BACHELOR OF COMPUTER APPLICATIONS

SEMESTER 4

DCA2204

PRINCIPLES OF FINANCIAL ACCOUNTING AND MANAGEMENT

Unit 8

Working Capital Management – II

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1. INTRODUCTION

Inventory management is the process of efficiently overseeing the constant flow of units into and out of an existing inventory. This process usually involves controlling the transfer in of units in order to prevent the inventory from becoming too high, or too slow. Receivables are a direct result of credit sales. Credit sale is resorted to by a firm to push up its sales which ultimately result in pushing up the profits earned by the firm. At the same time, selling goods on credit results in blocking of funds in accounts receivable. Additional funds are, therefore, required for the operational needs of the business which involve extra coasts in terms of interest. Moreover, increase in receivables also increases chances of bad debts.

1.1 Objectives

After studying this unit, you will be able to:

- *State the purpose of inventory.*
- *Discuss the techniques of inventory control.*
- *State the objectives of receivables management.*
- *List out the costs associated with receivables management.*

2. INVENTORY MANAGEMENT

The term 'inventory' refers to the stockpile of products. Inventory comprises of those assets which will be sold off in the near future and moneys recovered. Inventory consists of three types of assets – raw materials, semi

-finished goods (work in progress) and finished goods. Raw material inventory consists of those items which are purchased by the firm to be converted into finished goods. Work in progress inventory consists of partially complete goods, that is, items currently being used in the production process. Finished goods stock represent completed products ready to be sold.

Inventory management **helps companies identify which and how much stock to order at what time.** It tracks inventory from purchase to the sale of goods. The practice identifies and responds to trends to ensure there's always enough stock to fulfill customer orders and proper warning of a shortage.

Inventory management is the control of all above-mentioned assets to obtain the goal of minimizing total costs – direct and indirect – that are associated with holding inventories. Stocks constitute a very significant part of current assets. A rough estimate says, out of the total current assets with Indian public companies, more than 60% account for inventories. The sheer size of this asset tells us the amount of funds required. It, therefore, becomes necessary to manage inventories in a very efficient way and avoid unnecessary hold-ups.

The chief responsibility of a Finance Manager of a firm is to see to it that the actions of the firm ultimately lead to wealth maximization of shareholders. We have already discussed in the previous section that in order to minimize cash requirements, inventories should be turned over as quickly as possible. Stock hold-ups lead to cash block-ups percolating down to other areas. Also, he should ensure availability of sufficient raw materials for smooth production and sufficient finished goods stock to satisfy sales demands. These two conflicting situations must be balanced properly. The optimum level of inventory determined is a basis of trade-off between costs and benefits associated with the inventory levels.

2.1 Role Of Inventory In Working Capital

Inventories form an important part of a firm's working capital. Some characteristic features about inventory are as follows:

1. **Current asset:** Inventories will be converted to cash within a year.
2. **Level of liquidity:** Inventories are looked at as next to cash. A firm having fast-moving goods in its stock can convert the products quickly to cash. Such stocks are called as highly liquid stocks. Firms having large stocks of goods not demanded by customers or which are outdated in style and fashion or which have deteriorated in quality due to external conditions like weather, have huge liquidity problems. Such firms do show the goods as current assets but these cannot be sold in the market and therefore do not bring any profits to the firm.
3. **Liquidity lags:** Inventories have three types of lags:
   a. **Creation lag:** Raw materials are purchased on credit (creation of accounts payable) and used to produce finished goods. Production entails many types of payments like labour, electricity charges, rent of building, etc. All the payments are made after a smalltime lag, generally after 30 days. Similarly, goods purchased for resale (trading companies) are also held for a period of 30 days or so before payment is made for them. There is always a lag in payment whether goods are purchased or manufactured. This liquidity lag offers a benefit to the firm.
   b. **Storage lag:** The goods held for sale cannot be converted into cash immediately. Whether the goods are fast-moving or slow-moving, the firm realizes its cash after a certain period. The firm, on the other hand, pays off its suppliers, labourers and meets overhead expenses before the goods are actually sold and cash realized. This lag is a cost to the firm.
   c. **Sale lag:** Instant cash is realized when goods are sold on cash basis but in competitive situations, firms should give some credit period to their customers to enhance their sales volumes. This results in accounts receivable and this lag is a cost to the firm.
4. Circulating Activity: Stocks are in a circulating pattern with other current assets. Raw materials get converted into semi-finished goods which in turn are processed and sold

as finished goods. Finished goods take the 'accounts receivable' form and then become cash. Cash is again re-invested in inventory to continue the operating cycle.

2.2 Purpose Of Inventories

The goal of inventory holding is to achieve efficiency through cost reduction and to increase sales volume. The following are the other benefits accruing from holding inventories:

- **Sales:** Customers purchase goods only when the need arises. On the other hand, firms should always have a ready stock of finished goods to maintain customers' loyalty. If the goods they want are not available most of them look at other substitutes (in present day market scenario, plenty of alternatives with similar features and prices are available).
- **Avail quantity discounts:** Suppliers give discounts for bulk purchases. Such discounts increase the firm's profits. Firms may go in for large orders to benefit from discounts offered by dealers.
- **Reducing ordering costs and time:** Every time a firm places an order, it incurs certain administrative expenses and some time is lost in processing these forms to get necessary approvals. Each of these varies with the number of orders placed. To save on time and costs, the firms may think about placing big orders.
- **Reduce risk of production shortages:** Manufacturing firms require a whole lot of raw materials and spares and tools to help the production process and in machine maintenance. Even if one item is missing or is not available immediately, the entire production process goes for a toss and the firm incurs heavy losses. To avoid such situations, firms maintain the required stores and inventories in sufficient quantities.

These benefits arise because stocks provide a buffer between purchasing, producing and marketing goods.

2.3 Costs Associated With Inventories

Successful inventory management is a trade-off between high and low levels of inventory. The inventory cost can be classified as under:

- **Material costs:** These are the costs of purchasing the goods and the related cost such as transportation and handling costs associated with it.
- **Ordering costs:** The expenses incurred to place orders with suppliers and replenish inventory of raw materials are known as 'ordering cots.

Ordering costs include requisitioning, purchase ordering, transporting, receiving, inspecting and handling at the warehouse. These costs go up with the number of orders placed; the more frequently inventory is required, higher is the firm's ordering costs. In contrast, a firm with high levels of inventory will have less ordering costs, , thus the ordering costs and volume ordered have an indirect ratio.

- **Carrying costs:** These are the expenses incurred in connection with maintaining a given level of inventory, that is, storage of goods. They include storage, insurance, taxes, deterioration, spoilage, obsolescence, salaries of warehouse-keeper, maintenance of buildings etc. Carrying costs generally are to the tune of 25% of the value of inventory in storage. The greater the inventory, the greater is the carrying cost. Contrary to the ordering cost, these costs increase with increase in inventory size.
- **Cost of funds tied up in inventory:** Whenever a firm commits its resources to inventory, it is using funds that otherwise might have been available for other activities. The firm is losing on the opportunity cost. If the funds were not locked up in inventory, they would have earned a return.
- **Cost of running out of goods:** These are the costs associated with the inability to provide materials to the production department when they ask for or not providing finished goods to the marketing department when demand is there. Both these types of lapses have a cost on the profits of the firm. Loss in production takes place due to non-availability of raw materials and customers are lost due to non-availability of finished goods in the market. Erosion of customers is not a good sign and the company's goodwill is lost in the market.

2.4 Inventory Management Techniques

We have just studied the objectives of inventory management and the importance of the optimum level of inventory. Many mathematical models are available to handle inventory management problems. Some of the methods of efficient inventory control system are discussed here:

ABC System

Monitoring a large number and types of inventory becomes very difficult in a big company given the amount involved. In such cases, ABC analysis enables the management to monitor the stocks in a proper manner. It is neither required nor desirable for firms to keep the same degree of control on all the items in stock. Items of high value command maximum attention while low value items do not require much control. The firm therefore classifies inventories into three different categories – A group – items with high-value come under this classification and they involve the largest investment and high attention. Rigorous, sophisticated and intensive control measures are used for such item monitoring. Items under the C group represent least value items needing simple control techniques and less attention although the number of items in this group is fairly large. The B group stands midway. They are neither too expensive nor very cheap. These items require reasonable attention. The ABC analysis concentrates on important items and is therefore known as "Control by Importance and Exception". It is also known as Proportional Value Analysis as items are classified according to the importance of their value.

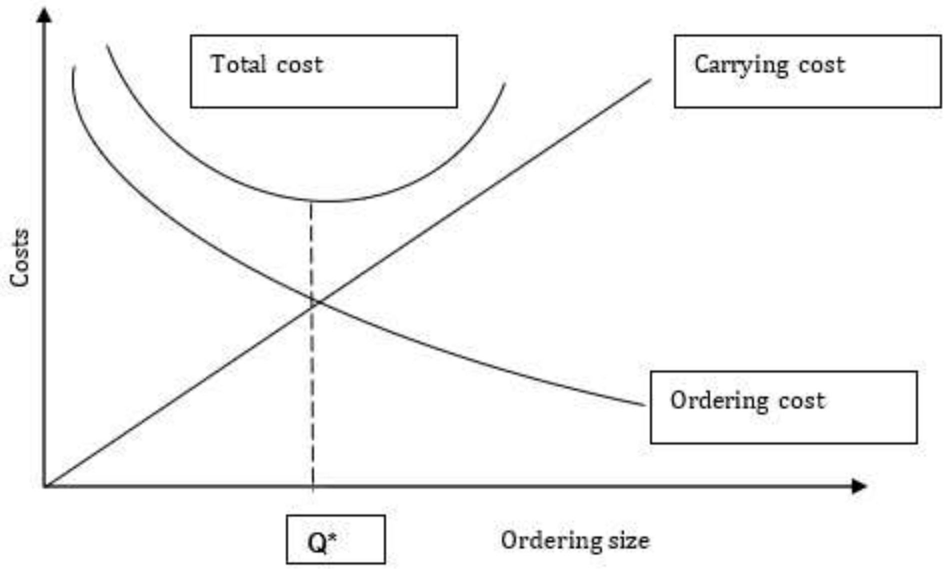
Advantages of ABC analysis:

- It ensures closer control on costly items in which lies the greater part of company's resources.
- Clerical costs are greatly reduced as stocks are maintained at optimum level.
- It helps in achieving the main objective of inventory control at minimum cost.

Economic Order Quantity (EOQ)

EOQ refers to the optimal order size that will result in the lowest ordering and carrying costs for an item of inventory based on its expected usage. Answers to questions such as: What should be the quantity ordered for each replenishment of stock, how many orders should be placed to get the raw materials or should the entire requirement be procured once or in instalments and if instalments, how many of them – these are sought to be explained by the EOQ model. The optimum level of inventory is referred to as the Economic Order Quantity. It is the economic lot size. EOQ is defined as that level of inventory order that minimizes the total cost associated with the inventory management. It is that level one unit beyond which is additional cost to the firm and one unit below may hamper production process. The model is based on the following assumptions; nevertheless, it is the most widely used technique in inventory control.

- **Constant or uniform demand:** The firm knows with certainty the annual consumption of a particular item of inventory.
- **Constant unit price:** The EOQ model is based on the assumption that the per unit price of material does not change and is constant irrespective of the order size.
- **Constant carrying costs:** Unit carrying costs are known to vary substantially as the size of inventory increases or decreases. Firms derive economies of scale by increasing order size. However, the EOQ model assumes the carrying costs to be constant.
- **Constant ordering costs:** Ordering costs are assumed to be constant whatever the number of orders is and whatever the size is.



Economic Order Quantity:

Optimum Production Quantity

The formula for **EOQ** model is **√2AO / C**

Where A refers to the annual usage,

O refers to ordering cost,

C refers to cost of carrying inventory per unit per annum.

Example:

The following details are available. Calculate EOQ.

Annual consumption of raw material M 40000 units.

Cost per unit Rs. 16

Carrying cost is 15% p.a

Cost of placing an order Rs. 480

Solution

EOQ = √2AS / C = √2*40000*480) / 2.4 = √16000000 = 4000 units

C = 16*15% = 2.4

Example:

Bangalore Industries is a pioneer in manufacturing perfumes. It has estimated that the annual requirement of a particular type of perfume which is used as raw material is 50000 units. The carrying cost is estimated as 15% and the ordering cost is estimated to be Rs. 10 per order. The unit cost of raw material is Rs. 8. What is the most economical order?

Solution

EOQ = √2AS / C = √2*50000*10} / 1.2 = √833333 = 913 units

C = 8*15% = 1.2

2.5 Re-Order Point

In the EOQ model, it was assumed that there is no time lag between ordering and procuring of materials. Therefore, the re-order point for replenishing the stocks occurs at that level when the inventory level drops to zero and because of instant delivery by suppliers, the stock levels bounce back. But rarely do we come across such situations in real life. There is always a lead time between ordering date and receipt of materials. Due to this, the reorder level is always higher than zero. The firm places a fresh order before the stocks go down to zero and by the time they hit the zero levels, new stocks would have arrived and the business is smooth. The question now is what should be the level of inventory before fresh orders are placed? Factors such as the time required to re-stock and the usage rate of the said material are to be considered to decide on this issue.

Re-order Point = Normal Consumption during lead time + Safety stock Reorder level = Average usage *Lead time

REORDER LEVEL = maximum consumption * maximum delivery time

Maximum Stock Level = **Reordering Level + Reorder Quantity – (Minimum Consumption x Reorder period)**

Minimum Inventory Level = Average Daily Demand x Average Time to Sell

Danger Level = Average Consumption x Maximum reorder period for emergency purchases.

Safety stock

In order to avoid a stock-out situation, the firms should maintain a safety stock which will act as a buffer or a cushion against a possible shortage of inventory. Safety stock may be defined as the minimum additional inventory to meet an unanticipated increase in usage resulting from an unusual high demand.

2.6 Pricing Of Inventories

There are different ways of valuing inventories. Firms should choose that system which gives them the maximum benefit.

- First In First Out (FIFO): A firm adopting this method prices the raw material at that rate at which the materials were received. The goods received first are issued first and once the first set of consignment is completely exhausted, the second set is not utilized. This is a logical method of issues which is used by almost all companies.
- Last In First Out (LIFO): In the LIFO method, the consignment last received is first issued and if this is not sufficient, only then the previous set in the warehouse is utilized. This system is useful when the companies want to price their product on the basis of total cost incurred plus a percentage of profit. Under this method, the goods manufactured will be having a higher value and therefore the company can derive a higher profit on their goods. This method defies logic in the sense companies issuing materials for production activities under this system find that they have ended up with the initial sets procured and they have deteriorated in quality after a point of time.
  - **Weighted Average Method:** The pricing of materials is done on weighted average method wherein weights are assigned to the quantities held and accordingly priced. This is one of the most widely used methods as it gives importance to the balances in stores in their proportion of availability.

- **Standard price method:** Under this method, the material is priced at a standard cost which is predetermined. When the material is purchased, the stock account will be debited with the standard price. The difference between the purchase price and the standard price will be carried to a variance account. This is again not a widely used system as the pre- determined prices may be very less and not consistent with the prevailing situations.
- **Replacement or Current price method:** This method prices the issues at the value that is realizable at the time of issue.

Self-Assessment Questions - 1

1. Inventory consists of three types of assets ______________, ________________ and _______________ .
2. The optimum level of inventory is a trade-off between ______________ with the inventory levels.
3. Liquidity lags are of three types. They are __________ , ____________ and __________ .
4. The goal of inventory holding is to achieve efficiency through______________ .
5. Loss in production takes place due to non-availability of raw materials is _________ type of inventory cost.
6. ABC technique classifies high-value goods under __________ group and places least value goods under _________ group.
7. The ABC analysis is also known as __________ .
8. ____________ refers to the optimal order size that will result in the lowest ordering and carrying costs for an item of inventory based on its expected usage.
9. _______________ is the minmum additional inventory to meet an unanticipated increase in usage resulting from an unusual high demand.
10. The price of the material which is predetermined is _____________ .

3. RECEIVABLES MANAGEMENT

Businesses sell goods on credit to increase the volume of sales. In the present era of intense competition, one way to improve sale deals is to offer relaxed payment conditions to customers. Finished goods get converted to receivables when sold on credit terms. Trade credit is a marketing tool that tries to bridge the gap between production and distribution of company's products. Trade credit creates receivables or book debts which the firm hopes to realize in the near future. The receivables are a very important component of current assets. A study has recently concluded that receivables constitute a third of a firm's current assets. As this is a huge amount in the composition of current assets, the Finance Manager must know how to exercise proper control on this item. The purpose of this section is to explain the various facets of receivables, their importance in a company and their efficient management.

3.1 Objectives

The term 'receivables' is defined as 'debt owed to the firm by customers arising from the sale of goods or services in the ordinary course of businesses. The main objective of having receivables in the current assets is to promote and encourage sales which will lead to increased profits. In competitive situations, the firms will be forced to offer goods on credit keeping in line with competitor's strategies. Customers will always prefer to postpone payments and they will constantly be in search of that supplier who gives credit. The company may lose customers by following a 'no credit' policy which in turn means fewer sales and lesser profits. All firms therefore grant credit to increase sales, profits and to meet competition.

3.2 Costs Associated With Maintaining Receivables

The following are the different costs incurred with the extension of credit and accounts receivable:

- **Capital cost:** A firm offering goods on credit can surely expect higher sales but some of the firm's resources remain blocked in them as there is a time lag between a credit sale and cash receipt from customers. The increase in the accounts receivables is an investment in assets to the company. To the extent the moneys are blocked in its book debts, the firm has to arrange additional funds to meet its obligations for payments to its suppliers, employees, etc. The cost of the use of additional capital to maintain its obligations will definitely have an effect on the firm's profits.

- **Collection cost:** These are the costs incurred in collecting receivables. They are administrative in nature and these costs include (a) additional expenses on the creation and maintenance of staff, stationery, postage, registers etc.
- **Delinquency Cost:** This cost arises out of the failure of customers to meet their obligations when payment on credit sales becomes due after the expiry of credit period. Additional costs in the form of reminders, legal charges etc. will be incurred.
- **Default cost:** The firm may not be able to recover its dues because of its customers' inability to pay off their debts. Such dues are bad debts and go on to reduce the profits of the company.

The size of the receivables is determined by the firm's credit policy and the level of its sales.

3.3 Credit Policy

The credit policy of a company can be regarded as a trade-off between increased credit sales leading to higher profits and the cost of having large cash locked up in receivables. The credit policy to be adopted in businesses largely depends upon the competitors' strategies. If the competitors are grating a 15-day credit period and if the firm decides to extend the credit period to 30 days, the firm will be flooded with customers' demand for company's products. Sometimes, it may not be able to cope up with the fresh demand. In the long run, other companies may also have to extend their time line failing which they will be driven out of the scene by competition. The firm which started the scheme will become a market leader and other firms will look upon it for further leads.

The credit policy is a framework to determine (a) credit standards, (b) period of credit, (c) cash discounts to be offered and (d) collection program. All these variables listed influence the amount of sales, the amounts locked up in receivables and the bad debts incidence.

3.4 Credit Standards

The term 'credit standard' represents the criteria for extending credit to customers. The quantitative basis for setting credit standards are credit rating, references, average payment period and ratio analysis. There is always a benefit to the company with extension of credit to its customers, but with the benefit come the risks of delayed payment or non-payment, funds blocked in receivables, etc. Non-extension of credit leads to loss of customers and indiscriminate extension come with their own problems. The firm should therefore evaluate the trade-off between cost and benefit as a whole. Professional credit rating agencies' help may be sought to rate a customer's creditworthiness. After rating, the customers are rated as 'excellent', 'very good', 'good', 'average', 'poor', etc. If the company has a policy of granting credit only to 'excellent' and 'very good' rated customers and the company's profits are not increasing because of such a policy, the question the company faces now is "Should credit policy be liberalized so as to grant credit to 'good' and 'average' customers, to have increased sales?" The answer to this question lies in making a cost benefit analysis of tight credit policy and liberalized credit policy. The overall credit standards can be divided into (a) tight or restrictive and (b) liberal or easy-going. In general, the implication of the above factors should be considered.

3.5 Credit Period

This refers to the time given to customers to pay for their purchase. It is generally expressed in days like 15 days or 30 days. Generally, firms give a discount if payments are made within a said period beyond which they will not lose on the benefit that can be availed. Increasing the credit period will bring in new sales and new customers. Reducing the period will lower sales as customers decrease, which is not desirable.

3.6 Cash Discounts

Firms offer cash discounts to induce prompt payments. Cash discounts have implications on sales volume, average collection period, investment in receivables, incidence of bad debt losses and profits. Change in discount rate will bring in additional sales – granting discounts implies reduced prices and this factor brings in new sales. The customers will also want to take advantage of discounts and therefore they pay their dues promptly. The negative effect of higher discount on sales is that the per unit profits will reduce.

3.7 Collection Program

The success of a collection program will be dependent on the collection policy. The objective of a collection policy is to achieve timely collection of receivables, thereby releasing funds locked up in receivables and minimize bad debts occurrence. The collection program consists of the following:

- Monitoring receivables.
- Informing customers about the due date for payment.
- Initiating legal action to overdue customers after sending repeated notices.

Collection policy should be so formulated that it is not too rigorous as it acts as an irritant to customers, leading to bad relationship with them. Laxity in the rigour of collection effort will increase sales but bad debt losses will also increase.

Self-Assessment Questions - 2

11. Trade credit is a tool that bridges the gap between __________ of company's products.
12. The main objective of having receivables in the current assets is to ___________ which lead to increased profits.
13. All firms grant credit to __________ , _____________ and ___________ .
14. __________refers to the failure of customers to meet their obligations when payment on credit sales becomes due after the expiry of credit period.
15. ___________ are bad debts to the company.
16. The credit policy to be adopted in businesses largely depends upon the____________.

4. SUMMARY

Inventory forms a major part of the current assets. The objective of inventory management is to minimize total costs – both direct and indirect. When usage of inventory and availability is uncertain, the Finance Manager should be able to get stocks at the least possible time. EOQ will help the Finance Manager to arrive at the correct amount of inventory level.

All business firms generally sell goods on credit. Goods sold on credit become receivables which constitute a very important part of current assets. The level of receivables depends on a number of factors like the volume of credit sales, credit policy of the firm, credit period extended to customers and cash discount policy of the company. Liberal credit policy increases the volume of sales but also brings with it problems of liquidity and bad debts.

5. TERMINAL QUESTIONS

Short answer type questions

1. What is inventory management?
2. Name some inventory management techniques.
3. hat is FIFO method of pricing inventories?

Long answer type questions

4. Explain the benefits accruing from holding inventories.
5. Write a short note on credit policy.
6. Explain the costs associated with the maintaining receivables

6. ANSWERS

Self-Assessment Questions

1. Raw materials, semi-finished goods and finished goods
2. Costs and benefits associated
3. Creation lag, storage lag and sale lag
4. Cost reduction and increase sales volume
5. Cost of running out of goods
6. A and C
7. Control by Importance and Exception
8. EOQ
9. Safety stock
10. Standard price
11. Production and distribution
12. Encourage sales
13. Increase sales, profits and to meet competition.
14. Delinquency Cost:
15. Default cost
16. Competitors' strategies

Terminal Questions

1. Inventory management helps companies identify which and how much stock to order at what time. It tracks inventory from purchase to the sale of goods. The practice identifies and responds to trends to ensure there's always enough stock to fulfil customer orders and proper warning of a shortage.

2. Some of the methods of efficient inventory control system are:
   - ABC system
   - EOQ system
   - Re-order point

3. A firm adopting FIFO method prices the raw material at that rate at which the materials were received. The goods received first are issued first and once the first set of consignment is completely exhausted, the second set is not utilized. This is a logical method of issues which is used by almost all companies.

4. The following are the other benefits accruing from holding inventories:
   - Sales: Customers purchase goods only when the need arises. On the other hand, firms should always have a ready stock of finished goods to maintain customers' loyalty. If the goods they want are not available most of them look at other substitutes (in present day market scenario, plenty of alternatives with similar features and prices are available).
   - Avail quantity discounts: Suppliers give discounts for bulk purchases. Such discounts increase the firm's profits. Firms may go in for large orders to benefit from discounts offered by dealers.
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fresh demand. In the long run, other companies may also have to extend their time line failing which they will be driven out of the scene by competition. The firm which started the scheme will become a market leader and other firms will look upon it for further leads.

The credit policy is a framework to determine (a) credit standards, (b) period of credit, (c) cash discounts to be offered and (d) collection program. All these variables listed influence the amount of sales, the amounts locked up in receivables and the bad debts incidence.

6. The following are the different costs incurred with the extension of credit and accounts receivable:
   - Capital cost: A firm offering goods on credit can surely expect higher sales but some of the firm's resources remain blocked in them as there is a time lag between a credit sale and cash receipt from customers. The increase in the accounts receivables is an investment in assets to the company. To the extent the moneys are blocked in its book debts, the firm has to arrange additional funds to meet its obligations for payments to its suppliers, employees, etc. The cost of the use of additional capital to maintain its obligations will definitely have an effect on the firm's profits.
   - Collection cost: These are the costs incurred in collecting receivables. They are administrative in nature and these costs include (a) additional expenses on the creation and maintenance of staff, stationery, postage, registers etc.
   - Delinquency Cost: This cost arises out of the failure of customers to meet their obligations when payment on credit sales becomes due after the expiry of credit period. Additional costs in the form of reminders, legal charges etc. will be incurred.
   - Default cost: The firm may not be able to recover its dues because of its customers' inability to pay off their debts. Such dues are bad debts and go on to reduce the profits of the company