based on Cost Benefit Analysis.

XXXVI. VARIOUS SOURCES OF CREDIT RATING INFORMATION

Credit rating of a customer involves finding answers to two broad questions:

- 1) Can he pay? i.e. ability or financial strength.

- 2) Will he pay? i.e. attitude in meeting payment obligations.

A firm has to ascertain the credit rating of prospective customers, to ascertain how much and how long can credit be extended. Credit can be granted only to a customer who is reliably sound. This decision would involve analysis of the financial status of the party, his reputation and previous record of meeting commitments.

The following are the important sources of credit information:

- 1) Trade references: The prospective customer may be required to give two/three trade references. Thus, the customers may give a list of personal acquaintances or some other existing credit-worthy customers. The credit manager can send a short questionnaire, seeking relevant information, to the referees.
- 2) Bank references: Sometimes, the customer is asked to request the banker to provide the required information. In India, bankers do not generally give detailed and unqualified credit reference.
- 3) Credit bureau reports: Associations for specific industries may maintain a credit bureau, which provide useful and authentic credit information for their members.
- 4) Past experience: The past experience of dealings with an existing customer is a valuable source of essential data. The transactions should be carefully scrutinized and interpreted for finding out the credit risk involved.
- 5) Published financial statements: published financial statements of a customer, (in case of limited companies) can be examined to determine the credit-worthiness.
- 6) Salesman's interview and reports: Credit -worthiness can be evaluated by the reports provided by consulting salesman or sales representatives. Such reports provide first hand information to the Company for proper determination of the credit limit.

XXXVII. COLLECTION POLICY

Role of collection Policy: Average Collection Period and Bad Debt losses are reduced by efficient and timely collection of debtors. Hence, a proper collection policy should be laid down.

Aspects of Collection Policy: The following aspects should be covered in Collection Policy and procedures.

Timing of the collection process – when to start reminding etc.

Dispatch of reminder letters to Customers.

Personal follow-up by Company's representatives and telephonic calls.

Appointment of agents for collection or follow-up.

Dealing with default accounts, legal action to be initiated, notice to defaulting customer etc.

Cost Benefit Analysis: There are certain routine costs associated with collection from customers e.g. contacting customers, collecting cheques in person, collection agency fees etc. if a firm spends more on collection of debts, it is likely to have smaller bad debts. Hence the amount of collection costs to be incurred should be determined by Cost-Benefit Analysis i.e. level of expenditure on one hand and decrease in bad debt losses and investment in debtors on the other.