Working Capital Management
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Lecture - 19
Inventory Behaviour

Welcome students. So we are in the process of discussing the inventory management under the working capital management and the importance of inventory while managing the short term funds or the working capital. We have discussed in the previous class also that the asset which is the least liquid asset and converting inventory into cash is a difficult process so we should be careful while making investment of short term funds in the inventory.

And if the large investment is made the funds will be blocked for the longer duration and will not be able to convert into cash as and when we wanted. So that will create the problem. So we are in the process of discussing all this relevance of managing inventory. So we were talking about that say when you manage the inventory we have different motives and the different costs are associated to the inventory.

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And we saw that carrying cost, handling cost, ordering cost or reordering cost and the stock-out costs are the 4 important costs which we should be careful about and if we are not able to manage these costs properly then the overall cost of production will go up. The total say selling price will also increase and the firm would not be able to sell the product in the market at that price so that will create the problem.

So we will have to keep the cost of inventory under control. So we have to keep the investment in the inventory also under control. So for that purpose we should learn that how to manage inventory as far as the management of the short term funds is concerned. Now let us have a look upon the inventory behaviour, how inventory behaves.

Just for a moment let us talk about the different costs and we are talking about the carrying cost, handling cost, ordering cost, and the stock-out-cost. So we know what is a carrying cost, what is a handling cost. Carrying cost means the investment made in the inventory that is the purchase price of the inventory. Handling cost that is of the electricity, water, and then the manpower people who are say posted on the in the godown we have to pay to them.

Similarly, we have the ordering cost also, receiving cost, shipping cost, means transportation cost all these costs are there we all understand that these are the physical cost but the one cost which is the stock-out cost I have discussed with you in the previous class also that is also a very serious cost. Very important cost, very serious cost and we should try to take care of this cost also.

That is why we talk about investment in the inventory which is the optimum investment not too less not too high. Because if we make the investment too less in the inventory then sometime we have to face the stock-out-cost and that will also have the its repercussions. So to avoid the stock-out cost we should maintain sufficient inventory at all levels and what the repercussions of the stock-out cost and how it can impact means the firm at every level.

It is not only impacting the firm the manufacture but even the distribution channels also, the retailers also. So a detailed discussion on this kind of the cost, stock-out cost I will have with you in the sometime later because we will see that how serious this kind of the cost is and as I discussed in a reference I gave you the reference of a survey conducted by the Harvard professors a team of the Harvard Business School professors.

Where they say interviewed 71,000 customers across 29 countries and what were the outcomes of those discussions as well as what was the reaction of those consumers that if they find no product on the shelf when they want to buy or they intend to buy or they visit the store to buy the product. If they do not find the product on the shelf what is their reaction. So the total detailed survey and their outcome and the say the seriousness of the stock-out cost I will discuss with you sometime in the class later on.

But let us first move to the next part that is the understand the inventory behaviour. When you talk about the inventory behaviour, you see that inventory behaviour moves like this.

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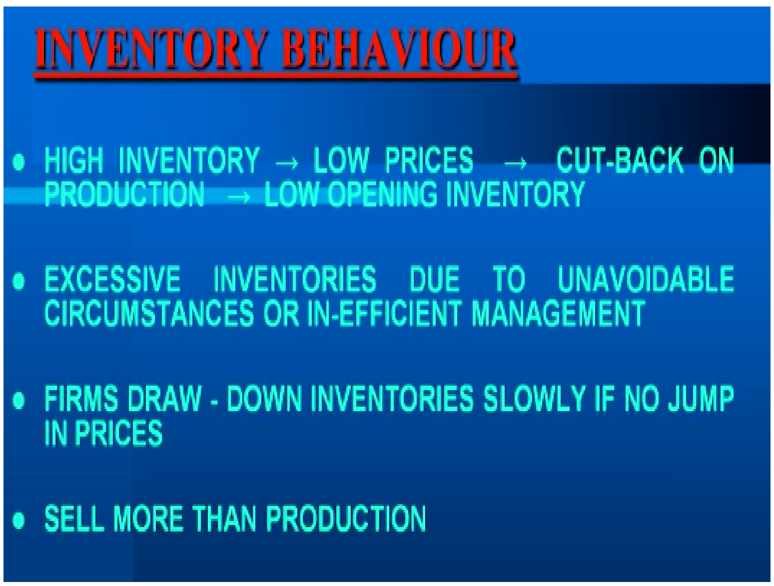

High inventory maybe it is a inventory of raw material. It is a inventory of work in process or it is a inventory of finished goods. Moves to the low prices right. Cut back on the production so that opening inventory becomes low. For example any firm has a very high inventory of the finished goods. They are not able to say it means the movement of the goods from the place of production to the place of consumption is slow.

They are not able to pass on the production to the market at the pace as it should have been. So there is a high inventory as I discussed with you the case of SAIL, Steel Authority of India Limited in the previous class. We saw that why the Steel Authority of India became a sick company. The only reason was very high level of inventory of the finished goods because production process was continuous and selling process was affected because of the competition from the private sector so they had the high level of inventory.

So in any firm if there is a high level of inventory what will happen? The prices will go down because the supply side is improved. And high means very say high supply of the goods in the market will certainly create a situation when the prices will go down and if it is possible, if it is possible as I discussed with you that in case of the SAIL it was not possible to cut down the production because of the heavy investment in the human resources.

Then they had the 6 plants and many things. So people cannot sit idle. They cannot be asked that plant is shut because we are not able to sell the product in the market. So you have not to produce today. Production process was continuous but the selling process was not continuous that was affected because of some changes in the market. So because of that reason, company became sick because of the mounting inventories.

But in the normal cases or maybe in the cases when it is a small firm or the firm if it is able to adjust its production process then certainly they should do it because inventory is very high and prices are going down so that will create a problem for the firm because they would not be able to even sell the product at the desired price or sometime not even at the cost price. So there is no point selling at that price in the market. So better it is that to cut down the production.

Production should be reduced and you should wait for that the adjusting inventory is sold in the market that goes to the market and once that existing production has sufficiently or means going to the market to the to the sufficient extent then after that we should try to say regain the production process. So opening inventory in the coming time when we have to regain the production should be very low, opening inventory should be very low so that we can add up the new inventory of the finished goods.

And normally that happens also but that when any supply of any goods or services goes up in the market the production process is readjusted if it is possible and it happens in many cases it becomes possible so the production is readjusted and then the production is the pace of the production is slowed down and once that adjusting inventory is fully exhausted in the market or exhausted to the largest extent then the new production takes place.

So this is a normal behaviour of inventory so that demand and supply side remains sides remain balanced. Next thing happens in the behaviour of inventory is that excessive inventory is due to unavoidable circumstances or inefficient management. Sometimes because of the recessionary situation in the market when the purchasing power of the people go down, they find it difficult to purchase certain things. So how the people then decide or ration their say their purchases.

First of all they go for the necessities. After that they go for the comforts and then they go for the luxury. This is the normal process. So if we are manufacturing a necessity or we are manufacturing the product which is a necessity for the people, impact of the recession will not be very high. It will be there but not be very high. But if it is a comfort or luxury certainly it will be most hit. So we will have to see that in which segment we are.

What kind of the product we are manufacturing and we will have to think about that if we can readjust the manufacturing process we should do like that otherwise the prices of the means because of the increased supply prices will fall down and the manufacturers have to suffer the loss. So in that case what happens?

That sometimes this inventory, excessive inventory comes up in the pipeline only because of certain factors that sometimes we are not able to forecast the sales properly or in the right earnest that how much we are going to sell in the market or how much is going to be the demand for the product in the time to come in that case what happens? The production process is strengthened and more production comes out of the industry.

Whereas the demand for the product is not there that maybe because of the recessionary situations, maybe because of the say lack of the purchasing power of the people and this all maybe whatever the reason you could say, we would ultimately say that all these reasons or any of the reasons would attribute to the reduced sales reduced demand from the market and when there is no demand in the market it means our assessment of the market in the time to come has gone wrong.

So it means sometime inefficient management sometime some unavoidable circumstances as I told you that in case of the SAIL the circumstances were unavoidable. You cannot stop the production . You have a huge manpower 1.47 lakh people were there at that time with the Steel Authority of India Limited. So they are the permanent employees. They will not say that you do not pay us the salaries because you are not able to sell the product in the market.

So once you have to pay their salaries they are everyday coming morning to the plant office everywhere and then all the plants, 6 plants of the company, 4 major plants that is the Rourkela, Bhilai, Bokaro, Durgapur and 2 more plants they were continuous working and they had to so if you stop working with the plants at the desired capacity, the other costs will go up. So it was not possible to stop the production.

So production was continuous but the sales were affected. So I can say here that excessive inventory takes place either due to some unavoidable circumstances that company suddenly lost the market, production process cannot be readjusted. So inventory is mounting, company is not able to sell the inventory in the market. Or sometime when we are not able to forecast our sale, sales properly then also the inventory comes up.

So we should try to look forward in future that how much we are going to sell in the market. Same way we should produce and same way we should make investment in the inventory or in the stock of the raw material, work in process, and the finished goods so that everything remains under control and the overall cost of production does not go up just because of the inefficient inventory management.

Third point in the behaviour is firms draw down inventory, inventory slowly if no jump in the prices. Again that could be the one important reason. When because of the recession it entered the market or because when the say income of the people go down then the purchasing power of the people is affected. For example we have seen the say subprime crisis in 2007 and that say continued and that it became a global crisis and most of the countries in the world were affected negatively.

So people lost jobs. When people especially people who are working in the private sector, they will lose jobs because for the want of production and sales in the market. So when people lost jobs their purchasing power was affected and because of that the say selling in the market was very difficult for the firms.

But to talk of the manufacturing products when we talk about the subprime crisis that happened in US in 2007 even the inventory of the houses or the say people who were who had borrowed money from the banks and had purchased the houses then somehow when their purchasing power was affected or their income was negatively affected they were not able to repay back the EMIs on the loans which they had taken for buying the houses.

And ultimately they surrendered the houses so inventory of the housing increased with the banks and because of the increased inventory with the banks because everybody is surrendering the house as they are not able to pay the loan. So supply of the housing stock increased and prices fell down. So many banks were not able to recover their loans because ultimately what the bank can do is bank can take the charge of the house which has been purchased by the person by borrowing money from the bank.

So if the person is not able, is not able to repay the loan he has to surrender the house but if everybody is surrendering the house or every third person is surrendering the house the stock of the inventory of the housing went up and suddenly the price of the housing fell down. Many banks failed in US. Lehman Brother is the one bank that is the case that it was a dream company for many people to work in.

But that also failed and many other banks also had to face the heat of the subprime crisis. So in that case what happens that if the prices are not going up if the prices are not improving then certainly the inventory level has to be readjusted so that supply side also becomes weak and when there is a lesser supply and stable demand in the market or demand start picking up then only the inventory level is increased, manufacturing process is readjusted, strengthened and the more supply comes up in the market.

So if in any way when the supply goes up, demand remains stable or goes down then what happens? That inventory is increasing, prices are falling down. Other side if the demand is increasing, inventory is low, prices are going up. So what we have to see is we have to see we have to forecast that how much we are going to sell in the market in the time to come. We have to prepare the proper budgets for that.

And that will depend upon the sales forecasting that how much is going to be the total demand of the product we have manufactured and we are selling in the market. And in the time to come for example in the next 3 months, in 1 quarter how much is going to be the total demand for example we talk about the colour TVs. So companies have to plan in a way that how much is going to the demand for the colour TVs in the total Indian market.

What is the market share of the company in question and how much colour TVs they are planning to sell. So accordingly they should go for the production and that happens also. That is a natural inventory behaviour that happens also. And when say the inventory level starts mounting, production process is readjusted so to bring the inventory down the efforts which are made by the firms.

And the result of those efforts is that firms tend to sell more than whatever they produce. They shrink the production process. They control the production process. They do not produce as they were producing in the past. They shrinken the production process and when it is controlled production is reduced, sales are increased. So ultimately the effect is that again the inventory also gets readjusted.

Purpose of this all is to understand the inventory, inventory behaviour clearly and then to say following the changes and then implementing the changes and adjusting and readjusting the manufacturing process is that prices of the products which are in the market remain at the acceptable level for both the sides; seller also and the buyer also. So the continuous adjustment in the manufacturing process is required to be made.

Next point is economy seems to be the persistent industrial recession if the sales are not picking up right. If the sales are not picking up in the market it means the industry is in the continuous industrial or the persistent industrial recession. It will create a problem for all. It will create the problem for the manufacturer also. It has the already means created the problem for the buyer also.

When the buyer's power, purchasing power is getting affected negatively, in that sense what is happening? The seller also has to control the supply. Otherwise prices will fall down. So when the economies are in the persistent industrial recession or the purchasing power is affected, production processes are readjusted so ultimately it creates the problem for all. To deal with the problem if we are not able to sell in the market better it is not to make much investment in the inventory.

Make lesser investment in the inventory and produce less. If it is possible that is the best way to do the things. Firms increase sales if sudden jump in the say prices occur. If there is a sudden jump in the prices then certainly firms will increase the sales because they would like to recover the total investment they have made in the say inventory or in the manufacturing of the goods. Drawing from inventories with increase in production.

So then increase in the production, production picks up. Whatever is there in the inventory that is also taken out and most of the things go to the market and when the there is a high demand in the market certainly because it is a cyclical trend. So it means initially we started manufacturing the production then it started rising. It is at a point but because of certain reasons there was a industry recession so demand certainly fell down because of the negative impact upon the purchasing power of the people and then the demand was negatively affected.

So it means the industry has to slow the production also. They have to take out from the existing inventory and even if they are not able to get sell that inventory at the desired price then they have to say take out the minimum finished goods from the inventory also and they should wait for that when the market improves. If the market improves then because it is a cyclical trend so market will improve. So when the market improves then everything will pick up.

Production process will also pick up. Taking out from the inventory existing inventory will also pick up and that will be a win-win situation for the buyer also as well as for the seller also because buyer purchasing power has improved and for the seller the market has improved. But normally in case of inventory this kind of the cyclical trends are very common, they take place. So we should be very careful that to avoid excessive investment in the inventory because we are going to invest the short term funds and sometime what happens.

When the short term funds are not sufficient in supply then we have to invest the long term funds and you see there is a mismatch between the cost and the return because long term funds as I discussed with you in the past that in India today we also have the term structure of interest rates. So as the maturity period gets longer the cost of the funds also increase, the interest rates also increase.

So if you have borrowed the funds for the long term purpose it means for next 5, 10 years. So it means we are paying a high rate of interest somewhere 18, 20% and we are investing those funds in the inventory which is short term asset or current asset then there is going to be a mismatch because the return from the inventory is very low sometime, even negligible returns from this asset.

Whereas if the cost of the funds is very high so the firms finances, firms incomes are going to be impacted seriously, negatively because of the increased financial cost. So we have to be very careful that we should be able to visualize how the inventory is going to be managed by the firm and how the market is going to behave, how the sales are going to take place in the market and how the inventory level should be adjusted and readjusted.

Now why inventory level increases, why inventory level increases? We all know that there are many reasons why inventory level increases. As we have seen in case of the SAIL as I discussed with you inventory level in the SAIL, Steel Authority of India Limited increased because of the sudden change in the economic policy of the government. Till the till 1991 the economic policy of the government did not allow the participation of the private sector into the steel sector.

But suddenly after 1991 when the private sector participation was allowed in the steel sector private sector firms were allowed to come up in the steel sector, in that case SAIL got unforeseen competition from the private sector players. They lost the southern market, they lost the western market, part of the central markets of this country, central India and then near about say 30-40% market of the company is lost. So what happened?

Their manufacturing process as I said could not be readjusted. The production was continuous, sales were affected negatively. So inventory started mounting. That happens if sudden change takes place in any of the factors maybe because of economic policy, maybe because of change in the demand of the people, maybe because of the intensification of the competition in the market, maybe any reason could be there. So inventory can increase.

We should avoid the increase in the inventory level and we should be able to forecast or foreseeing the future that what could be the factors that might affect the inventory policy of the company negatively. So we should be able to visualize well in advance that if our inventory level starts going up what should we do? Or what should we do that inventory level remains under control, it does not go up.

So for that reason we should understand why the inventory level goes up. There are certain reasons we have listed out here.

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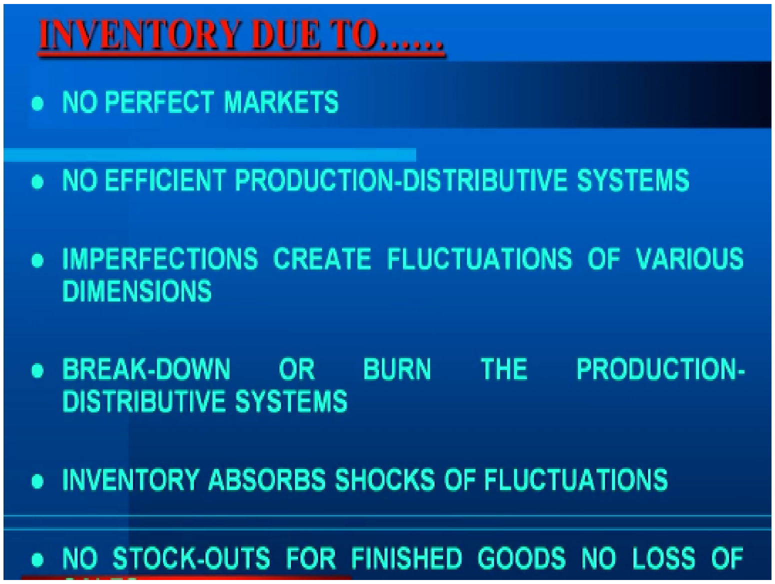

We have put here some reasons like first is no perfect markets. Because it is not very it is not very easy to find out the demand and supply scenario in the market. It is not very easy to find out. Now when there is a sudden increase in the income of the people, people start demanding for even both services and goods which are not demanded much in the past. So what are the factors?

We should be able to find out that is there any possibility that the income of the people is going to increase because of any reason? Then say in the beginning of any new financial year when the companies say announce the hike in the salary of their employees or sometimes when the government announces the hike in the salary of its own employees we can expect that the income of the people go up.

When the income of the people go up, goes up in that case you should expect that yes people will start demanding for more goods and services. It may be possible that all segment or all category of the people, all income, people belonging to all income groups; everybody's income is not growing. There might be different segments of the people. Say for example you talk about the upper middle class.

If the income of the upper middle class is expected to go up we can say that people may start say buying more cars or looking for more cars. People who are say in the lower classes or lower income groups or maybe the lower middle income groups, they may start looking for more two-wheelers, more colour TVs, more refrigerators. So it means we will have to see that what are the economic factors which are going to change the demand, impact the demand.

Maybe positively, maybe negatively. So since we do not have the perfect markets, it is not very easy to visualize how the demand and supply will behave in the market, these forces will behave in the market. So because of sometime of imperfect prediction of demand for any product increases the inventory level because companies strengthen the manufacturing process. But when the income does not increase, when the people do not buy the manufactured goods which are available in the market in that case inventory level goes up.

So since the market is imperfect we should be careful how to find out what is going to happen in the market as far as the demand and supply situation is concerned. The companies at least the product which they are manufacturing they can conduct the surveys, they can be more nearer to the people, their existing buyers or maybe the potential buyers they can collect the regular information from the market and then they can try to find out what is going to be the possibility or what is the possibility of increasing or decreasing of the sales of their product in the market.

That is a very important requirement if you want to control the investment in the inventories. Another reason could be no efficient production distributive system. Sometimes, normally the firms have the proper distribution channels right; firms have proper distribution channels but say we have 2 kind of the marketing systems in this world. Sometime we have the direct marketing system and sometime we have the indirect marketing system.

In the direct marketing system we say that there are the companies who have their own distribution channels, their own distribution network for example you talk about Bata right. Bata sells in the market first they sell it directly through their own network, through their own shops and through their exclusive stores. Similarly, we have some branded say apparels also like you talk about the Reebok, you talk about the Nike, you talk about the Puma.

So all these products largely they have their own exclusive distribution network. So when they are directly manufacturing and selling in the market they remain connected to the people, existing as well as the new buyers. So they remain informed that how people like their production, how people react about their product, and what changes people expect and if we make the desired changes as designed as expected by the buyers then the sales of the product may pick up.

But sometime what happens? We have the indirect distribution channels, which is a normal process. Somebody else manufactures the product and then we have the distribution process. The product from the manufacturer it goes to distributor. From the distributor it goes to the retailer and from the retailer it goes to the or sometime there are the 3 people; distributor, wholesaler, retailer, and then consumer. It is a very long chain. So in that case sometime what happens?

When the retailer is not helping the company to sell the product, when the retailer is not helping the company to sell the products sometime what happens? Companies compete with each other and they keep on luring the retailers by offering them different schemes, different percentages of the margins and different other incentives. Now any retailer who is given a incentive by a company he would like to sell more of the products of that company rather than of any other company.

So it may be possible that the company was given the incentive and the company who has not given the incentive, the company who has not given the incentive to the retailer might not be knowing that the retailers preferences have changed and when the retailers preference is changed in that case it is sometime creating the fluctuation in the demand and supply situation. Product is not moving to the customers as at the desired pace.

Retailer is convincing the customer even though the customer has come prepared to his shop to purchase a particular product but since retailer’s interest is with some other company so he sometime convinces the buyer that rather than buying the product of this company you buy the product of that company. So in that case which if it is known to the company whose inventory is in question then this fluctuation may take place.

And we will have to think about that how to take care of such kind of the factors. Now in a situation I would share with you a very important thing that when you talk about the relationship between the manufacturers, retailers, and the consumers right; between the manufacturers and the users of the product, consumers of the product there is one for example we forger the other two, distributor and the wholesaler. We say only retailer is there. So what happens?

Retailers first are the agents of the consumers then they are the agents of the manufacturers right. They want to give the best product to the consumer so that consumer is satisfied with the product which he has purchased from a particular retailer and consumer keep on visiting him time and again. To change this loyalty of the retailers from the consumer to the manufacturer some companies give them different kind of incentives.

And for that incentive he changes his position as a say loyal to the consumer rather than being loyal to the consumer he becomes loyal to the seller or to the manufacturer and because of that the company who has given the incentive their sales pick up and the companies who do not give the incentives their sales are getting affected negatively. So these fluctuations also cause some increase in the inventory. Break-down or burn the production distributive system.

Sometime there are some mishappenings and the say productive distribution system is broken down or it is say it is getting affected. For example there is no availability of the raw material or very less availability of the raw material. So what will happen? Supply of that product will be affected negatively in the market. Sometime there is a technical fault in the manufacturing process of the firm so they are not able to pick up with the production process.

So that also affects the supply position in the market. So in that case it is not good for the manufacturer, it is not good for the consumer also. Because in certain cases we have seen that the prices of the essential commodities go up. We see the prices of the sugar sometime go up sometime we see the price of the onions go up. That only happens when there is a breakdown of the supply system.

Maybe because of the non-availability of raw material or maybe because of the not efficiently working the plant conditions or maybe because of any other reason and inventory is affected. Sometime we have high amount of inventory but because of the breakdown non-availability of raw material there is a very low level of inventory or sometime no inventory available so again the firms are affected for the stock-out cost. Inventory absorbs the shocks of fluctuations right.

So if we keep inventory and sometime if there is a unprecedented demand in the market if we have the sufficient inventory we can fulfill the demand. It happens reverse also. That you have huge inventory, demand has gone down, and we have to continue with the existing level of inventory and your sales are blocked, sales are not picking up. Your funds are blocked because of the high level of inventory. So anything is possible.

No stock-outs for finished goods, no loss of the sales. So it means if we want to maintain a appropriate or the optimum position in the market we should take the inventory management very seriously. We should look forward and try to find out the reasons which may affect the inventory situation negatively. We should try to find out that how to maintain the optimum level of inventory so that investment in the inventory is also optimum.

Sales are also optimum and ultimately the profitability of the firm is also optimum or maximized. So these are some of the reasons why the inventory takes place, picks up and we have to visualize these reasons and we have to try to control the effect of these reasons. Some more thing about this inventory management we will be talking about and learning about in the next part of discussion. Thank you very much.