Chapter – II

CONCEPT AND COMPONENTS OF WORKING CAPITAL
2.1 CONCEPT OF WORKING CAPITAL

The concept of working capital was, perhaps, first developed by Karl Marx. But this was in different shape. According to him, there were two types of capital in an organization: constant capital and variable capital. The constant capital was termed by him as dead labour which indicates the outlays for raw materials and other means of production produced by the labour in the earlier stage. This is now necessary for the live workers to work in the present stage. But the term 'variable capital' refers to the wage fund which remains blocked in work-in-progress, finished goods along with the other operating expenses, until sales take place. The term working capital, as we understood today, is synonymous with his variable capital.

But with the evolution of this concept, the controversy comes out about the definition of working capital. Generally, there are two concepts of working capital: gross concept of working capital and net concept of working capital. Gross concept of working capital refers to the firm's total investment in current assets or it is the sum total of all current assets available in a firm at a particular point of time.

But the net working capital is the difference between current assets and current liabilities. As it represents the excess of current assets over current liabilities, so it can either be positive or negative or in a rare situation it would also be zero. When current assets exceed current liabilities, the net working capital is found to be positive. It should be negative when current assets are less than current liabilities.

Current assets are those assets which are converted into cash within a 'natural business year' and without undergoing a diminution in its value. The major current assets of a firm are cash, marketable securities, account receivable, inventories etc.

But current liabilities are those which are to be paid within also a 'natural business year'. The term 'natural business year' means a period within which an activity cycle is completed. The nature of the assets is actually dependent on the technological requirements and trading practices. Therefore, the main yardstick of judging the currentness of both assets and liabilities would be this 'natural business year'.

The economists like Mead, Malott, Baker and field are always in favour of the former concept. Their logic is that the all current assets of the firm are engaged in earning revenue and the management has to deal with all the current assets because they form the total funds required for operational purposes.

On the other hand, economists like Lincon and Saliers advocate in favour of net concept of working capital. Their views in this respect are that, this concept helps the creditors and investors to judge the financial soundness and liquidity of the business. Institute of Chartered Accountant of India, while suggesting the vertical form of balance sheet, also supports this concept of working capital.

Some other experts opine the net concept as qualitative concept and the gross concept as the quantitative concept. The net concept actually indicates the liquidity position of the firm. This also gives an idea about that part of working capital which is financed from the long term or permanent sources of fund. The current assets of a firm would be sufficient and in excess of current liabilities to provide a margin or buffer for maturing obligations within the 'normal business year'. The creditors in a company are always interested with a very high positive net working capital in order to protect their interest. The negative net working capital or a weak liquidity position always threats to the solvency of the company and makes it unsafe and unsound. This also appears to be harmful to the company’s reputation and the management never expects such a situation to be faced in the business.

Although the concept of net working capital measures the liquidity but it is not a useful criterion for comparing the performance of different firms. But it is quite useful for internal control. It helps to compare the liquidity position of the same firm over time. It is just like an index to provide the financial soundness or margin of safety for the current liability holders. It also gives an idea about their future protection.

Working capital is as like as heart in human body. When the funds are invested in business as working capital, then the circulation starts and we feel the life of the business. But when the circulation stops, the business becomes lifeless. So, only an enlightened management of working capital can manage the business successfully and can protect the interest of all concerned with the business.
2.2 CONCEPT OF OPERATING CYCLE

Traditionally, the working capital requirement of a firm is determined by the balance sheet approach. The requirement for working capital in this case is determined with reference to the current assets and current liabilities and for this, current liabilities are deducted from current assets. But this method suffers from a series of drawbacks. For avoiding such drawbacks; the balance sheet approach for determining the working capital requirements is now replaced by modern approach, called operating cycle approach.

"The continuous flow from cash to suppliers, to inventories, to account receivables and back into cash is called the operating cycle." In other words, the length of time required to complete the following cycle of events:

- Conversion of cash into inventories.
- Conversion of inventories into receivables
- Conversion of receivables into cash again.

Phase-I

In this phase, cash is converted into inventory. This also include the purchase of raw materials, conversion of raw materials into finished goods through manufacturing process and transfer of finished goods to the store. But in case of trading organization, the length of this phase is shorter because of the absence of manufacturing activities. The cash is directly converted into stock of finished goods in that case. In case of service rendering organization this phase is totally absent.

Phase-II

In this phase, the inventories are converted into receivables through credit sales. If the organization adopts the cash sales strategy, this phase will obviously be absent in the operating cycle.

Phase-III

This is the last and final phase. In this phase cash are collected from the debtors and then the next cycle starts. This process is going on in the same sequence throughout the life of the firm.
The length of operating cycle for a manufacturing concern is the sum total of the inventory conversion period and the debtors conversion period. Inventory conversion period also includes the raw material conversion period, work-in-progress conversion period and finished goods conversion period. On the other hand, debtors conversion period refers to the time required for the collection of dues from the debtors. The sum total of the two is called the gross operating cycle.

In reality, the firm may require resources on credit and can postpone payment for certain expenses for a certain period. The facility for such deferral payment creates the spontaneous sources of capital. The ability of the firm to defer the payment for consuming different resources is called payable deferral period. The difference between the gross operating cycle and payable deferral period is called the net operating cycle or the cash conversion cycle.

In fact, this net operating cycle indicates the net working capital of the manufacturing concern. But this should not be equivalent to the ‘natural business year’ within which all the current items will be matured. If it is possible for a firm to arrange credit from the suppliers of raw materials for a period equivalent or exceeding the gross operating cycle, the net operating cycle would either be zero or negative. The situation like this contradicts the concept of operating cycle. Because in such a case all the current items would either be matured within zero or negative days. So it can be said that the net operating cycle concept mixes up the financing aspect with the operating cycle of the business.

If we, therefore, follow the ‘natural business year’ logic, the true operating cycle of the firm would be either the days of current assets or the days of current liabilities, whichever is higher and only in such an operating cycle all current items will be matured.

2.3 COMPONENTS OF WORKING CAPITAL

Working capital is defined as the consisting of those assets which are held for current use less the liabilities waiting for settlement in the short term. The detailed components of working capital are given below:

a) Current assets

2. Debtors for goods sold in credit
3. Prepayments
4. Bills receivable
5. Investment (which are readily realisable)
6. short term loan & advance
7. Cash in hand and balance at bank etc.

b) current liabilities

1. creditors for goods supplied
2. outstanding expenses
3. provision for taxation
4. bank overdraft
5. bills payable etc

2.4 DETERMINANTS OF WORKING CAPITAL

In order to bring success in business, the management of working capital has to ensure the proper utilization of working capital of the firm and at the same time it has to ensure that the firm does not suffer at any time due to the insufficiency of working capital. There are no set rules or formulas to estimate the proper needs of working capital for a firm. The management of the firm has to consider a number of factors for determining the optimal level of working capital. Some of which are depicted below-

Nature of the business: One of the important factors in determining working capital needs of a firm is the nature of the business. In a trading concern the requirements for
working capital is very high because it has to hold the stock of variety of items in order to satisfy the needs of large section of customers. But in the trading and financial concerns the investment in fixed asset is very low. In public utility concern, the requirement for fixed assets is very large as compared to the investment in working capital, as they do not have to hold inventory but their sales are also occurred in cash. In manufacturing organization, requirement for working capital is much more than the public utility and trading concerns, as they have to build up stock of inventory for raw materials, work-in-progress and finished goods etc.

**Scale of operation:** It refers to the size of the business which is one of the influencing factors in determining the working capital needs of a firm. A firm having a large scale of operation requires more working capital than a firm with a small scale of operation.

**Business cycle:** Every economy faces cyclical fluctuation which influences the requirements for working capital to a greater extent. This fluctuation takes place in two direction upswing and downswing. During upswing, the need for working capital increases resulting from an increase in sales. But during downswing or recession, the investment in working capital will also increase because of the fact that the inventories are lying unsold and book debts remain uncollected. This situation can only be tackled by the prudent management by predicting in advance the forthcoming situation and as a result, the investment in working capital may fall automatically.

**Production policy:** If the demand for the product of a firm is seasonal, the requirement for working capital depends on the production policy adopted by the firm. If the firm adopts the steady production policy throughout the year, there should be the large accumulation of inventories in the off-season and the firm has to incur higher cost for maintaining large inventory and to bear higher degree of risk. This situation can be avoided if the firm adopts the varying production policy in accordance with the change in demand. This type of policy enables the firm to solve the problems associated with the working capital needs. Some firms may have the opportunity to remain stick to their original line of production during the period of their peak demand and diversity production in slack session in order to utilize their
existing physical capacities and human resources and accordingly can solve the problems of working capital management.

**Growth & Expansion:** It is a very general matter that with the growth and expansion of business activities, the requirement for working capital of a firm increases. But it is not so much easy to set the precise relationship between the growth in the volume of business and increase in requirement for working capital. This is to be kept in mind that the need for increased requirement for working capital may precede the growth in business activities rather than following it.

**Rise in price level:** A firm's requirement for working capital may be affected by the rise in price level. It is a very simple matter that the rise in price level requires additional investment in working capital. The same level of current assets requires much more investment in compare to the earlier period due to the rise in price level. Therefore, the firm has to face additional difficulties to make provision for it. But this problem can be solved to some extent if the firm can revise the price of its product immediately.

**Operating efficiency:** Operating efficiency means the effective utilization of resources which ensures the maximum outputs by employing the given level of inputs. It is also an important indicator of managerial efficiency and which have the two fold impacts on profitability as well as on working capital requirements.

**Depreciation policy:** Depreciation is nothing but the allocation of the expired cost and for which no cash outflow is required. It is a mere book entry. But the depreciation has the impact on the profitability of the firm. Higher the amount of depreciation, the lower will be the profit and vice versa. The important matter in that case is the selection of method for providing depreciation. If the current capital expenditure is below the depreciation provision made in this regard, the working capital position will be strengthen to some extent and no need for short term borrowings. But if the depreciation provision is much lower than the current capital expenditure, then a certain part of such expenditure is to be financed from working capital or provision for depreciation will have to be increased.
**Dividend policy:** Another important factor which has the dominant influence on the working capital requirements of a firm is the dividend policy. As the dividend is paid in cash, so the strong cash or working capital position is to be justified before taking decision for such payment, though the earnings are sufficient to cover the payment. Therefore, the shortage in cash position or weak working capital position forces the firm to reduce or to avoid the payment of cash dividend. If the firm adopts the conservative policy for payment of dividend, the need for working capital can be met partially out of retained earnings. But the adoption of liberal dividend policy creates a situation to outflow a large amount from the pool of working capital fund.

**Production cycle:** Production cycle refers to the length of time required in processing or manufacturing a product. It starts with the procurement of raw materials and ends with the completion of finished goods. Larger the time required for processing the goods, the more will be the requirement of working capital. Any delay in any stage of production process, results in accumulation of work-in-progress. This leads to the larger requirement of working capital. In some special cases, a firm having long manufacturing process can reduce the investment in working capital by taking advance payment from their customers.

**Availability of raw materials:** Availability of raw materials will also have an impact on working capital requirements of a firm. If the raw materials are regular in supply, then the minimum stock is to be maintained for that and as a result, the requirement for working capital would be minimum. But if the supply of raw materials is irregular and seasonal, the raw materials are to be collected in time and store them in advance for the consumption of the whole year in order to ensure the uninterrupted production schedule. In such a case, the requirements for working capital would be larger.

**Credit policy:** Credit term granted by the concerns to its customers as well as credit term granted by the suppliers to the concern can influence the working capital requirements of the firm. If a firm purchases all of its requirements in credit but sells its product in cash, less amount of working capital will be required. In a reverse situation, the needs of the same would be higher. If the credit period allowed to the debtors is reduced on the one hand and the period of re-payment to the creditors enhanced on the other hand, in such a situation the requirement for working capital
will decrease and vice versa. But the credit policy of the firm is being fixed by considering a number of factors, viz, market competition, prevailing trade practices, liquidity position of the firm and that of the customers etc. Therefore, at the time of planning for working capital requirements of a firm, the credit policy to be adopted by the firm should be taken into consideration and also its impact on the working capital requirements should also be assessed.

**Level of tax:** This is an obligation of the firm and which is to be always paid in cash. Naturally, it indicates an outflow of cash. This is also playing an important role in determining the working capital requirements. This is nothing but a certain part of profit which is either paid immediately or set aside as provision as per prevailing income tax rates and rules & regulations. If the amount of provision increases, it will lead to an increase in the requirements of working capital and vice versa for the payment subsequently.

**Rapidity of inventory turnover:** Rapidity in inventory turnover can influence the working capital requirements of a firm. If the inventory turnover ratio is high, requirements for working capital would be low. But if the inventory turnover ratio is very low due to the existence of large volume of slow moving items, the firm has to arrange large volume of working capital. So, with the better management of inventory, the working capital requirements of a firm can be reduced.

**Retention policy:** Generally a part of the profit earned in a year is retained in the business for future exigencies and reinvested for the succeeding period. This technique termed as ploughing back of profit. But what amount of profit to be set aside will depend on the dividend policy as well as retention policy of the firm. This retained amount can fulfil the need for working capital to some extent. Therefore, the amount of working capital can be increased in a firm by increasing the amount of retention and vice versa.

**Change in technology:** Due to the changes in technology, the firm can enjoy some benefits by way of improving rapidity in production process, savings in wastage etc. As a result, the firm may be able to reduce investment in inventory. Moreover, if the firm adopts the capital intensive technique of production, the requirements for
working capital would be reduced. But in case of labour intensive production process, the requirements for that would be higher due to the long processing period.

**Other factors**: In some special types of business, additional fund is required to be maintained for inherent hazards and contingencies which will lead to the requirements for additional working capital.

Besides these, the need for working capital also depends upon the infrastructural facilities available in the economy, such as, transportation, communication etc. If they are not well developed, the industries will have to keep huge stock of raw material, finished goods, spares etc. at the place of production as well as, at the distribution centres. For this large amount of working capital would be needed.
2.5 INVENTORY MANAGEMENT

Of the different components of current assets, the inventories occupy the most important and significant position in the working capital structure in most of the organizations. This is not for the cause that the level of inventories in an organization claim a substantial portion of the total investment but it constitutes the major portion of cost of production in many manufacturing enterprises. As a result, a great deal of control is to be exercised on inventory in order to reduce the cost of production and to gain the competitive power in the market. For this reason, the efficient management of working capital is to be cautious to avoid the unnecessary investment in inventories and to hold the desirable level of inventory at each and every point of time in order to carry out uninterrupted production and sales. Only the effective management of inventory in a scientific way can bring prosperity in an organization and at the same time paves the way of industrial development.

In India, the investment in inventories is about 60% of the total current assets of the organizations. Because of the large size of inventories, the firm has to incur considerable amount of cost for its investment. Therefore, the management has to take important steps for its financing from the cheapest sources as much as possible and also to avoid the unnecessary accumulation of stock. But the holding of inventories should not be allowed to come down to such a level that the organization suffers. If inventories are out of stock, it creates two situations, either to stop production due to non-availability of raw material or it forces the customers to turn to the competitors which results in loss of sales. Excessive holding of inventories causes excessive cost of investment on the one hand and excessive holding cost on the other hand, both of which have the unfavourable impact on the profitability of the firm. So the management is to manage inventories efficiently and effectively in order to avoid unnecessary investment. The main objective of the inventory management is to maintain the desirable level of inventories at the right place, at the right time and at low cost.

The costs associated with the maintenance of inventories are different in categories. Mainly two types of cost are there: Ordering cost and Carrying cost. Carrying cost is that type of cost which is incurred for holding the inventories in
godown, which are interest on investment, godown rent, insurance cost etc. But the ordering cost is the procurement expenses incurred in each time of placing order for getting fresh delivery, such as, cost of stationery, cost of inspection and receiving delivery and the cost of running stock out (i.e. stock out costs). The purpose of inventory management is also to make balances between the above two types of costs. Naturally, the cost of holding inventory should be compared with the benefits derived for doing so.

In spite of important component of working capital, inventories are idle assets and generally do not attract any interest because at each and every point of time a particular level of inventory is being maintained as a measure of precaution. From practical experience it is obvious that in no case, it should not be allowed to reduce at nil balance. Therefore, the constant and continuous efforts on the part of the management are required for its proper use.

2.5.1 Need for holding inventory:

Inventory is one of the most important parts of the total asset invested in a business concern for its necessity. Therefore, a firm has to maintain adequate amount of inventory in order to avoid stock out and to carry out uninterrupted manufacturing operation. But for holding the optimal and adequate level of inventory, a firm has to invest considerable amount for this purpose and has to bear costs in various nature for holding such inventory, both of which impair on firm’s profitability.

The firm has the alternative way to avoid such unfavourable situation. If the inventory can be acquired on piecemeal to meet the immediate need, as and when it actually arises, this hand to mouth policy is to be helpful to avoid the average investment in inventory or to reduce the amount of investment in working capital. As a result, the firm will be able to reduce some costs like the interest on investment, storing charges and insurance charges etc., which are necessary for carrying out the stock of inventories. But this policy has some adverse implications. It increases the ordering cost associated with the frequent procurement and the firm may gain the experience of shortage of inventory because of the absence of buffer or safety stock to overcome the expected fluctuations in demand with upward direction. But by comparing the cost of carrying stock of inventory with the cost of shortages and
frequent procurement cost, it should be judicious to the firm to maintain inventory at a higher level than the amount needed to meet its regular need.

From the above discussion, the need for holding inventory are summarised below:

- Transaction motive which ensures the smooth production and sales operation.
- Precautionary motive which tells in favour of holding inventory to avoid the stock out due to the fluctuation in demand with upward direction and unexpected change in supply factors.
- Speculative motive which states to be gainful from the fluctuation in price level in upward direction.

2.5.2 Component of inventory and causes for their existence

The International Accounting Standard Committee has defined inventory as “tangible properties held a) for sale in the ordinary course of business or b) in the process of production for such sale or c) to be consumed in the production of goods and services for sale.”

The following inventories are generally found in a manufacturing concern:

a. Raw material inventory
b. Work-in-progress inventory
c. Finished goods inventory
d. Stock of spares and consumable stores.

Due to holding the uninterrupted production, a company must have to maintain adequate stock of raw materials on continuous basis. There are some other reasons for the maintenance of stock of raw materials. Firstly, due to some exogenous factors the company can not procure the raw material as and when it is needed. Besides these, there is a time gap between the placement of order and supply. Secondly, due to some unavoidable circumstances, like strike, transport disturbance, short supply etc, the company has to maintain such stock. Thirdly, existence of stock of inventories takes place owing to enjoy the benefit of trade discount from bulk purchase and anticipation in rising price level.
The stock of work-in-progress takes place due to the production cycle. Production cycle refers to the length of time required for the conversion of raw materials into finished goods. In other words, the production cycle states about the time span in between the introduction of raw materials into production and emergence of finished goods from the production process. If the cycle remains incomplete at a particular point of time, the stock of work-in-progress takes place.

The production of a product does not coincide with the demand for it at any point of time. As a result, a firm has to maintain the stock of finished goods. Moreover, a firm cannot produce anything immediately as per demand of the customers for it. If the demand for a product is seasonal in nature, the substantial amount of finished goods is to be stored to meet the demand at peak time; otherwise the firm cannot be gainful. Besides the above, in order to maintain the continuous flow of commodity to the market, a firm has to keep finished goods in stock.

The fourth category of inventory is maintained by a firm to meet its day-to-day requirements. This includes office and plant cleaning materials, like soap, broom stick, oil, bulbs etc.

The share of each component in the total inventory varies from concern to concern. This also actually depends on the nature of the organization. The above mentioned four categories are found in a manufacturing concern. But in a trading concern we have the different experience. In trading concern, there is no investment for raw materials and work-in-progress. Only the stock of finished goods is to be maintained in that case. The main aim to control the inventory should be the maintenance of various components at economic level and in right proportion.

2.5.3 Different techniques for inventory control

The main objective of the inventory control is to maintain the stock of inventory at the optimal level, so that the cost associated with the maintenance of such inventory level would be minimum and at the same time it is to be kept in mind that the production and sales operations may not be hampered due to the non availability of adequate inventories. The function of the inventory management is to obtain maximum inventory turnover within a certain period with the fulfilment of all
requirements for inventory. In this case, attention is to be given on all components of inventory at a time. The level of stock of inventory depends on a number of factors, such as availability of finance, the amount of discount allowed, cost of storage, the availability of storage space, order placing and receiving cost, risk of loss due to decline in price level, evaporation, obsolescence etc.

There are two main purposes for exercising control over the inventories. One is to gather the information for the various users of stock and other is to maximize the benefits over costs for holding a certain level of stock. It is prominent to all that when the inventory level increases, the cost of investment in inventories, the chances of obsolescence, wastage etc. will also increase. But at the same time, the firm gains extra ability to satisfy the extra demand of the customers. So the management is to be most careful to compare the benefits with costs before arriving at a particular decision which will be beneficial for the organization to maximize owner’s wealth for holding a certain level of stock.

The finance manager should aim at an optimum level of inventory on the basis of trade-off between benefits and costs to maximize the overall profitability of the firm. Many sophisticated mathematical techniques are in reality to handle the inventory management problem. It is to be remembered that the inventory management is an important part of the total management of an organization and this is totally vested on the top level management to take all decisions regarding inventory.

For controlling the inventory, the management has to think about the optimum level of stock for each component, the optimum re-order period, the optimal time for placing an order. There are a number of decision models and scientific techniques which a firm can use to solve those problems. Some leading and well-known devices for the control of inventory are depicted below:

**ABC Method:**

It is a widely popular technique for exercising control over the items of stock in accordance with their value. This technique is based on the assumption that the firm should not exercise the same degree of control over all items in store. Rather, it should exercise rigorous control on the items which are less in number but larger in
values. In other words, this analytical technique is based on the concept that item of
greater value but less in number should be designated as ‘A’ and to be watched more
closely and looked after by the top management, whereas the items having lower
value but large in number are designated as ‘C’ and which should not call for strict
control and can be kept under the control of lower level management. The items of
middle category both in number and value should be designated as ‘B’ and to be
controlled by the middle level management. The main purpose for classifying stock
into A, B & C categories is to exercise the different degrees of control on the different
items. For the items of ‘A’ category, sophisticated control should be installed but the
‘B’ items may be given less attention and ‘C’ items least attention. The ABC analysis
concentrates control on the items on the basis of their importance in the organization.
For this, it is known as control by importance & exception (CIE). It is obvious to us
that the entire items in store should not be given equal importance and attention. So
the items are to be listed and ranked in accordance of their descending importance
showing both quantity and value of each item.

But, these classifications into three categories are totally arbitrary and optional in
nature. The assignment of an item into a particular category varies from organisation
to organisation. Any organisation may choose to group their inventory into more than
three or less than three categories. However, the principles for such classification
would be the same.

THE PARETO DISTRIBUTION

The Pareto (80/20) Distribution is similar of the concept of ABC method of stock
control. This name is given after the name of an economist, Vilfredo Pareto. His
observation was that 80% of the Nation’s wealth is held by 20% of its population and
so the remaining 80% of the population hold only 20% of the total wealth. This 80/20
analysis has also been applied to other situations, including stock holding. The Pareto
principle in case of stock is that 20% of the items in store account for 80% of the
value of stock in hand. This indicates that strict control should be exercised to those
20% items in order to derive maximum benefit from stock control. The remaining
80% of the stock items do not require such type of control.
VED Analysis

The technique is widely used to exercise control over the spare parts. As the consumption of spare parts is quite different, so the strategy adopted for the control of such stock is also different. The stock of such item does not depend on the market demand but also depends on the performance of the machinery.

Vital, essential and desirable analysis (VED) is adopted is case of controlling spare parts in different categories keeping in mind their importance in production system. Those spares are designated as vital, the stock out of which are not allowed for any duration. These are vital in that sense that the absence of which may stop the production for certain duration.

Those spares are designated as essential, the absence of which can not be tolerated for more than a few hours of a day, such spares are also necessary to continue production.

Lastly, the desirable spares are those which are needed but the absence of which for a week or more does not lead to stop production. Such spares though negligible in value, may be necessary for the continuity of production and also require constant attention on the part of the management.

JIT: Just in time approach is actually applicable for the companies engaged in manufacturing operation, repetitive in nature. This idea was first developed by the Tyota Motor Company in Japan in the year 1950. According to the principle of this technique, the storing of inventory in any concern is not desirable. This is based on the idea that all the required components should be supplied to the production process at right time and in right quantity. This technique tells us that the goods are to be purchased just immediately before their use. This ensures holding of stock as minimum as possible. But in order to be successful under this technique close co-ordination is required between the company and its suppliers. If any difficulty is found on the part of suppliers in supplying materials in time, the production may be delayed and the market supply may be disrupted.
Perpetual inventory system

Perpetual inventory system may be defined as the method of recording store balance after each receipt and issue in order to ensure the regular checking of store items without closing down of work for stock taking. This system states that each and every receipt or issue of materials is recorded in the Bin card and the current stock position is shown. Each and every item in store is counted daily or at frequent interval and compared with the Bin card. Under this system, the re-order level and also the re-order quantity are fixed and the current stock position is compared with the re-order level after each and every issue. If it is below or equal to the re-order level, a fresh order for the fixed number of units is placed. Otherwise, no action is taken. Perpetual inventory system is the sum total of maintenance of Bin card, store ledger and continuous stock taking.

ECONOMIC ORDER QUANTITY (E.O.Q.)

Economic order quantity may be defined as the most favourable quantity or the optimum quantity of materials which can ideally be purchased in each time most economically.

Economic order quantity depends on many factors, such as inventory holding costs, procuring costs etc. Holding costs include interest on capital tied up, warehousing charges, insurance, deterioration, obsolescence, pilferage etc. Procuring or ordering costs are the costs of getting a material into the store and they are incurred in each time an order is placed for the purchase of the items, such as cost of processing purchase orders, receiving and inspection cost etc. But the above two types costs are opposite in nature. If for instance an attempt is made to reduce the carrying cost by keeping stock such as low as possible, the cost of ordering will go up because the number of orders will automatically rise. On the contrary, if to save ordering cost, order is placed for a large quantity at a time, the stock will be lying in store for a long period of time and the cost of carrying stock will increase. Therefore, an attempt is being taken to balance the two types of costs and economic order quantity is fixed at a point where the aggregate cost is minimum. In other words, economic order quantity is the quantity at which the cost of acquisition equals to the cost of possession.
SDE & GOLF Classification

The determination of stock level of any item depends on the sources and its availability. There should be some scarce item which are necessary especially for an organization but for which long lead time is required to get a fresh delivery. The SDE (scarce, difficult and easy to obtain) classification are actually being done on the basis of the availability and sources. Therefore, these two factors are to be taken into consideration in determining the different stock levels of an item.

Determination of different stock level

Another technique for the control of inventory is the ascertainment of different stock level. It is desirable for a concern to make excess investment in inventory or to allow the stock of inventory at such a low level, so that the normal business operation may not be disrupted due to the short supply of inventory. Both of which impair the profitability of the organisation. In order to facilitate the business activities at different point of time, the different stock levels for each item in store are to be maintained, which are:

**Maximum stock level:** Maximum stock level refers to that quantity above which the stock of any item is not generally allowed to exceed in normal situation. The following factors are to be considered in determining this stock level:-

a) financial strength, economy in prices and other financial matters
b) Storage space and the cost of storing.
c) Risk of obsolescence, deterioration, wastage etc.
d) Economic order quantity.
e) Re-order level.
f) Any restriction imposed by any authority regarding the maintenance of stock.

**Minimum stock level:** Minimum stock level of any item indicates that quantity below which the stock of that item is not allowed to fall in normal situation. The factors responsible for determining this stock level are:-

1) Rate of consumption.
2) Nature of the item
3) Time required for getting fresh delivery
4) Re-order level.
**Re-order level**: Re-order level may be defined as that level of stock of an item at which fresh purchase order is initiated for getting fresh delivery. This is fixed in between the maximum and minimum stock level. This level is fixed in such a way so that the level of stock comes to the minimum stock level just immediately before the fresh delivery received. The re-order level is actually dependent on lead time, rate of consumption, economic order quantity etc.

**Safety stock level:**

In order to avoid stock out, it may be necessary to hold safety stock to meet unexpected extra demand in the market. This level is generally below the minimum stock level. This stock is actually used under the situation of excess demand or delay in supply. But in normal situation, it results in excess investment and excess stock holding cost. When actual stock holding touches this level, urgent initiative is to be taken to replenish the stock in order to avoid the interruption in manufacturing operation.
2.6 Receivable management

Receivable is also an important part of the working capital of a firm. Its importance as a part of working capital is just immediately after the inventory. Significant part of the total investment in assets of a firm is blocked in this type of current assets. Probably in India, it accounts for one-third of the total current assets of a firm. So the management of working capital has to employ much more attention to the management of receivables. If a firm's management can exercise effective control over this type of asset, the investment in this asset or the size of it can come down to a great extent. Normally, the working capital requirements of the firm can also be reduced remarkably and the firm can get relief partially from financing this asset.

The existence of this type of current asset takes place when a firm sells its goods or services to the customers in credit and for which no cash amount is received immediately at the time of delivery. This situation actually arises due to the firm's interest. This is undoubtedly, a marketing tool for enhancing sales volume and as well as the profitability of the firm. It acts as a bridge between the production and distribution to the customers.

The total sales of a firm depend on some exogenous factors, viz, market size, firm's share in the market, quality of the product, existence of the competitors and their sales strategy, socio-economic conditions etc. A firm has no influence over these variables. But this strategy for enhancing sales volume is totally optional to a firm. The percentage of credit sales to total sales depends on the nature of the business as well as the industry norms.

A firm grants credit to its customer in order to maintain its market share and to attract the potential customers at favourable terms which may result in increasing the market share of the firm. Such a decision begets receivables which will be collected in near future. The receivables generated from credit sale and expected to be collected in future are called debtors. This implies the firm's claim against persons i.e., an asset of the firm. But there are some adverse consequences of such marketing strategy, which are:-
a) **Firstly**, it involves high risk for the non-realisation of dues from the customer. In other words, there may be the chances of bad debt. At the same time an extra initiative on the part of the firm management is to be exercised in collecting dues from the customers and for which the firm has to bear some extra cost. But in case of cash sales, no such a situation has to be faced.

b) **Secondly**, from the concept of economic value, it can be mentioned that the buyers can attain this value immediately at the time of sale but the seller can arrive at this level with such equivalent value immediately after the collection of dues from the debtors i.e., in future.

c) **Thirdly**, when the firm takes the decision to sell its goods or services in credit, a part of the capital fund of the firm is going to be blocked for some time and which will be released in future. But in order to smooth running of the business, the firm has to arrange additional capital immediately and for which the firm has to incur substantial amount of cost. Sometimes, the dues may turn to be unrealisable i.e. the incidence of bad debt may have to be faced by the firm. Both of which have the unfavourable impact on the profitability of the firm.

d) **Fourthly**, the adoption of this sales strategy has the impact on future course of action. But the future is totally uncertain. The firm’s predictions regarding the future may not be prevailing at all in reality. In such a case the firm has to face a question on its liquidity position.

But now the question is why the firm grants credit to its customers. The reasons behind this decision are mentioned below:

- If the firm enjoys monopoly power, it is easy for the firm to avoid credit sales. But in reality all the markets are more or less competitive in nature. Naturally, if the firm rejects the policy of credit sales, the customer will move to its competitors and the turnover of the firm will be reduced to a great extent. The firm will lose its market share to some extent. All of which have the adverse impact on the survival and profitability of the firm.

- The industrial policy is responsible to a large extent for taking the decision for credit sales. Small units are guided by the industrial norms and industrial
practice, because of the fact that the small units have the little influence on the market condition.

- Sometimes the buyers have the strong bargaining power and they demand easy and favourable terms because of their bulk purchase. They may have the influence on the total market demand for the firm's product. Under these circumstances, the firm has no alternative except to follow this policy. Besides these, some companies try to follow such policy not to give much credit to the retailers or small traders, because it is quite difficult to collect dues from them.

- A firm has to follow the policy of credit sales when it launches its new product in the market. The quality and market demand for such new product are totally unknown to all. In such a case, the firm has to depend on its old customers and the customers entail the opportunity of such situation.

- The same situation may be experienced in case of a weak product of a firm. In this case the company has to push it to the customers for sale. The firm can only be successful if it grants credit to its customers.

- Some companies like to extend credit to its customers or dealers due to the good and long term relationship with them. As per assessment of the company on the basis of its past experience, they are sincere to pay their dues in time.

Due to the firm's decision to extend credit to its customers, the turnover of the firm will increase and for this, the profitability of the firm will also increase to some extent. But the decision of the extension of credit sales involves both costs and risks. As the firm's target is to maximize profit, so the operating profit of a firm would be maximum if the total cost is minimum for a given level of revenue. So the management should compare the costs against benefits. The profit of the firm would be maximum at a point where the incremental rate of return (marginal rate of return) of additional investment is equal to the incremental cost of further (i.e., marginal cost of capital) investment for funding the receivables arising from credit sales. Therefore, to evaluate the decision of granting credit to the customers, the following steps are to be taken into consideration-
2.6.1 Cost of maintaining receivables

Maintenance of receivables is nothing but the amount of claim against the customers at a particular point of time which takes place due to the sales made in credit. There is no doubt that this indicates the firm’s additional investment in current assets. Naturally, the firm has to bear some additional costs for taking such type of decision. The major costs associated with the maintenance of receivables are-

a) Cost of collection:

Whenever the goods or services are sold out to the customers on credit, the firm has to incur significant amount of cost for the maintenance of special credit department, keeping accounting records, postage, stationery, electricity etc. related to that department. Apart from that, the firm has to collect information about the customers before granting credit to them either through the outside specialist agencies or through the internal staff. Moreover, the special collection efforts are to be initiated by firm to collect the dues. All of these activities indicate some amount of additional expenses for taking the decision of credit sales.

b) Cost of additional fund

Immediately after the selling of goods or services in credit, a new asset under the current category comes to existence which is called account receivable. This indicates the firm’s additional investment. As there is the time gap between the date of sale and the date of making payment by the customers, so without waiting for such payment from the customers, the firm has to arrange additional fund for making payment to the suppliers of raw materials, labourers etc. This additional fund has some cost which the firm has to bear.
c) Default cost

A firm has to face a situation where it fails to collect the overdue from the customers in spite of steps taken by the firm against them which it thinks fit for them. This is called bad debt and they have to be written off with the anticipation that they can not be realised subsequently. This is a type of loss and termed as default costs associated with the credit sales.

2.6.2 Decision variables:

Receivable in true sense is the firm’s claim against the person arising from the sale of goods or services in credit during the normal course of business and for which no cash is received immediately. This decision involves both costs and risks, and as such the following three crucial areas are to be taken into consideration:-

a) Credit policies
b) Credit terms
c) Collection policies

a) Credit policies: Credit policy is an important tool of a firm to market its product. Credit policy explains two important criteria to determine whether the firm takes the decision to extend credit to its customers and if so, then how much credit is to be granted to them? Before deciding the credit policy of a firm, two vital factors are to be taken into account: a) credit standards and b) credit analysis. A firm may develop credit standards and follows it before granting credit to the customers and a firm may also collect information from different sources about the customers in advance and use some methods for its analysis before taking any arbitrary decision.

Credit standards: Credit standards imply the basis of selecting the customers to whom goods are to be sold in credit. If the firm takes the decision to follow strict credit standards, then most of the sales are to be occurred in cash. In this case, credit sales are to be extended only to those customers who are most reliable and financially sound and the firm’s possibility of incurring losses regarding bad debts is minimum. Naturally, in that case the cost of maintaining receivables is too much minimum.
the contrary, if the firm wants to follow liberal or lenient credit standards, most of the sales have been made in credit and as a result, the firm has to carry out large volume of receivables. In such a situation, the cost of maintaining receivables and the possibility of losses due to bad debt tend to be higher and may be intolerable for the firm. Therefore, the selection of optimal credit standard depends on the cost-benefit trade off. The important considerations for setting up the credit standards are the collection cost, the average collection period, level of bad debt losses and the sales volume. All these factors are discussed in the later part:-

i) **Collection cost**: collection cost is associated with the firm's decision for credit sales. If the firm adopts the lenient credit sales standards the volume of credit sales would be increased significantly and as a result the size of receivables would also be increased. This requires the establishment of credit maintenance department and the firm has to incur significant amount for collecting dues from the customers. The opposite situation will be prevailing when the firm has to follow tightened credit standards. This type of cost is semi-variable in nature. Up to a certain level, the expenses remain constant, because the existing capacity of the firm may cope with that stage.

ii) **Average collection period or investment in receivables**: Receivables indicates the blockage of funds due to the credit sales and for which additional funds are to be arranged for such a period, till the customers make payments. The firm has to incur additional cost for such additional fund. Obviously, higher the accounts receivable, higher will be the additional costs. This directly depends on the credit standards of the firm. A change in credit standard will certainly bring a change in investment in receivable.

A relaxation in credit standard results in an increase in sales which shifts the level of account receivable to the upward direction. This situation implies the extension of credit to the less creditworthy customers who will take comparatively long time to pay their dues. The extension of credit to the slow paying customers would result in a higher level of account receivable as well as long collection period and higher level of cost.
On the other hand, a strict credit standard results in decrease in volume of credit sales as well as in the level of accounts receivable and investment in current assets. This implies the extension of credit to the more creditworthy persons who are financially strong and make their payment promptly in due course. As a result the average collection period would be low in that case.

iii) **Bad debts expenses:** Bad debts indicate the inability on the part of the customers to pay their dues. This is a type of loss to be incurred by a firm in course of credit sales. This amount of loss is another factor which is influenced by the credit standards adopted by the firm. In a relaxed credit standard, the incidence of bad debt is expected to be increased. But this can be reduced to a large extent when the credit standard is expected to be more restrictive in nature.

iv) **Sales volume:** The first and foremost factor which is influenced by the change of credit standards is the volume of credit sales as well as the investment in accounts receivable of the firm. If the firm adopts the lenient credit standards, the creditworthiness of the customers is given little importance and as a result much more credit is extended to the customers. Such a decision results in increasing the volume of sales. A reverse situation will be experienced by a firm if it adopts strict or restrictive credit standard. So the selection of credit standard plays an important role in determining the volume of sales of a firm.

b) **Credit analysis:** Another constituent of the firm’s credit policy is the analysis of credit. The firm’s intention is to know the financial ability of the customers before granting credit to them. In these type of investigation process, two basic steps are involved:

i) Collection of information about the customers.

ii) Analysis of the collected information.

i) **Collection of information:** The first step of the credit analysis is to collect information about the potential customers who are desirous of enjoying credit from the organisation and an analysis is to be made on the basis of such
collected information. There are two sources from which a firm can collect credit information—internal and external.

**Internal sources:** when a customer expresses his desire to obtain credit from the firm, then the credit department of the firm starts the process to evaluate the creditworthiness of that customer. This customer is required to fill up different forms and to supply different information about his financial operations. The customer may also be asked to mention the references from which the firm can collect the information about such customer as per its requirements in order to judge the suitability of the customers for granting credit. Sometimes an old customer may apply for obtaining credit facility. In that case the information regarding behaviour and the payment pattern of that customer is to be collected from the past records. If this collected information is not sufficient for the purpose of analysis, an employee of the credit department may be sent to collect information directly from the field and to visit personally.

**External sources:** A firm has the opportunity to use external sources for information to evaluate the creditworthiness of the customers. Some well-known and popular external sources are:-

**Financial statements:** Balance sheet and profit & loss A/c are the two important published financial statements which act as external sources for credit information. These two statements are helpful in getting idea about the liquidity, profitability etc. of the credit applicants. But they fail to supply any information about the past pattern of payment of the applicants although this information is helpful in determining the debt paying habit of the credit applicants. In spite of the above mentioned lacuna, the audited financial statements are most essential for the analysis of the creditworthiness of the persons desiring to purchase in credit.

**Bank reference:** Another source of credit information about the credit applicants is the bank reference. Firm's bank collect information about the applicants through their banks. But in reality, the bank always denies to supply
any information about its customers without their consent. In other words, banks try to maintain the secrecy about their customers. But this source plays a vital role to test the authenticity of the information submitted by the credit applicants.

**Trade references:** There is also another opportunity to collect information about the credit applicants from another firm with whom they have the dealings. This can be stated as the exchange of information between the firms about their customers in order to be benefited by each of them. This type of information contains the length of time allowed to them, actual time taken by them to pay their dues, the maximum amount of credit granted etc.

**Credit bureaus:** Another source for obtaining comprehensive and correct information about the credit applicants is the credit bureaus. The bureaus collect information with reference to the experience of the other firms with those applicants. The bureaus gather information about the payment pattern of the credit applicants from a firm that granted credit to such applicants in the past. But in India, there is no such organization but there is the urgent need to develop such organization in order to have correct and specific information to assess the credit worthiness of the credit applicants.

**ii) Analysis of collected information:** The collected information about the credit applicants should be analysed in this stage to determine their creditworthiness. There is no specific rule or formula to do so. There are two types of analysis: quantitative and qualitative. The former approach deals with the information collected from the financial statements and past records. An ageing schedule of accounts payable by such applicants is prepared on the basis of the collected information and the average age of account payable is obtained. This helps to get an idea about the past payment pattern of such customers. In later stage, some important ratios regarding liquidity, profitability etc. should be calculated and compared with the industry average.

But the qualitative approach is based on the information collected from another sources like bank reference, credit bureaus etc. On the basis of those collected information, the creditworthiness of the applicants are determined. This approach is termed as the judgment of the quality of management.
The analysis of credit information comes to an end with the decision of the firm whether the credit is to be extended and if so, what amount is to be extended. In conclusion, it is said that the decision is based on the subjective interpretation of the creditworthiness of the customers.

**Credit term**: Credit term refers to the terms and conditions under which goods or services are sold out to the customers on credit. This mainly follows the credit standards of the customers. After determining the credit standards and creditworthiness of the credit applicants, the management should fix up the terms and conditions under which the credit is to be extended to the customers. The main components of credit terms are credit period, cash discount and cash discount period. Credit period indicates the period for which trade credit is allowed to the customers and within this period the customers must pay their dues.

But cash discount is a benefit on the part of the customers which can be enjoyed by making early payment of their dues. This facility helps to reduce the overdue balance of the customers and impacts positively on the profitability of the customers. Cash discount will only be available to the customers if the payment can be made by the customers within a certain period. But this is to be kept in mind that this period must be less than the normal credit granting period.

As for example, all the above three matters can be summed up in an abbreviation 5/15 net 30. The significance of that abbreviation is that 5% discount is available to the customers if they are able to pay their dues within 15 days from the date of sale. But, if the customers are not interested to enjoy the benefit of cash discount, they can make the payment within the maximum credit period allowed to them i.e., 30 days. They are to be termed as defaulter in making payment if they fail to pay their dues within the maximum credit period allowed to them.

Like the credit standard, credit period affects the profitability and the size of the receivables of the credit granting firm. So both the benefit and cost should be taken into consideration in determining credit term. Benefit in that case refers to the increase in profit arising out of the increased volume of sales due to the extension of credit to the customers. But cost indicates the opportunity cost that a firm may have to lose due to the blockage of funds in receivables for the period of credit allowed to the
customers. At last, it is to be said that the credit term should be determined in such a way, so that the benefits outweigh the cost associated with the decision of credit extended.

**Impact of cash discount:** The impact of cash discount is now being discussed from the viewpoint of seller. This cash discount is allowed to the customers to encourage them to pay their dues within the stipulated period. This decision has the impact in the volume of sales, average collection period, bad debt expenses and on the overall profitability. As and when the firm takes the decision to allow cash discount, the price of the product would be reduced to some extent. If the demand for the product is elastic, then volume of sales would increase certainly and if the customers take the decision to accept this offer, they pay their dues within the stipulated period for cash discount. This atmosphere helps to reduce the average collection period and the investment in accounts receivable. The decrease in average collection period will be helpful to reduce the bad debt expenses. All of these matters will obviously increase the profitability of the firm.

The decision of granting cash discount will also have negative impact. Due to granting such discount, the net unit price of the product will fall. For this reason the profit margin per unit of sale will also fall because the cost structure remains the same. But the rate of discount and period of credit to be allowed for granting such benefit are totally determined by the credit granting firm. But it is very difficult to estimate the percentage of debtors who will respond to the proposed discount scheme. In reality, it is the most important but most uncertain variables in the analysis of discount scheme.

**Collection policies:** Another and final segment of the receivables management is the collection policies. This involves the measures to be undertaken to collect the dues from the debtors after the expiry of the period of credit allowed to them. In short, this is effective in case of overdue payment. The collection policy of a firm consists of two factors: degree of efforts to collect the overdue and the types of collection efforts.

**Degree of collection effort:** There are two types of collection policy: lenient and rigorous or strict. A collection policy is said to be rigorous if some drastic steps are taken to collect the dues from the customers. This strategy has both positive and negative impacts on the firm. Due to the adoption of such rigorous policy, the bad
debt expenses and average collection period will be reduced. Both of which have the positive impact on the profitability of the firm. But the negative impacts of such a type of policy are the increased collection cost and reduction in the volume of sales, because of the fact that the customers will move to elsewhere to obtain credit with favourable terms. But a reverse situation may be experienced, if a firm adopts lenient or loose collection policy. So a collection policy is said to be viable if it is adopted by considering cost-benefit trade-off.

Types of collection efforts: The second ingredient to the collection policy of a firm is the steps to be initiated to collect the overdue from the customers after the expiry of the period of credit allowed to them. A well established collection policy must have the comprehensive guidelines regarding the sequence of measures to be undertaken to collect the overdue. Generally, it starts with soft and polite approach but with the passage of time it should be rigorous and strict and stringent.

But it is to be borne in mind that the rigorous collection efforts not only involve cost but this situation is not desirable for a firm, because it has also the impact on trade relationship. A well established collection policy not only suggests the collection of dues at any cost but also takes into consideration the genuine difficulties of the customers.
2.7 Cash management

Cash is the most important and most liquid current assets and it is always in ready form to incur. So it is called the life line of an organization. At the very initial stage, capital fund is collected in the form of cash to set up a business enterprise. A part of such collected cash is spent for arranging fixed facilities for the production of goods and services and the remaining part is used to pay the workers in the form of wages, to the suppliers for raw materials to be used in the production process and to the govt. in the form of tax etc. i.e., for carrying out day-to-day operation of the organization. In order to have the steady and strong financial position, the firm has to hold the sufficient cash balance. As long as, the firm has sufficient cash balance to meet obligation in time, no question over its liquidity position will arise. But as and when the firm faces the difficulties to meet its commitment due to the insufficiency of cash, this situation may lead to the state of bankruptcy. As per concept of working capital cycle cash is the final output expected to be realized by selling its products or services in cash or collecting dues from the customers. Hence, cash is both at the beginning and at the end of the working capital cycle.

Cash is the medium of exchange which includes coins, currency, cheques held by the firm and the balances in bank account. Sometimes the near cash items like marketable securities, time deposit in bank are also included within the purview of the term cash.

The management of the cash is concerned with the holding of sufficient cash balance which is just adequate for the smooth running of the business enterprise. But the holding of cash balance has an implicit cost arising from the opportunity cost in the form of return that may have to be lost by the firm owing to the rejection of alternative investment or in the form of interest on loan that can be avoided by the firm by paying off it which was taken earlier. So the excess cash holding expresses two things at a time. On the one hand, it has the negative impact on the profitability of the firm and on the other hand, it also indicates the inefficiency of management.

But if the holding of cash balance is less than the desired amount, the firm may lose its reputation in the market for non-payment of its obligation in time. Therefore,
for the smooth running of the business and to secure maximum profitability the
effective management of cash is absolutely necessary.

Cash is the most important but an unproductive asset. It is important in that
sense that it helps to get anything as per our needs. It is unproductive because it has no
direct utility like inventory, fixed assets etc. to produce goods and services. But it acts
as medium of exchange.

Cash constitutes an insignificant portion of total current assets of a firm. But
the management has to spend the significant portion of its total devoted time to manage
cash. Therefore, the main aim of the cash management is to keep minimum balance in
hand which is just adequate to meet day-to-day obligations and to invest the surplus
amount in profitable avenues.

2.7.1 Need for holding cash balance:

Earlier it is stated that the cash is an unproductive asset. Now the question is as to why
it is to be held by the firm? There are four different motives for holding cash balances
which are discussed in details below –

a) **Transaction motive:** The transaction motive for holding cash balance implies the
ability of the firm to meet its regular obligations in the ordinary course of the business.
On the one hand, the firm has to make payment for raw materials, wages, operating
expenses, dividend, taxes etc. and similarly on the other hand, the firm receives cash
from the sale of goods or services occurred in cash or collection of dues from the
debtors. These two ways of inflow and outflow of cash are going on throughout the life
of the firm.

But the cash inflows and cash outflows do not generally coincide at any point of
time. So the firm has to hold cash balances in hand in order to make payment when the
cash outflows exceed the cash inflows. Therefore, the transaction motive for holding
cash balance indicates the ability of the firm to make the payment of anticipated
obligation whose timing is not perfectly synchronized with the receipts of cash
balance. Naturally, the question of holding cash balance for transaction purpose does
not arise at any point of time if the cash inflows and cash outflows perfectly coincide at each and every point of time.

b) **Pre-cautionary motive**: The firm may feel the need of holding cash balance to meet the unexpected contingencies in future. The holding precautionary cash balance enables a firm to meet its unexpected future obligation. This type of holding cash balance largely depends on the prediction power of the firm regarding cash flows. If cash flows can be predicted with more accuracy, the less amount of cash will have to be maintained for future emergency. The holding of precautionary cash is largely influenced by the firm’s ability to arrange borrowings at short notice when the firm feels its necessity. But the firm has the two alternative ways to hold precautionary balance either in the form of cash or in the form of marketable securities. Which plays an important role in that case. In reality, cash set aside for precautionary reasons indicates an idle asset which contributes nothing to the profitability of the firm. But marketable securities should be such that can be converted into cash without spending any time and it can also earn something still it continues. From this point of view, the precautionary balance should be kept more in the form of marketable securities and relatively less in the form of cash.

c) **Speculative motive**: Another purpose to hold cash balance is to adopt the profit making opportunities as per prevailing situation. This depends on the firm’s expectation regarding future. If the firm expects that the security prices will fall in future then the firm will be gainful by purchasing it at a reduced price. The firm can also take the decision to invest in securities if it expects that the rate of interest will fall in future. The firm will be benefited by the subsequent fall in the interest rate and increase in the security prices. Similar situation may prevail in case of the firm’s expectation regarding the changes in price level of raw materials. If the firm things that the price of raw material is expected to fall in future, it stops all types of purchase at present and can enjoy the advantages by purchasing raw materials at reduced price in future. This situation is prevailing in case of a firm which is financially strong and which has the high level of solvency. But this decision involves high level of risk.
d) **Compensating motive:** This is a new concept of holding cash in order to compensate the banks for providing particular services and loans. Generally, for providing common services to the society, banks take charges for rendering their services. But in case of some special services, the bank asks the firm to maintain a minimum balance at all time in its account and which can not be withdrawn at any situation, so long the bank continues to render such special services. So the bank gets an opportunity to generate a return through investment which would be equal to their cost of services. A firm has to maintain minimum cash balance at bank in case of some loan agreement. This prevails in a situation where the credit is restricted in supply and rate of interest is rising. This helps the bank to compensate their loss due to increase in interest rate during the period when loan remains pending.

Under the above two circumstances, the firm has to maintain minimum bank balance. This is too much important motive of holding cash from the view point of management of the firm. The firm has no alternative to avoid it.

### 2.7.2 Objectives of cash management:

There are two basic objectives of cash management, which are-

a) To enable the firm in meeting day-to-day obligations during the normal course of business.

b) Maintenance of minimum cash balance for future exigencies.

The above two objectives are contradictory to each other. If the firm decides to hold minimum cash balance, the other objective will not be attained. So the task of the management is to reconcile them.

**Need for regular payment:** An important objective of the cash management is to enable the firm to honour its day-to-day commitments. For attaining this objective, the firm has to hold sufficient amount of cash. The benefits derived by a firm from holding the sufficient cash balance are-

- The firm can enjoy the benefit of cash discount by making payment to the suppliers within the time prescribed by them for this benefit.
• This enables the firm to maintain good relation with the suppliers because their own cash management can also take the appropriate decision in due course.

• The firm will be able to hold good reputation in the market by making all of its commitment in due time which begets some bargaining power in the hands of the firm at the time of purchase.

• This situation indicates the solvency and strong liquidity of the firm, so that the firm does not face any difficulty in future for the arrangement of any additional fund.

• The firm does not feel any extra headache in meeting its future contingencies.

For the attainment of this objective, the management must be conscious about the cost of maintaining excessive cash balance. Therefore, this objective is to be achieved by maintaining just adequate cash balance, not excess or less.

**Maintenance of minimum cash balance:** Another objective of the cash management is to minimize the cash holding keeping in mind the costs of holding excessive cash balance. Although the holding of maximum cash balance enables the firm to make prompt payment to its obligation and helps to enjoy other benefits as stated above but the holding of excessive cash balance involves high cost. Moreover, a part of it remains idle at all time which impairs the profitability of the firm. But if it is small in size it may cause the failureness of the firm to meet its obligation. So the aim of cash management is to maintain the optimal level of cash balance in order to avoid the above conflicts.

Keeping in mind the above conflicts of cash management, we now determine the need for cash of the firm. For this purpose we should consider those factors which have the impact in determining the required cash balance.
2.7.3 Factors determining the cash balance:
After knowing the objectives of cash management which are by nature conflicting and contradictory to each other, the management takes into consideration the factors which are responsible in determining the holding of cash balance at a particular point of time. The factors that are to be considered in determining the required cash balance are as follows:

1) **Synchronization of cash flows** The main reason for holding the cash balance is the non-synchronization of cash flows for a particular period of time. Generally, the cash inflows and cash outflows do not perfectly coincide during a particular period of time. So, the requirement for cash is to be determined by the excess of cash payment over cash receipts over a specific period. For this purpose, the cash inflows and cash outflows are to be forecast during this period depending upon the planning horizon which is generally one year and each of the 12 months being a sub-period.

The anticipated cash inflows are mainly the collection from debtors, cash sales etc. At the time of thinking about the collection from debtors, the credit period, delay in making payment, amount of cash discount etc. are to be taken into consideration. In addition to that, the other inflows of the firm may be interest, dividend, the sale of securities, and the sale of fixed assets, if any.

But the forecasting of cash outflows indicates the expected payments to be made in each month of the planning horizon. The important cash outflows of a firm are the cash purchase, payments to the creditors, and different types of direct and indirect expenses. Besides these, the firm may have to make payment for the repayment of loans, purchase of fixed assets, payment for dividend, interest and taxes etc.

The forecasting regarding the above are to be made by the management most accurately in order to avoid the uncertainties inherited with those. If it is possible to do so, the firm can take steps in advance to cope with the prevailing situation of excess or deficit cash balance.

2. **Short costs:** Another factor is to be considered in determining the cash requirements of a firm is the cost associated with the shortfall in cash balance. In spite of taking careful measures for preparing cash budget, the firm may have to face shortfall in cash
balance. For every shortfall whether expected or not, the firm has to incur certain costs, which are-

a) **Transaction cost:** This cost is incurred for the arrangement of cash to cover the shortage. This cost may be the brokerage, commission etc. incurred for the sale of securities, fixed assets etc.

b) **Borrowing cost:** This cost is incurred for raising loan from any outside agencies to cover the shortfall in cash balance. Interests, incidental expenses relating to such loan are the examples of this cost.

c) **Substantial cost:** Due to the shortfall in cash balance, the firm has to forego the advantage of cash discount offered by the creditors. This is termed as substantial cost related to the shortfall in cash balance.

d) **Cost associated with the deterioration in credit rating:** when the firm fails to honour its commitment in time due to the non-availability of cash balance, the credit rating of the firm will be negatively affected. In such a case, the firm has to incur higher bank charges, higher interest on loan etc.

e) **Cost for compensating balance:** due to the absence of minimum cash balance in bank accounts, the banks impose a penalty for such violation.

3. **Excess cash balance cost:** Another important consideration in this regard is the costs to be incurred for holding the excess cash balance. This cost is called the opportunity cost. This means the expected return that could have been earned by a firm by investing this excess amount in any alternative avenues. In order to reduce this cost to some extent, a firm may invest it in any short term securities temporarily which can be converted into cash without loss of any time. In short, the excess cash balance cost is nothing but the amount of interest foregone by a firm for holding cash balance in excess of the required amount that remains idle.

4. **Procurement & management cost:** This is the administrative cost by character which is incurred for operating the cash management section. This cost is generally fixed in nature which includes the salary to staff, handling of securities etc.

5. **Uncertainty & cash management:** The management has the experience that the prediction regarding cash flows can never be found in reality with complete accuracy.
Therefore, the finance manager has to take steps to tackle the prevailing situation. The measures to be taken into account are the use of improved techniques of forecasting, increasing the ability of the firm to borrow from outside sources and to use only those inflows which have the highest degree of certainty etc.

2.7.4 Basic strategies of cash management

The cash budget serves as the basic tool of cash management which actually indicates the cash position of the firm. After knowing the cash position, the management thinks about the strategies to be adopted to manage the cost requirements. But it is a matter of fact that the cash management strategies are arising from the operating cycle which starts from the investment of cash in raw materials and ends with the cash sales or collection of dues from the debtors.

The requirement for cash depends upon the number of cash operating cycle in a year. The minimum requirement for operating cash is determined by dividing the firm's total annual outlays by the number of cash operating cycle in a year. As the holding of cash balance involves some cost, so the firm always tries to minimize the requirement for cash and this can be done by increasing the cash turnover ratio. The cash turnover ratio can be increased by reducing the time required to complete a cash operating cycle. From controlling point of view, the time required to complete a cash operating cycle is divided in two parts: semi controllable and uncontrollable. Time required for the procurement of raw materials and the time involved in processing goods are the examples of uncontrollable time. But semi-controllable factors refer to the credit term and collection policy adopted by the firm. The firm can be able to expedite the speed of cash operating cycle by adopting the rigorous collection policy and strict credit terms.

The strategies to be adopted to minimize the operating cash requirements are-

a. Stretching accounts payable
b. Efficient inventory-production management
c. Combined cash management strategies.
The main purpose for the adoption of those strategies is the reduction of operating cash requirements and the minimization of cost involved therein. For attaining these objectives, constant attention is required on the part of the management.

a) Stretching accounts payable/deferring disbursement:
This strategy of cash management states the deferment of payment to the outsiders. In other words, the firm should make delay to make any payment without disturbing its credit standard. The firm can enjoy some advantages from applying this strategy. Due to the adoption of this strategy, the time required to complete a cash operating cycle can be reduced to some extent. As a result, the cash turnover ratio will ultimately be increased and the minimum cash requirements of a firm will be reduced.

b) Efficient inventory-production management: Another strategy of cash management is to increase the inventory turnover ratio. This strategy is to be applied in such a way, so that the stock-out cost can be avoided. The following steps are to be adopted to apply this strategy –

1) Raw materials are required constant attention of the management so that there is no stock left unused for a long duration. For this purpose, most appropriate control technique should be applied which helps to increase the raw materials turnover ratio. As a result, cash operating cycle will be reduced which also leads to the reduction of cash requirements.

2) Secondly, in order to bring rapidity in production process, the production planning is to be done most efficiently which will also be helpful to reduce the volume of work-in-progress. This ultimately will be effective to reduce the cash operating cycle as well as the cash requirements.

3) Modern improved technique is to be applied in determining expected market demand most accurately and production is to be carried on accordingly. It will result in coming down the stock of finished goods
remarkably. Finally, it will expedite the cash operating cycle and reduce the requirements for cash balance.

c) Combined cash management strategy:

In our foregoing discussion, we mention the effect of individual strategy to manage the minimum requirements for cash balance and it is found that each of them has the positive impact on operating cash balance. But to manage the cash most efficiently, all the strategies are to be applied at a time in order to have more favourable impact on the requirement for cash balance. But the following matters are to be remembered –

- Due to the delay in making payment to the creditors, the reputation of the firm in the market will be negatively affected and at the same time creditworthiness will be hampered positively.

- In order to bring rapidity in inventory turnover and production process, the stock of inventory should have to be brought down as minimum as possible. In such a situation, the firm may suffer from stock-out and the manufacturing operation may be stopped due to the non-availability of raw materials.

- The adoption of rigorous collection policies may affect adversely the expected future volume of sales

All the above three points are to be borne in mind at the time of thinking about the adoption of cash management strategies individually or jointly.

2.7.5 Techniques or process of cash management

Earlier we have discussed the basic strategies for the management of cash requirements in details. But there are some techniques or process that can be applied to make the above purposes fruitful. Now, we give our attention to discuss those techniques or process-
1) **Technique for speeding up collection from debtors:** One of the important techniques to speed up collection from debtors is the offering of cash discount and they are to be encouraged to enjoy this benefit by making payment within the prescribed date. By adopting this technique, early conversion of receivables into cash is possible. Another technique to be used to collect promptly from debtors is the managing float. In practice, there are four kinds of float to be used to speed up collection from debtors, which are –

- **Billing float:** Billing float refers to the time gap in between the date of sale and the mailing of bills to the customers. Generally, the bills are sent to the customers a few days after the date of sale, depending upon the efficiency and workload of the billing section. But this is to be kept in mind that the prompt payment on the part of the customers largely depends on the accurate billing and billing in due time. Therefore, the management has to take appropriate steps in order to avoid delay in preparing and sending bills in order to ensure prompt payment on the part of the customers.

- **Mailing float:** Mailing float indicates the time taken by the post office or messengers or any other means to deliver the cheque to the firm from the customers. If the customers send cheque through postal services, then it will take at least seven days to arrive at the destination. This type of delay can be reduced to one day only, if arrangement for collection is being made through messengers. But this suggested system is limited to apply in a case where the firm is operating in a vast geographical area. In that case, this may be possible by the arrangement of developing decentralized collection centres at important places. These centres collect cheques and deposit them in local banks. Thereafter, the encashed amount is to be sent to the central account through the modern scientific sophisticated system without loss of any time. But this process involves some costs. So long as the benefits outweigh the costs involved, this will be more profitable for the firm to switch over to the decentralized collection system.

- **Cheque processing float:** This is the time in between the receiving of cheques by the collection department of the firm and making deposit the same into the bank counter. These collected cheques have no utility or use if they are kept in
locked box or in drawer. Hence, the collected cheques are to be deposited into bank as early as possible. If this is done properly, the cheque processing float can be minimized.

- **Bank float:** This indicates the time taken by the bank to realize the cheque amount after depositing it into the trader's account. This is the practice, that bank does not give credit to the trader's account as and when cheques are deposited into bank. The amount of cheque is credited by bank after its realization. The local cheques require at least two or three days for its realization whereas the out station cheques require at least fifteen days for realization. This difficulty can be avoided by making the following arrangements-

  i) The firm takes step to enter into an agreement with the collecting bank to give instant credit as and when cheques are deposited into bank. At the same time, bank is empowered to debit its account with the necessary amount together with interest and any charges thereon in case of any dishonoured cheque. But this facility is not allowed to all on demand. Only the Reserve Bank of India allows this facility to some special customers only.

  ii) In order to reduce the bank float, decentralized collection centres are suggested to convert all the out station cheques into local cheques. But for establishing a decentralized collection network, the principal methods to be followed are –

  I. Concentration banking and  
     II. Lock-box system

**Concentration banking:**

This is a decentralized collection system and this term is actually used in USA. This system may be adopted to accelerate the collection from debtors. This system necessitates the establishment of strategic collection centers at different places instead of a centralized collection centre located at the head quarter. The collection centres collect the cheques from the debtors within its jurisdiction and deposits the same in
local bank account. In this case, the firm has to maintain a large numbers of bank accounts relating to the numbers of collection centres at different places. The surplus funds from the local bank account are transferred to the concentration bank. This system helps in reducing the mailing time and ultimately expedites the collection of receivables. The firm normally carries out its operation with a minimum cash balance and no fund remains idle.

**Lock box system:**

By adopting concentration banking system the mailing float can be reduced but the cheque processing float remains unaltered. The lock box system is a system which is helpful to eliminate the cheque processing float completely. This system is now discussed below-

A lock box is a post office box taken on rental basis and they are kept at different important places under the control of the banks. The customers of a particular area are advised to send the cheques directly to the post office box arranged for that area. A local bank is authorized to collect the cheques daily or several times in a day as per arrangement made. After collecting the cheques from the boxes, the bank deposits these cheques in the trader's account. Thereafter, the bank sends the particulars of cheques along with the letters of the customers accompanied with the cheques to the firm for information. In this way, this system eliminates the time in between the receipt of the cheques from the customers and deposits the same into the bank for collection.

The main advantages derived from this system are-

i) Under this system, the firm can avoid some amount of cost. The bank handles the remittance prior to the deposit of cheques into the firm’s account at a minimum cost.

ii) The process of collection begins immediately on receipt of the cheques from the customers. Naturally, it helps to avoid the loss of time to complete the internal accounting procedures.
But using this system, the firm has to incur significant amount as its cost. First of all, the rent for the use of boxes is to be paid to the post office and secondly, the bank imposes a charge for the service rendered in this context or the firm is required to maintain a minimum balance in its bank account for compensating the charges.

So, before using this system, both the benefits and costs are to be taken into consideration.

2 Decelerating or slowing disbursement: Another technique to be followed to reduce the operating cash balance is to defer the disbursement to the creditors or suppliers. The disbursement is to be delayed as long as possible without affecting the firm's market reputation as well as the credit standards. This technique indicates the use of the funds for a short duration without incurring any cost for it. The ways to make delay the disbursement are –

a. Avoidance of early payment
b. Centralized disbursement
c. Float

a) Avoidance of early payment: One way of decelerating disbursement to the creditors is the avoidance of early payment. In this case, the management of the firm should never make payment before the last day of the credit period allowed by the creditors. But in order to have cash discount offer, the firm should make payment on the last day of the stipulated period for such benefit, if it is beneficial to the firm. It should not be justified for a firm to make delay beyond the credit period allowed to the firm. The firm should be conscious regarding its creditworthiness and difficulties that may arise to collect credit subsequently. Normally, as the firm has no special interest to make payment before the due date, so the firm must always avoid the early payment.

b) Centralized disbursement: In order to have delay in making payment to the suppliers, the firm may develop the centralized disbursement system. In this case, all the cheques are issued in a centralised manner and it would take much more time to arrive at the suppliers in remote areas, i.e., mailing float is there.
Ultimately, the firm can conserve its cash balance and the need for cash would be relatively smaller in compare to the decentralized disbursing system.

c) **Payment float**: This float refers to the time involved in between the cheques issued to the suppliers and these have been presented at the bank counter for payment. At a particular point of time, bank’s pass book balance does not coincide with the trader’s own book balance. The difference is being called the disbursement or payment float. In other words, the reason behind this fact is the time gap between the issuance of cheques by the firm and its presentation by the recipients at the bank counter for realization. So, if the firm assumes the time accurately when the issued cheques are to be presented at the bank for payment, the firm can take the decision to invest the excess amount of cash temporarily for the float period to earn something as interest.

But, it is to be remembered that it should be a very risky decision. Because the suppliers can realize the cheques at any time after its issue. The firm would have to face a great difficulty if the bank balance is insufficient to honour such cheques. This would certainly impair on the credit standards of the firm.

### 2.7.6 Cash Management Models:

**Inventory – Decision Model for Cash Management**

As per this model, cash is being considered as inventory to be held to meet the future demands. In this case two types of costs are being considered: transaction cost of obtaining cash which is fixed in nature for each transaction and holding cost which is arising from the opportunity to earn interest by investing in any alternative avenue during the period of its holding and this is variable in nature. From this model, it can be determined when transfers should be made from marketable securities to cash and from other non liquid assets to marketable securities. For determining the optimal level of cash to be held at a particular point of time, the following assumptions are to be made –

QM = Optimal size of cash to be required at a particular time intervals.
DM = Demand for money annually i.e., the payment less receipts.
FC = Fixed cost i.e., the transaction cost for every transfer between cash and marketable securities or Fixed cost i.e., the transaction cost for obtaining cash.

HC = Holding cost of money i.e. the opportunity cost arising from the opportunity to invest in any alternative avenue during the period of its holding.

Therefore, no. of times the transaction or transfer between cash and securities are to be made= DM /QM.

\[
\text{Total transaction cost} = \frac{DM}{QM} \cdot FC
\]

\[
\text{Average seize of cash holding} = \frac{QM}{2}
\]

\[
\text{Total holding cost} = \frac{QM}{2} \cdot HC
\]

At the optimal level, the total transaction cost is to be equal to the total holding cost.

\[
\frac{DM}{QM} \cdot FC = \frac{QM}{2} \cdot HC
\]

or, \( 2 \frac{DM}{QM} \cdot FC = (QM)^2 \cdot HC \)

or, \( (QM)^2 = \frac{2 DM \cdot FC}{HC} \)

or, \( QM = \sqrt{\frac{2 DM \cdot FC}{HC}} \)

This formula for determining the optimal cash balance in hand can be used under the condition of certainty, when every information is available in ready-made form.

**Miller – ORR Model**

This model is based on the cash inventory model but in that case the net cash flows move in random direction and they form a normal distribution in the long run. In other words, there is the greater possibility that the net cash flows may either be positive or
negative at a particular point of time. The main improvement of this model over the inventory model is the real life cash flow process.

In this model, two levels are being fixed: Upper level and lower level i.e, reorder level and the cash flows are allowed to move freely between these two levels. When the cash balance reaches the upper limit, a transfer is to be made into marketable securities, so that the cash balance comes down to the reorder level. But when the cash balance arrives at the lower level i.e, re-order level, an arrangement for the sale of marketable securities is to be made. No action is to be undertaken as long as, the cash balance stays between these two levels.

The main objective of the Miller-ORR model is to minimize the total cost of holding at a given minimum level of cash. The cost function is stated as,

\[
E(C) = \frac{a E(N)}{T} + i E(M)
\]

Where, \(E(C)\) = Expected cost,

\(a\) = Cost per transfer in between cash and securities,

\(E(N)\) = Expected number of transfers between cash and securities,

\(T\) = Number of days in the planning period.

\(E(M)\) = Expected average daily cash balance.

To use this model, accurate and fair data is to be obtained. But it is very difficult to acquire. Therefore, it has to be dependent on subjective estimates. It is also difficult to determine the minimum, upper level and re-order level of cash requirements.