Managerial Economics
Prof. Trupti Mishra
S.J.M School of Management
Indian Institute of Technology, Bombay

Lecture - 24
Theory of Market

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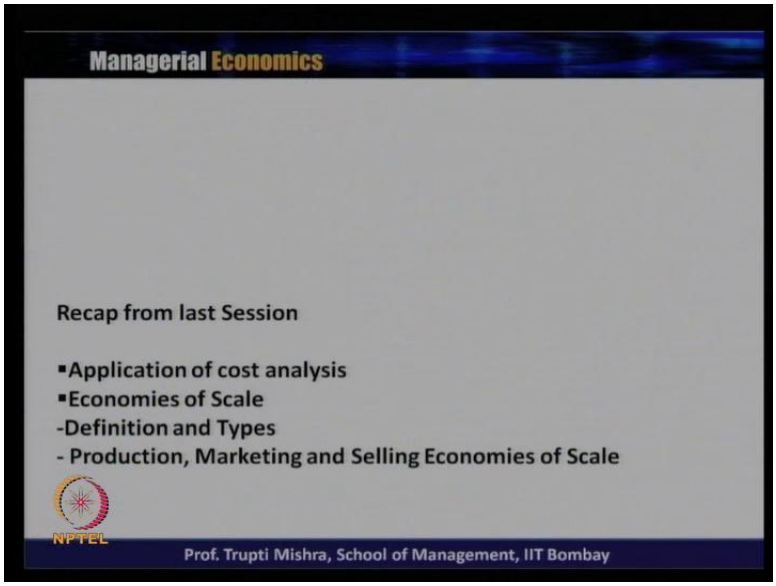

So in today's session, we will continue our discussion on economies of scale and what we were doing in the last session. So, if you remember in the last class we talked about the application of cost analysis specifically optimum to the optimum output level, what is the requirement cost analysis when to identify the optimum output, optimum inventory and optimum scale. And then we discussed about the economies of scale generally what the large point or the large firm gets, in term of the decreasing long run average cost with when the scale of output increases; and in that context we identified or we defined the economies of the scale.

Then we have identified the types of economies of scale like pecuniary economies of scale, and real economies of scale, and if you know the essential different between the pecuniary and real economies of scale is; in case of pecuniary economies of scale, there is a reduction in the price of the raw material or the price of the inputs that brings less cost to the firm. And in case of real economy, it is not a reduced money or the reduced value of the inputs, rather it is the reduce quantity, reduce amount of the input what has to be used in the production process so that the firm gets cost advantage.

In case of real economy, there are four different kind of economy. Here it comes from four different sources; that are production economies, then marketing and selling economy, managerial economies of scale, and finally transport and storage economies of scale. So, in the previous class we discussed about the production and the production economies of scale, which is again subdivided or which comes from the either capital or from the labor or from the inventory and in case of marketing and selling activities, selling economies of scale we discuss about the advertisement, we discuss about the expressive arrangement of producer with the dealer, we discuss about the model change economy, and how all this factor brings economies of scale to the large firm or economies of scale to the large plan.

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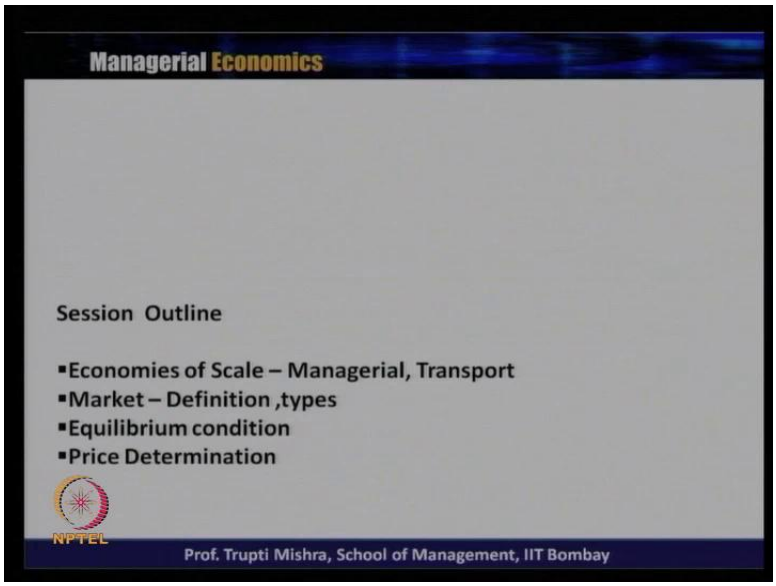

Today we will continue our discussion in the same line with another two types of economies of scale; that is managerial economies of scale and the transport and storage economies of scale. Then we will start a new module; that is the theory of market. We will look for the definition and the types of market, we talk about the equilibrium condition and how the price determination takes place in the different time period.

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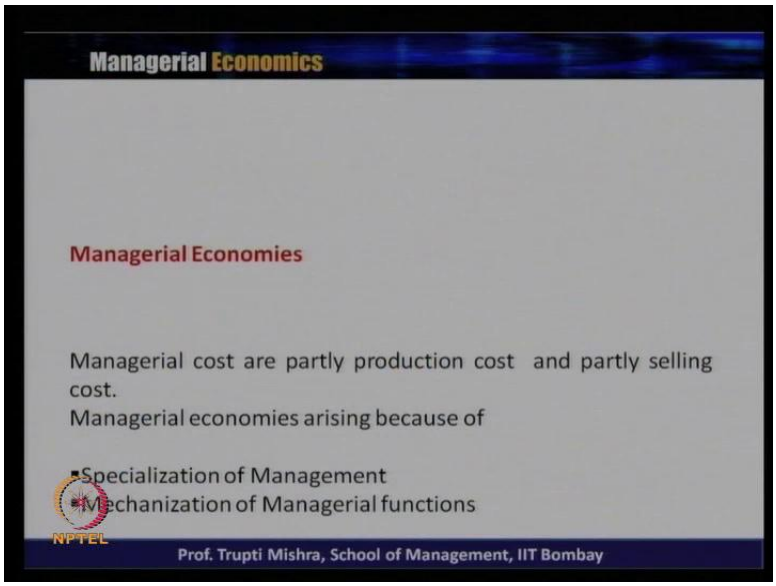

To start the discussion we will talk about the managerial economies of scale and here the point to remember that, managerial cost are partly production cost and partly selling cost, and generally the managerial economics arising, because of specialization of management and mechanization of the managerial function. These are the two factors which contribute most to the managerial economies of scale. So, the cost has two parts; one is the production cost and the second one is the selling cost, and typically the cost advantage comes from the specialization of management and mechanization of the managerial function.

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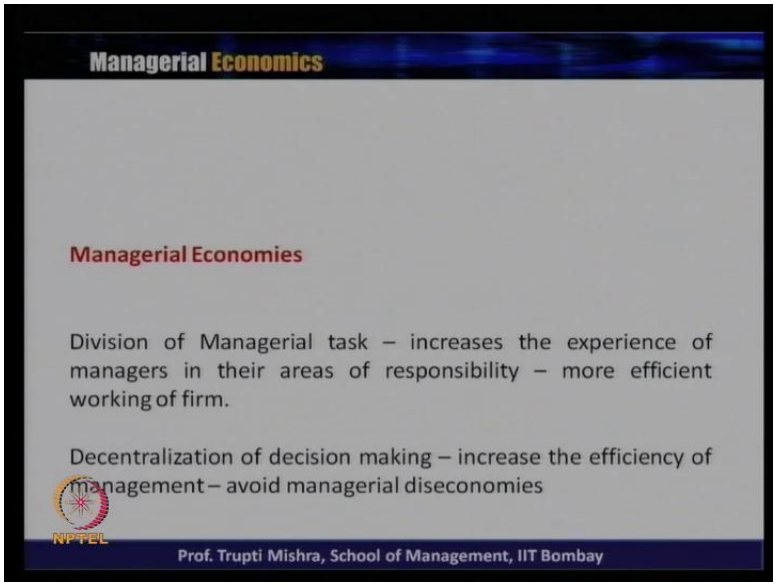

So in case of large scale, if you look at it has happened at there is a division of the managerial task because there is a large full of resources, large full of skilled manpower that leads to the division of the managerial task, and when the division is taking place what is the outcome. It increases the experience of manager in the responsibility leads to more efficient working of the firm. So, the division is on the basis of the scale. The division is on the basis of the experience. So, in one way it increases the productivity. In the other way it also increases the experience of the manager in their area of the responsibility.

As a whole it leads to more efficient working of firms. Since there is a division of the managerial task that leads to the decentralization of the decision making, it increases the efficiency of management and avoids the managerial diseconomy. What is the decision of the decentralization of the decision making? If you are seeing in a small firm, there is one manager who takes decision about the finance, who takes decision of marketing, who takes decision about the human resources, who takes decision about the strategy, who takes decision of the long term goal of the company, the vision of the company, who takes the decision about the operations of the company. But when the same scenario in case of a large company; there is one manager for operation, one manager for hr, one manager for marketing, and one manager for finance.

So the decision making, there is no discussion of information or there is no flow of information goes internally from one person to another person or in a hierarchy level to the boss, the top official, because the decision is taken individually by the domain specialty. If it is hr, then the hr manager has to take a call. If it is marketing activity, the marketing manager has to take a call on it. If it is finance, the finance manager has to take a call. So, since there is a division of labor and for each assignment there is a manager that leads to decentralization of the decision making, and it increases the efficiency of the management, and it also avoids the managerial diseconomy.

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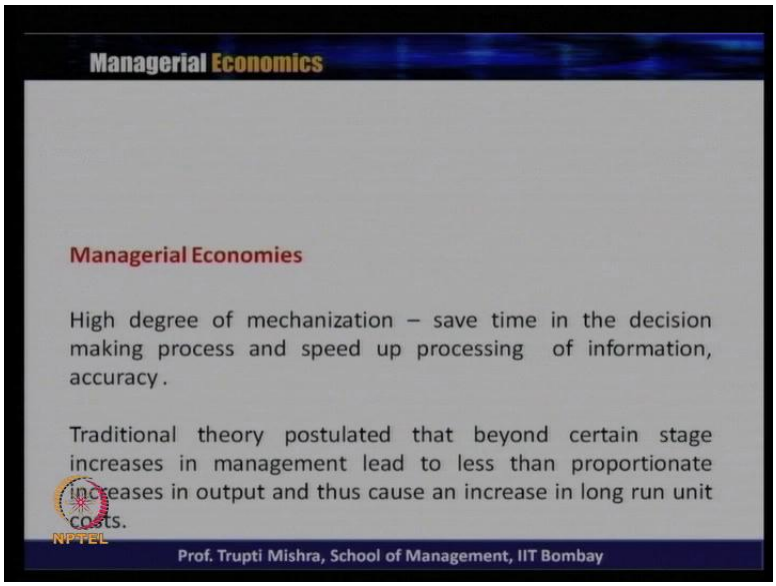

Another point here is the high degree of mechanization. It saves time in the decision making process, they speed up in processing the processing of information and accuracy. So, again there is no discussion of the information, less internal flow, and that is the reason because of mechanization it saves the time of decision making process. Like if you look at if there is no mechanization if the corporate office needs the information from the plant, may be they have to wait from the mail, they have to go through the postal mode to get the information.

But now with the advent of fax, telephone, online like you talk about the Skype, you talk about the different kind of invention of the different kind of contacting each other. Then media to reach each other has so much that generally possible incase of the large scale operation, and the outcome is that it save times in the decision making process, in speed of processing of information and accuracy. So in one way, we have already we have assumed the fact that large plant large firm because of division of the management, because of the disadvantages of decision making process, high degree of mechanization that is good and that brings the economies of scales.

But traditional theory postulated that beyond a certain stage increase in the management leads to less than proportionate increase in output, and thus cause an increase in the long run unit cost. So traditional theory always say that, this economic of scale the advantage of the groups, the advantage of the mechanization, the advantage of the decentralization, it is always up to a point; beyond that even if it is done through the management, even of

it is too much control of the management, generally it takes in the adverse direction and that leads to the managerial diseconomies of scale.

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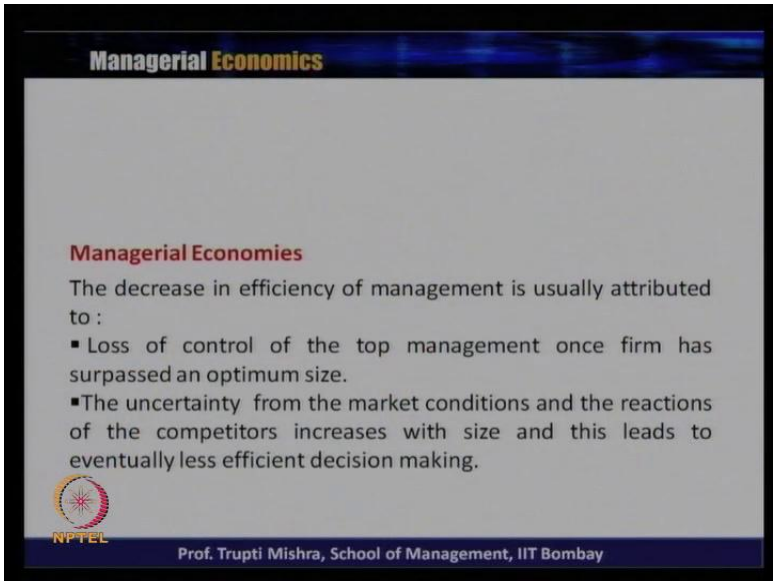

And the decrease in the efficiency of management is usually attributed; generally how why the traditional theory first leads that and what may be the factor when you talk about the managerial diseconomies of scale. The decrease in the efficiency of management is usually attributed due to: loss of control of the top management once the firm has surpassed the optimum size. So till the time the optimum size is there. Till the time firm has not reached the optimum size, the top management has kept everyone is the control and they have given the direction how to work and how to perform.

But once the firm has surpassed the optimum size, generally there is a loss of control from the top management and that may be leads to the one of the factor which decreases the efficiency in the management. The second one is the uncertainty from the market condition and the reaction of the competitor increases with size with this leads to eventually less efficient decision making. So, there is always an uncertainty in the market condition, the reaction from the competitor because if you look at it, it is the same strategy followed by the company. From last 25 years, the competitor knows the strategy and they are going to react accordingly that company A has this strategy, so company B has to follow something else because company A goes in that direction.

So, given that competitor reaction and may be the uncertainty from the market condition, which increases with the increase in the scale of operation leads to the eventually less efficient decision making and that is how may be the traditional theory argue. The traditional theory argues that may be managerial economies scale is up to a level, may be in a very specific point up to the optimum scale and beyond this generally some evidence of the managerial diseconomy, and that leads to increase in the long run average cost curve, and that is why we get the increasing shape of the average long run cost curve after the optimum level of output.

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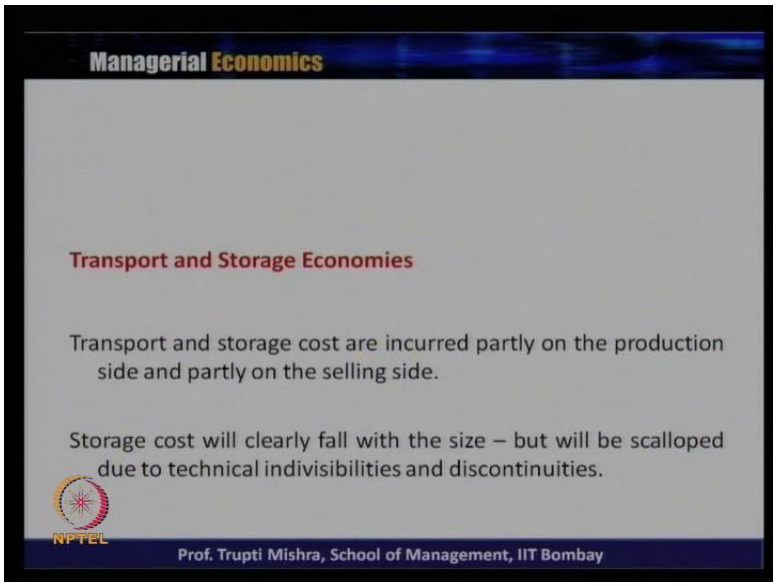

Then we will talk about the last kind of real economy or last type of real economies what we have listed down, that is transport and storage economy. So, transport and storage costs are incurred partly in the production side and partly on the selling side. Because few of the activity of the transport and storage cost comes within the domain of the production and few comes within the domain of the selling. So storage cost will clearly fall with the size, because if you look at if you are taking if you have built a warehouse, then if 100 units if you are keeping as an inventory as a stock, then per unit cost is on a higher side. But you are putting more, then the cost of production generally comes down; the average unit cost generally comes down. So, storage cost will clearly fall with the size, but will be scalloped due to technical indivisibility and discontinuity.

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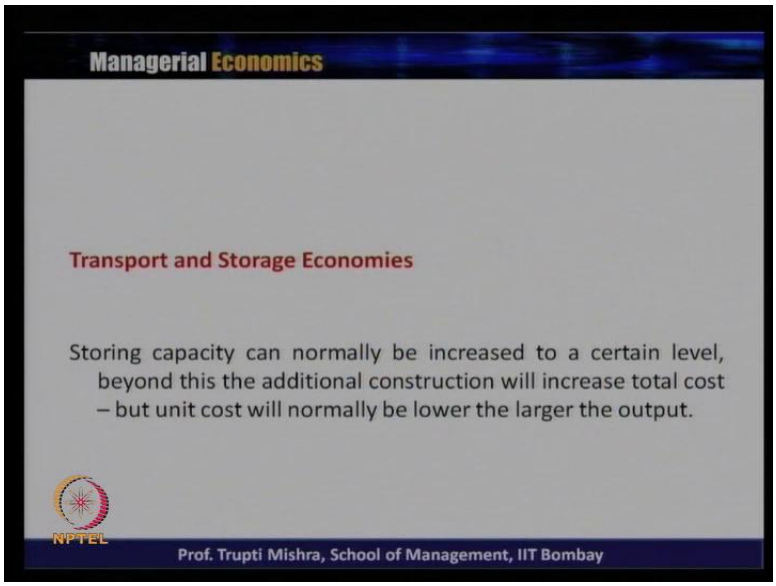

Storing capacity can normally be increased up to a certain level, beyond this additional construction will increase the total cost, but unit cost will normally lower than the larger than the output. Suppose the warehouse is the capacity of 100 units. So up to 100 units, any additional unit of output will always bring down the cost. But once the stock goes beyond 100 units, now it is not in the capacity of that storage, not in the capacity of that warehouse they need to construct the additional storehouse.

Here initially again the cost is in a higher side, till the time there is no larger amount or the larger unit of the output is being kept. Once it is being kept, again as the average cost for all unit of the output generally comes down. So, storing capacity can normally increase up to a level, like according to the capacity of warehouse. Beyond this the additional construction will increase, but the total unit cost will normally lower than the larger than the output.

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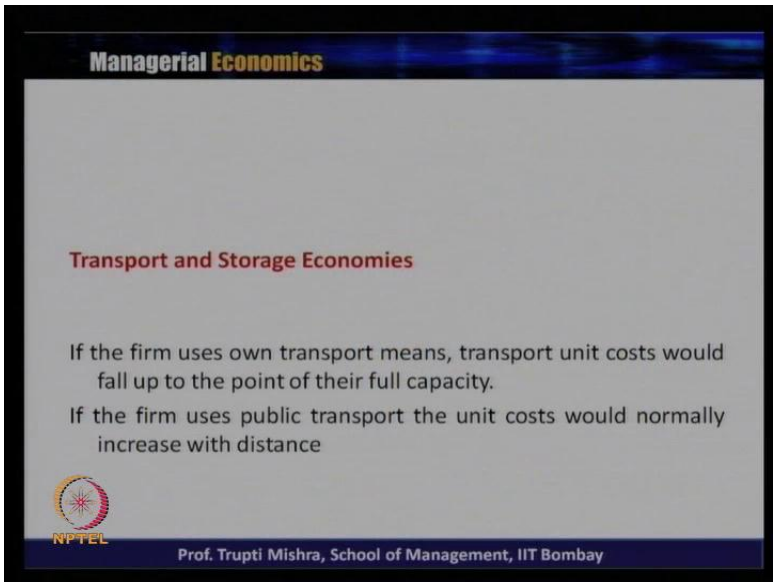

Similarly when it comes to the transport, generally if the firm uses own transport means transport unit cost will fall up to the point of their full capacity. Because its own transport means, its transport unit cost generally decreases because of the full capacity because it is the own transport. If the firm uses public transport, the unit cost will normally increase with the distance, because it is a public transport; more you transport, the unit cost will be more if the distance is more. But if the firm uses own transport means transport unit cost fall up to the point of their full capacity.

Because if 100 units is getting transported by own means, it is better to get transported 1000 units because that will reduce the transport cost per unit as the less. But for the public transport if your 100 unit and if you are paying something, you pay more for the volume and more for the distance when you are transporting 1000 units, and also transporting may be the distance is more when you are doing the transport. So, transport economies of scale generally comes from the large scale larger firm, because they can afford their own transport means to transport their goods and services from one place to another place.

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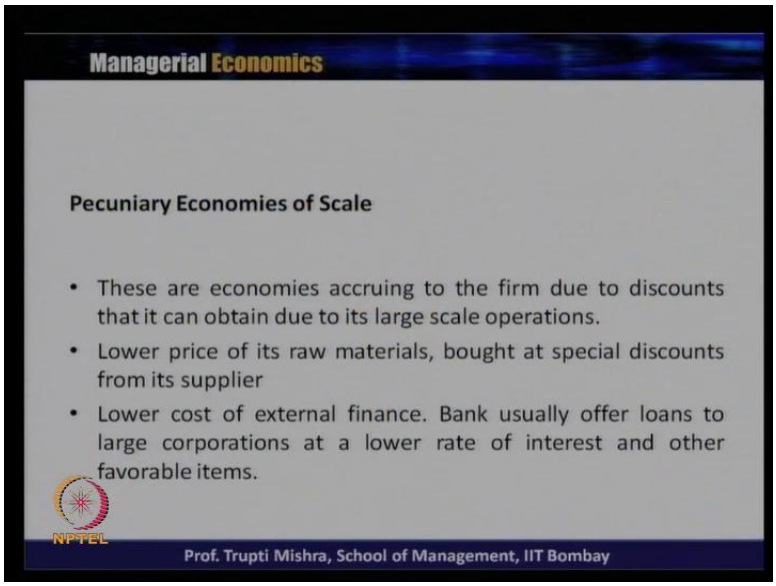

Then we will come to the second type of economics of scale that is main division if you remember the real economics of scale and pecuniary economics of scale. Pecuniary economies of scale is one where there is a reduction in the price of the raw material, there is a reduction in price of the inputs and that leads to the advantage cost advantage of the firm. So pecuniary economies of scale, these are the economies occurring to the firm to discount that it can obtain due to large scale operation.

For example, lower price of its raw material bought at a special discount from its supplier. So if it is a large scale, if you are buying it in bulk; generally you get a discount. That happens in like almost all the cases, when you buy it in bulk you will get it in the lower rate rather than the individual unit. So if someone is doing that operation and the scale of operation is increasing, then they get a special discount from its supplier because they are buying more and they are paying a lower price to the raw material.

Similarly, lower cost of external finance banks usually offer loans to the large of corporation at a low rate of interest and other favorable items, may be the terms and condition also changes if it is large corporation because basically there is no problem with their repayment. They have already built up their trust and they have also kept credential to return it back whatever the money they are giving. So since they are paying, they are getting the higher amount of loan from or they are getting a higher amount of finance from the bank. The bank will not mind also charging the rate which is lower than the adjusting rate and in that way, they get a lower cost of external finance and through

that they generate the economies of scale to the firm, and this is also known as the financial economies of scale comes under the pecuniary economic of scale.

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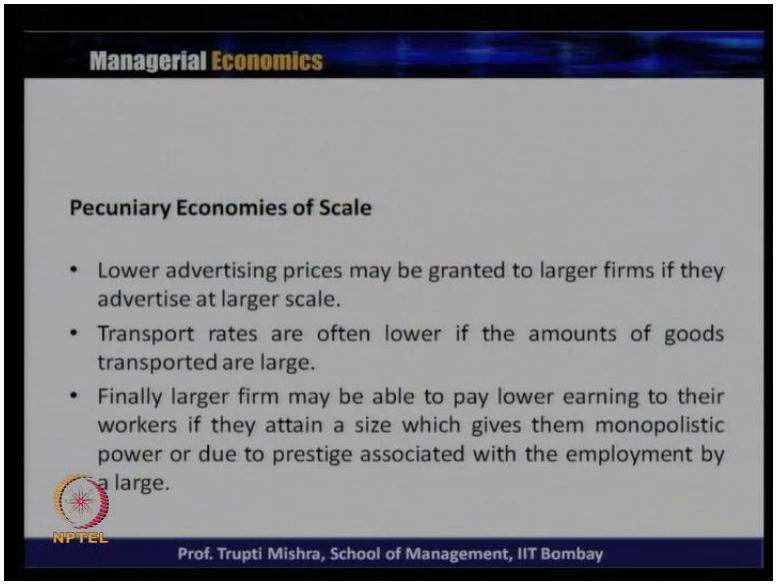

Then sometimes the lower advertising price may be granted to larger firm if they advertise at a larger scale. So, if you look at lot of big corporate house what they do, they pay the money in lump sum to the media houses. Like throughout the year whatever they are going to advertise, the media house will go advertise and they will charge in lump sum. The same thing cannot be done by a small firm because if there are paying a large sum and if there is nothing more to advertise, then generally they will it is not possible for them to pay such the unit cost or the total cost for them in a higher side. But since it is large scale and they do generally on a continuous with the advertising, so if they are paying as bulk rupees generally per unit cost comes down for the advertising expenditure.

So, lower advertising prices may be granted to larger firms if they advertise at a larger scale. Transport rates are often lower, if the amount of good transported are large because they gets discount like; if the firm is getting or if the plant is getting drugs from the third party to transport and if you regularly call the drugs, if you regularly ask the particular vendor to bring the drugs, and also on a higher quantity they can always negotiate and the transport rates can come down to a lower one. Finally larger firm may be able to pay lower earning to their worker, if they attend a size which keeps their monopolistic power due to prestigious associated to employment by a large. So, this

generally happens in case of real life that you pay less to the people still they will work for it.

You take the example of typical IT Company. If the company is known for its brands, if the company is well known, qualified personnel will not mind working for the company even if he is getting a salary which is less than the market rate. But this is not possible in case of small scale small industry because they are yet striving to get their name, yet striving to get their brand. So, in that way also the large scale that gets some cost advantage because they get manpower. In a simple way they get the manpower at a lower rate because people they work for them, they generally work for the brand and they feel good associated to be with the brand. So they do not mind if you are getting at a lower salary as compared to the market rate and that is how if you look at; that is one more source of economy the pecuniary economies of scale for the firm.

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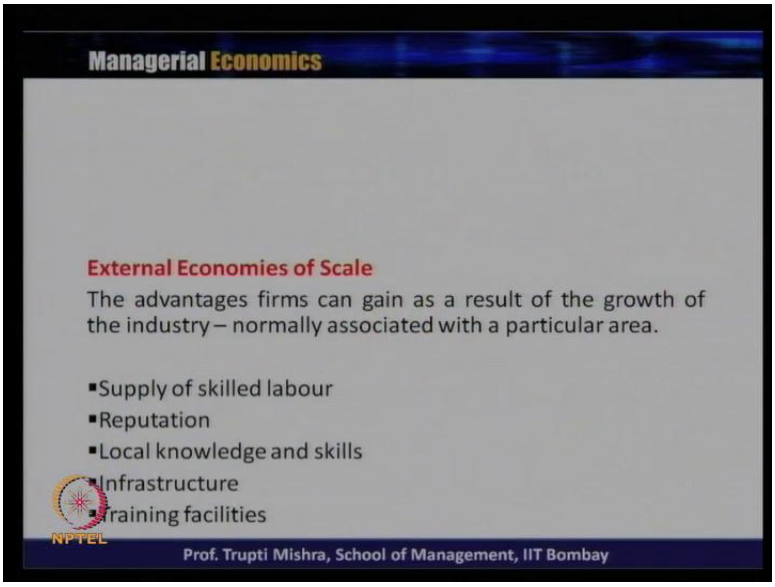

When you talk about that, till the time these are all internal economies of scale. Now there is one more economy of scale; that is external economies of scale and what are the external economies of scale. Here the advantage the firm can gain as a result of growth of the industry normally associated with a particular area. So, if there is a growth of industry in that particular area where the firm is there, the firm gets some advantage because of the growth of the industry and what are the advantage; either they get the advantages in term of supply of skilled labor because anywhere there are skilled labor coming to work for the industry, so that is how they get the supply of skilled level.

They get a reputation because they are near to a good industry, local knowledge and skill they can use, they get good infrastructure and they get good training facility. So these are like, if the industry is built in a remote area if you will find there is some basic necessity, the basic amenity they build for that particular area; like may be a hospital, may be a good concrete road, may be some water supply, whatever is their infrastructure there also they get an excess to it and they get a cost advantage to this and that is how the external economies of scale. But the cost advantage they get it from the third source, not from their either from their real economies or from the pecuniary economies or from the internal source.

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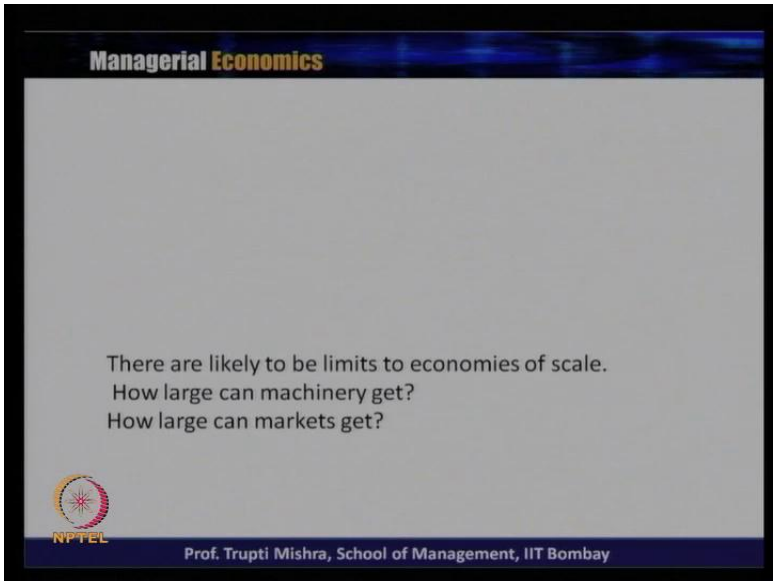

Now we know that the cost advantage is getting by the firm. They are getting at the lower operation cost when the scale of operation is increasing. But what is the limit? Because we know that when the machinery is large, we get economies of scale; we know that the scale of operation is more we get the economies of scale. But how large can the machinery get, how large can market get, that it will increase the scale of operation and that is the reason we know that there is a limit to the size of machinery, there is a limit to the size of market, and that leads to the limit of the economies of scale or the firm where they should stop, they are not getting any other cost advantage beyond that point. So, that brings the limits to economies of scale and they are the diseconomies of scale generally started.

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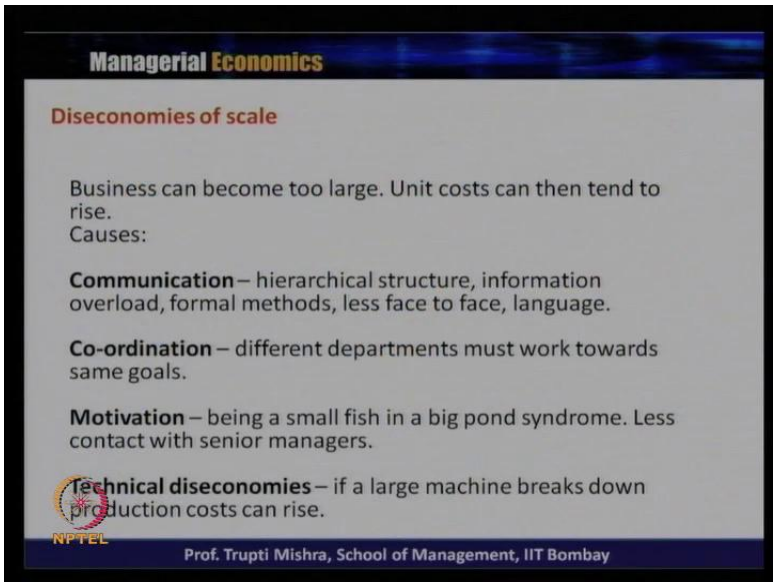

So, business can be too large. But still unit cost can then tend to rise because the causes are communication may be the hierarchical structure, information overload, formal method, less face to face, language. Co-ordination different department must work towards the same goal because it is large. Business is lack of communication because may be of hierarchical structure, because of information overload, because of formal method, because of less face to face meeting, because of language, because of the lack of co-ordination. Ideally different department must work towards the same goal; motivation being a small fish in a big pond syndrome, less contact with the senior manager. Technical diseconomy if the large machines break down production cost can increase. So there is diseconomies of scale once the scale of operation goes on a very higher side the business can be too large.

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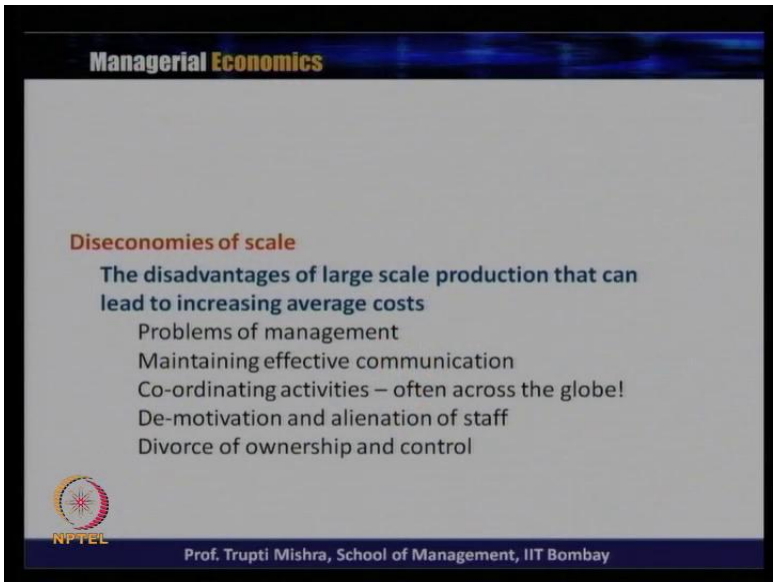

So, the disadvantage of the large scale production that can lead to the increasing average cost can be with the problem of management, maintaining effective communication, coordinating activities often across the globe, de-motivation and alienation to staff, and divorce and ownership and control. So if you will take all these points, all this part is from the management and this is how the traditional theory of economies always say that the diseconomies of scale comes mainly from the management, and that is the reason the average cost of production generally increases.

So if you look at it, if you summarize it, if you try to remember also the discussion we had on economies of scale may be in not in production, may be some part of it in technical, not in selling, not in marketing, not anywhere rather the diseconomies comes mainly from the management because their attitude, their behavior changes, their working style changes when they operate on a larger scale of production or when business goes too large in to the account.

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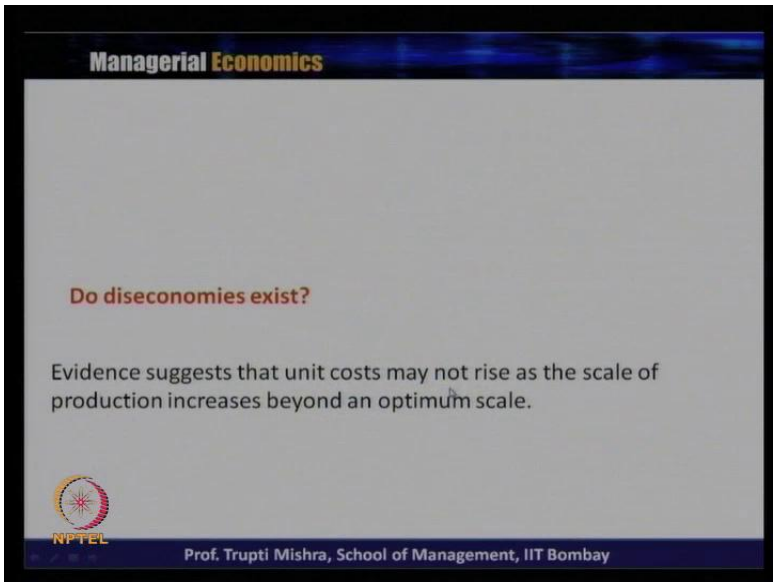

So the question comes here, do diseconomies exist. Evidence suggests that unit cost may not rise as the scale of production increases beyond an optimum scale. So evidence suggests that unit cost rise as the scale of production increase beyond the optimum scale but still there is a limit. It cannot increase more. May be the increase is there but still it is moderate, and it is a kind of fluctuation once it reaches the maximum. Then again it has to come down; again there has to be some economies of scale over there.

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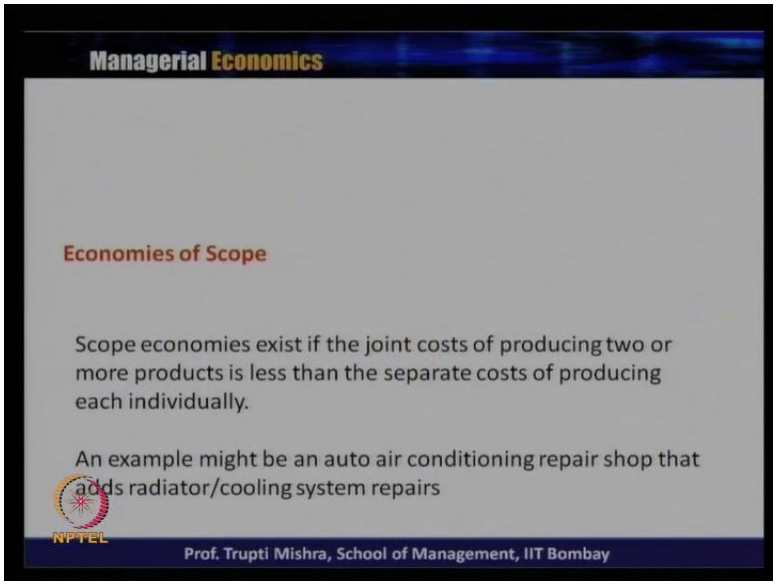

Then there is an interesting concept with respect to economies of scale that is economies of scope. So till the time we are talking about one product, one firm, one industry. But

economies of scope deal with the joint cost of producing two or more product. So, scope economies exist if the joint cost of producing two or more product is less than the separate cost of producing each individually. So an example might be an auto air condition repair shop that adds radiator and cooling system repair. So if you look at also, if you go to a mechanic shop you will get the repair at times in different segments.

May be it is a refrigerator, may be it is a television, may be it is a music system, may be it is a grinder, whatever is there he repairs everything. Because he is not skilled for only one product and here if you look at if he is doing separate for refrigerator, separate for television, may be the cost associated with that in a higher side. But when that is getting done jointly, always the cost of production is lower and there we say that, there is an evidence of the economies of scope or scope economies exist over there. No much evidence like; no much example you will find about the economies of scope. But still it is a very important concept when you talk about joint cost of producing two goods, which is always lower than the separate cost of producing it.

Then we will start our actually fifth model which talks about theory of market where we basically look at the different kind of market; that is the perfect market, imperfect. We will see individually for each market how the price and output is determined. How generally firms they get profit under each market structure, and then finally we will take a specific example for each of this market to understand that what is their applicability or what is their; may be when you bring the example of that into the real world how much existence of there in the real world. So to start with, let us define market and as you know it is a very simple, from market you know where is market, right. So market is the place generally where the buyers-sellers meet, exchanges, and the transaction takes place. So to define formally, we can say market is one where the buyers and sellers do the transaction with the full information on the price and the product.

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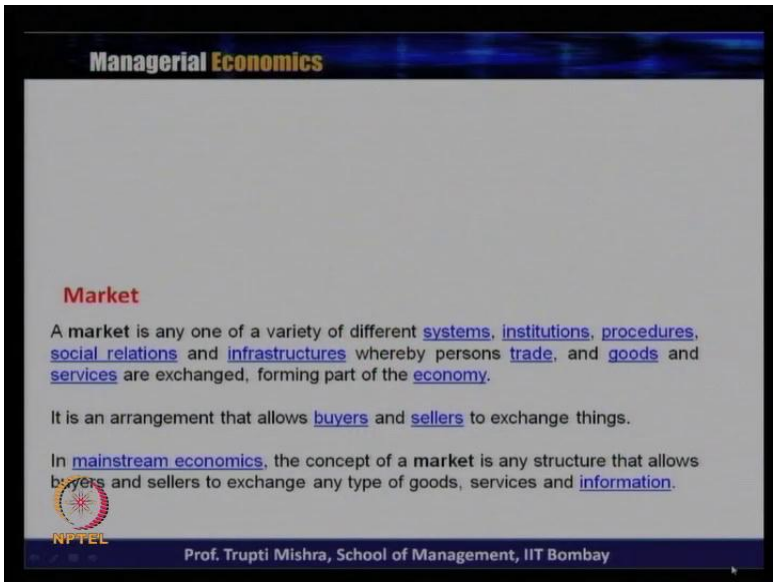

So, to go beyond more formal definition of market; market is one of the variety of different system, institution, procedures, social relation and infrastructure whereby a person trade, and goods and services are exchanged, forming the part of economy. So, it is an arrangement that allows the buyers and sellers to exchange things, and in typically mainstream economies, the concept of market is any structure that allows the buyers and sellers to exchange any type of goods, services and also information. When we talk about information here because information is also now a product, you do not get it freely in many cases. So in mainstream economics, generally the market is any structure which allows the buyers and sellers to exchange any type of goods, services, and information.

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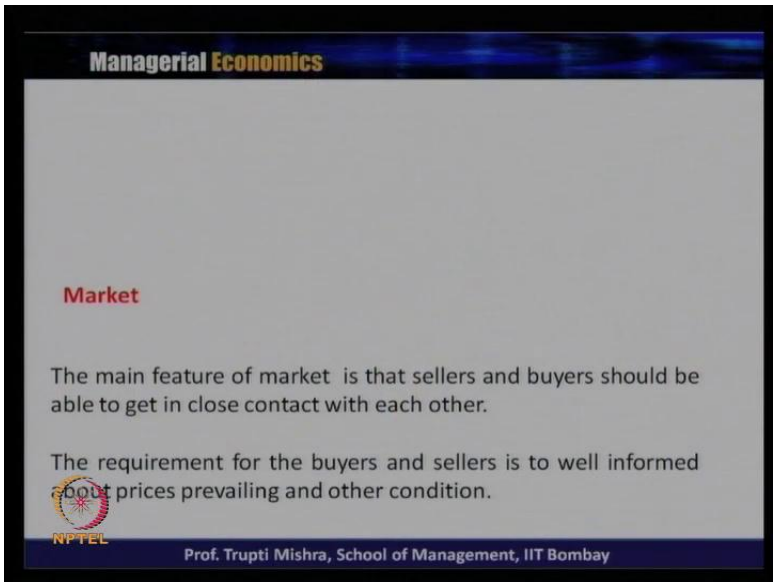

So, the main feature of market is that sellers and buyers should be able to get close contact with each other, and the requirement for the buyers and sellers is to well inform about the prices says prevailing and other conditions.

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So, to sum up we can say market is any organization whereby buyers and sellers of a goods are kept in close touch with each other and there are four basic components of a market; that is consumers, sellers, commodity, and price. So consumers and sellers, they are the economic agent; one has to buy, one has to sell, both of them has to get into the transaction. Apart from that, the product; that is the main component of the market.

Because of the product the buyers and sellers they are meeting each other, and finally the value at which the transaction is taking place, and generally that is the market. So, there are four basic component of a market; that is consumer, sellers, commodity or product, we can use the word interchangeably and now in fact goods and services, because service is also a product for which the transaction takes place between the buyers and sellers, and finally it is the price.

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Let us see how we can classify the market. Either we can classify the market on the basis of area; that is local, national, and regional. So if it is a locally placed, then it is a local market. The typical may be the weekly market we get it in our; that is the local market, the weekly vegetable market or what. National market in the national level, regional market in a regional level or we can classify the market by the nature of transaction: Spot and future. Spot market is one where the transaction takes place immediately and future market the transaction takes place for a later date of later point of time. Classification by volume of business: Wholesale and retail. So, if it is buying it in bulk, generally that is known as the wholesale market. If it is in buying in a unit wise, that is the retail market.

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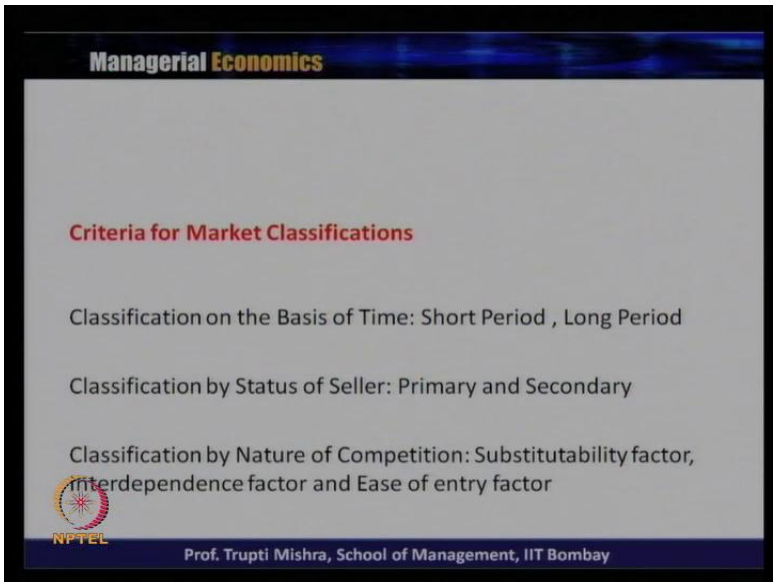

Classification on the basis of time that is short period and long period, that again brings the difference whether it is perishable good or whether it is a durable good. Classification by the status of the seller that is primary seller or the secondary seller, and classification by the nature of competition that is through substitutability factor, interdependence factor, and ease of entry factor. So, our focus is mainly on this that when we are classifying the market on the basis of the nature of competition and there are three major factors, there are three major variables, through which we differentiate the market one from the other. So, let us focus on the last classification that the classification on the basis of the competition and then we will see how we can define all the markets on taking the different variables.

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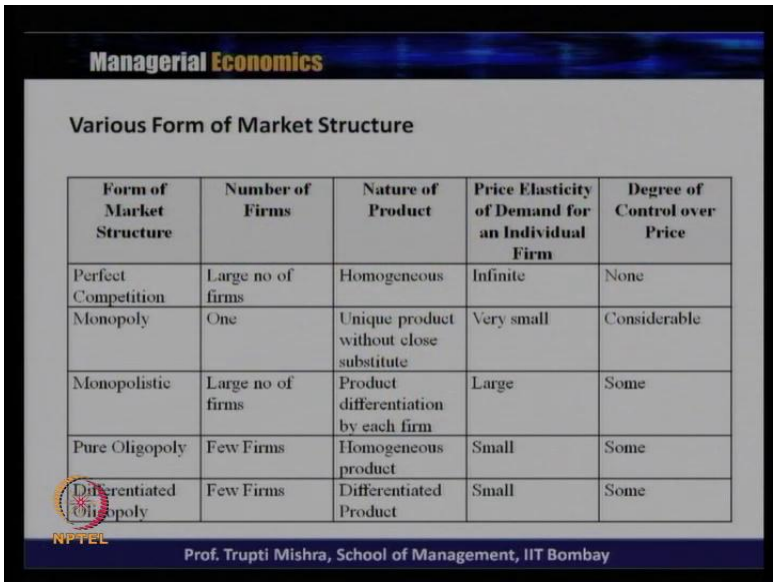

So, taking the number of firms, nature of product, price elasticity of demand for an individual firm, degree of control over price, these are the variable. On that basis there are different forms of the market structure. The first form of market structure is competition. The number of firm are large, nature of product is homogeneous or uniform that is similar, price elasticity of demand for an individual is infinite. A small change in the price will lead to take a bigger change in the quantity demanded because there are large number of firms, and all the firms that producing homogeneous product and degree of control over the price is none because here the price is decided by the market demand and market supply.

Monopoly, the number of firm is one. Its unit product without close substitute, price elasticity of demand is very small because since there is a unique product, even if the price increases still people they buy it and degree of control over the price is considerable. Monopolistic, large number of firm, product differentiation by each firm; like even if there are large firm of firm, each firm produces a different type of product which is different from the other. Price elasticity of demand for individual firm is large. Degree of control over the price is some or may be its little.

Pure oligopoly, then the last category of market structure is oligopoly. And again it is divided into two types of oligopoly; pure oligopoly and differentiated oligopoly. Pure oligopoly is one where there are a few firms, nature of product is homogeneous, price elasticity of demand is small, and degree of control over price is also some.

Differentiated oligopoly, few firms, differentiated product, small, and the degree of control over the price is some. So, individually we will check each market structure.

But here the basic difference if you look at that one is the perfect competition and rest all are the imperfect competition. So, we have one perfect competition market structure and other are the imperfect that comes under the imperfect competition of the market structure. Before going into the detail of each type of market structure, let us understand the few basic related to the market structure like how the equilibrium takes place, how the price is determined, and then we will get into the specific details of the each type of market structure, and we will check that how the equilibrium is maintained or how the price is decided.

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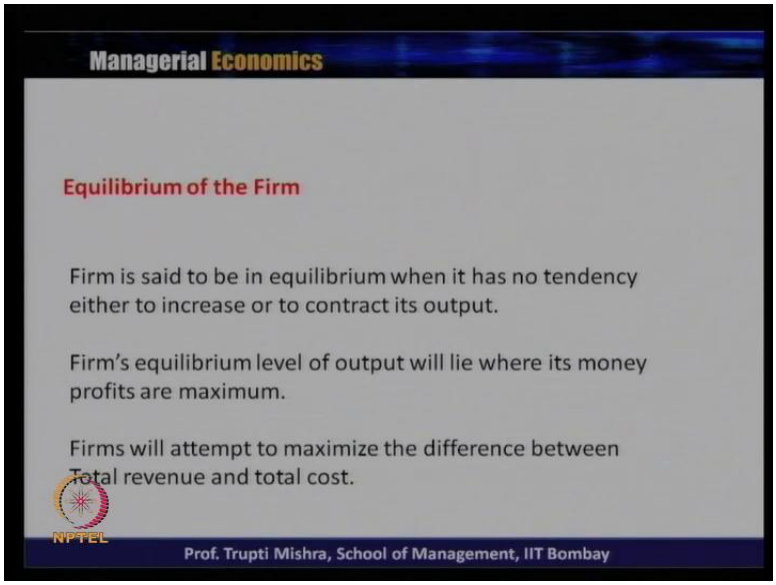

Firm is said to be in equilibrium, when it has no tendency either to increase or to contract its output. So it is a kind of state or balance, when it has no tendency either to increase or to contract the output and equilibrium level of output will lie where its money profits are maximum; so equilibrium level of output is one where profit is maximum. Firms will attempt to maximize the difference between the total revenue and total cost. Because the output level where the profit is maximum that has to be the equilibrium level and ideally if you look at where the profit is maximum, where the difference between the total cost and total revenue is maximum. So firm's optimization problem here again comes as the

point, where the difference between the total revenue and total profit has to be maximum. Total revenue and total cost has to be the maximum.

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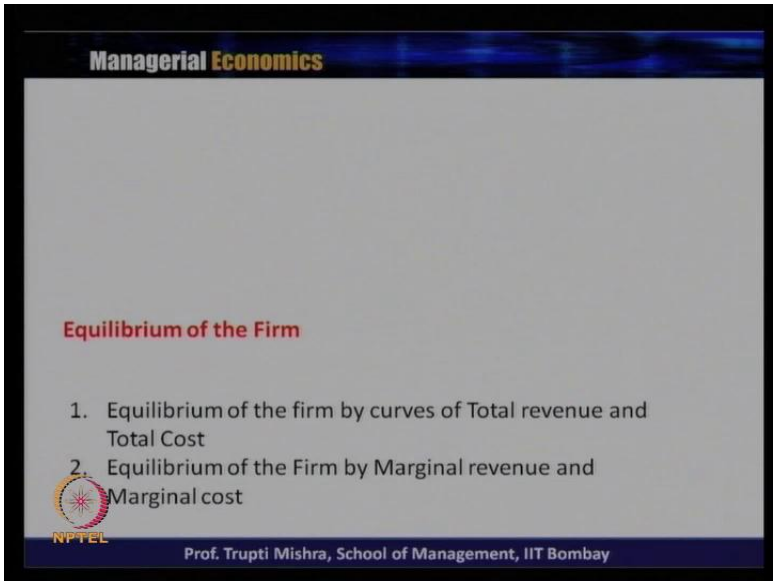

So, the equilibrium of the firm can be achieved either by total revenue, total cost or by the marginal revenue and marginal cost. So, individually we will see through the graphical explanation how the equilibrium is maintained or how the equilibrium is achieved through the total revenue and the total cost firm, and how the equilibrium is achieved through the marginal revenue and marginal cost firm.

Like in case of total revenue and total cost, where the difference is more or most that is the level of output where the profit is maximum. But in case of marginal cost and marginal revenue, the point at which the marginal cost is equal to the marginal revenue that is the higher level of output where the profit is maximum, because beyond this the cost will be on a higher side.

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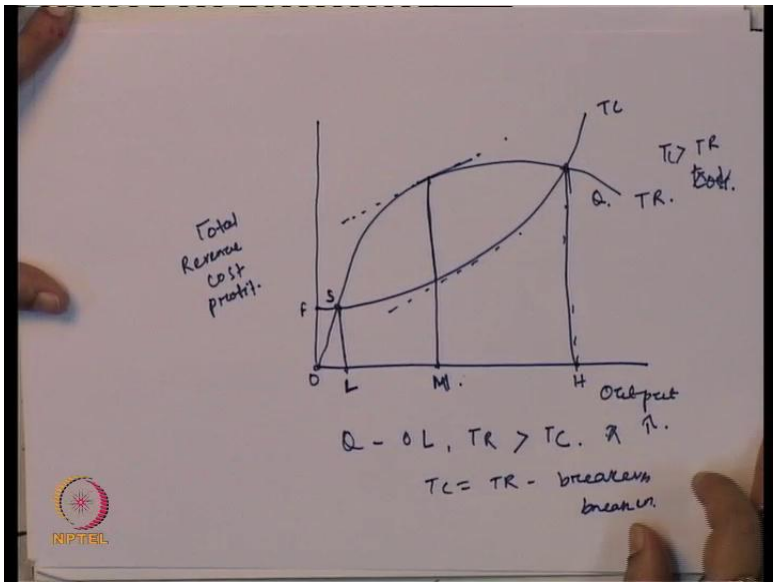

So, let us first check that how to achieve the equilibrium with the total cost and total revenue method. So, we will take output on the x-axis, total revenue cost and profit on the y-axis. So the total cost, we will take the total revenue. This is the total revenue and this is some amount of fixed cost is there. This is the total cost. So, we have one point over here, we have one point over here. So this is S, suppose this is L, this is O, and this is H. Now this is say suppose Q and in between we will see how to find out the maximum difference between the total cost and total revenue. We need to see just by drawing this we will know this is the level of output.

So when the firm increases its output beyond O L. If the output goes beyond O L, then total revenue is greater than the total cost. So, if total revenue is greater than total cost; similarly the profit also goes increasing. Because if you consider this, this is the total revenue, this is the total cost. Total revenue increases, the difference between the total cost and total revenue go more and that is why the profit goes on increasing. Up to the output O M till from O L to O M, the profit is also increasing.

The distance between the total revenue and total cost is greatest, and so the profit is maximum at this point M. Now the firm will not produce any output larger than O M, since after this the gap between the total revenue and total cost has come down and if you look at, the gap between the total revenue and total cost is coming down, and the total profit is decreasing and it continue till the time OH; the level of output is O H and

beyond this if you look at total cost is more than the total revenue. So, beyond this anyway may be the firm can think of producing from M to H even if with a decreasing profit at the initial level. But not beyond this, where the total cost is more than total revenue and profit is decreasing or we can say it is a case of actually loss.

So, the point at which the total cost is greater than the total revenue; that is the point actually the firm should produce at that level of output because that gives us the maximum profit and that is the equilibrium level of output. So, we have two breakeven point here; one is corresponding to L level of output, that is S where the total cost is equal to total revenue that is one breakeven point. And the second point is where total cost is again equal to total revenue at the point H, where we get the another breakeven point. So we have two breakeven points in this. In between this two points the profit is increasing; reaching maximum then still decreasing and still it reaches zero, and the equilibrium level of output is one where the profit between two is maximum.

The profit is maximum or the gap between the two that is total cost, total revenue is maximum. Then we will see how to achieve the equilibrium level using the marginal cost and marginal revenue approach. So, you know what is marginal cost and marginal revenue. Marginal cost is the additional cost to the total cost by producing one more unit of output and marginal revenue is the addition to the total revenue by selling one more unit of output. This is nothing but the first total derivative of the total cost and total revenue.

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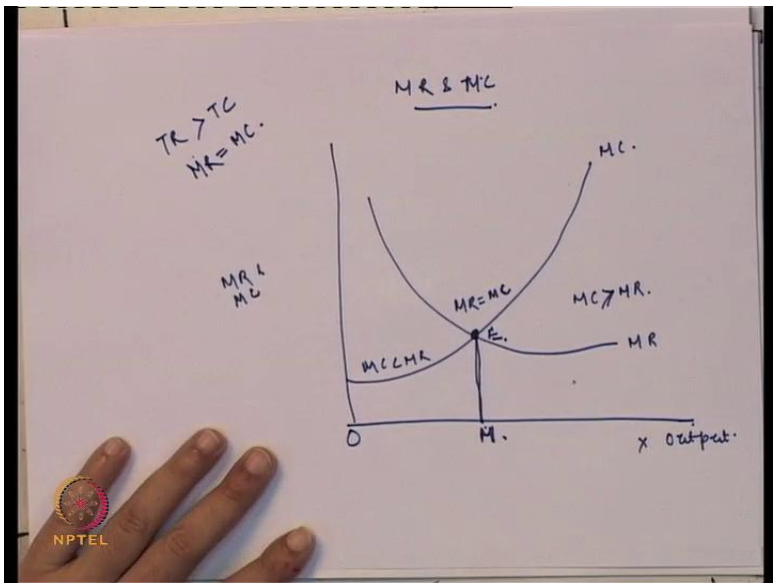

Now we will see how we will do this with the marginal revenue and marginal cost. This is the marginal cost, this is the marginal revenue, this is O, this is marginal cost is less than marginal revenue. Here marginal cost is greater than marginal revenue. So, at this point marginal revenue is equal to marginal cost; so corresponding to that we have the level of output that is M. So, x that is the output in the x-axis, and marginal revenue and marginal cost is at the y-axis. So, marginal revenue; if you look at marginal revenue curve is sloping downwards and marginal cost is sloping upward. They intersect each other at this point E that corresponding to the output M. Now up to this O M level of output, marginal revenue exceeds the marginal cost and beyond this O M level of output, the marginal cost is exceeding the marginal revenue.

That is the reason it is not a profitable level of output and that is why the equilibrium when we decide at the equilibrium level of output, it is always at a point where the marginal cost has to be equal to the marginal revenue and in this case, it is not more of cost and more of revenue. Rather it is just equalization of the marginal cost and the marginal revenue. So, the equilibrium level if you look at when we decide the equilibrium level of the firm, either at a point where the total revenue is greater than total cost or at a point where marginal revenue is equal to the marginal cost. So, equilibrium can be achieved or the equilibrium can be derived in the different market condition, either by following the total revenue and total cost approach or by following the marginal revenue and the marginal cost approach.

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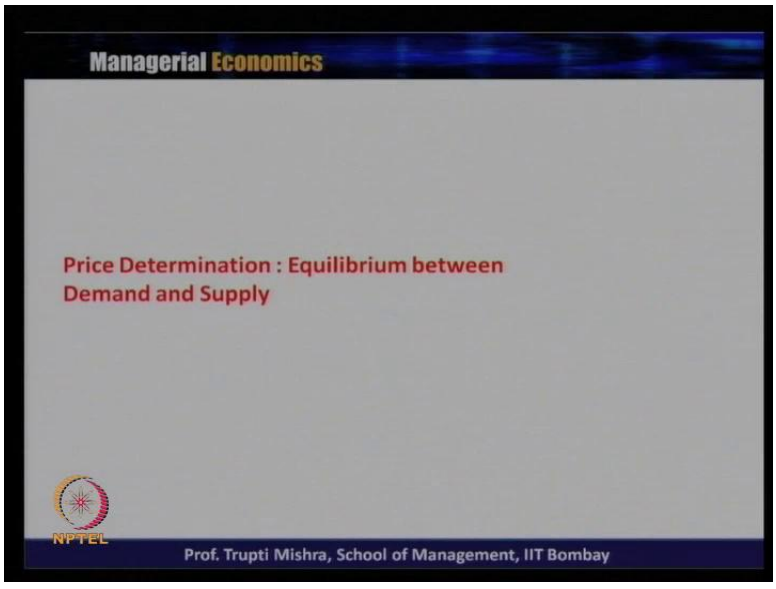

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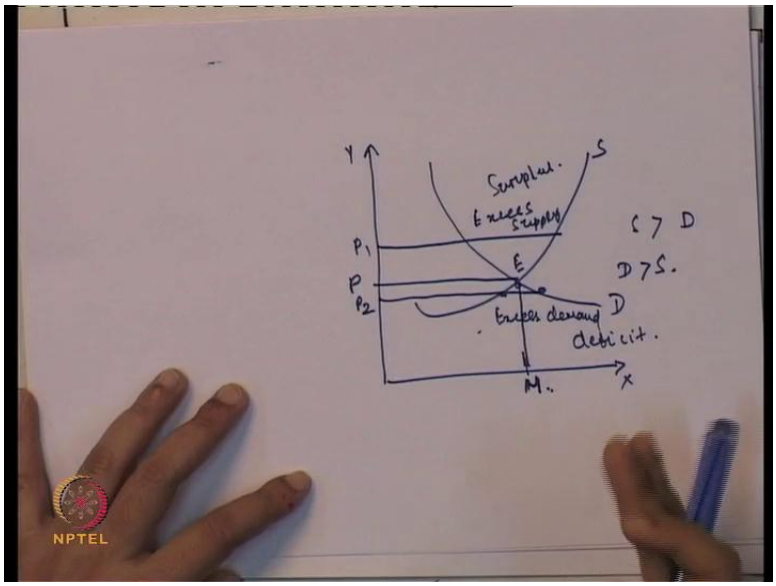

Then this way we have already discussed when we are talking about the demand and supply; just to refresh this because since we are discussing the market structure again, how the equilibrium price is decided or how the equilibrium takes place between the demand and supply, and correspondingly how big at the equilibrium price and equilibrium quantity. So, this is our demand curve, this is our supply curve. E is the point; that is equilibrium point. At this point, demand and supply intersect with each other. This is the equilibrium price; P is the equilibrium price and M is the equilibrium level of output. Any price above this P 1, the supply is more than demand and this leads to excess supply.

Because supply and price they are positively related, so price increases supply increases and that leads to excess of supply with respect to demand. So, this is the case of excess supply or also we call it surplus. So in this case, generally it is the supply reduce the price in order to increase the demand and finally, they reach the equilibrium again. And any price which is below P that is suppose P 2, the demand is more than supply and this is the case of excess demand or may be this is the case of deficit and here how to reach this. This is not an equilibrium; how to reach this equilibrium point again. The supplier has to increase the price, so that the demand reduces and again they reach to the equilibrium condition.

This is how we discuss in case of market when we are talking about demand and supply. So, just to refresh the same thing works when the firms or when the industry decides the price of the product. It decided on the basis of supply and demand and that leads to the equilibrium price. So, P is the equilibrium price. Any imbalance between this price and equilibrium quantity, generally the demand forces and supply forces they correct among themselves and reach the equilibrium again.

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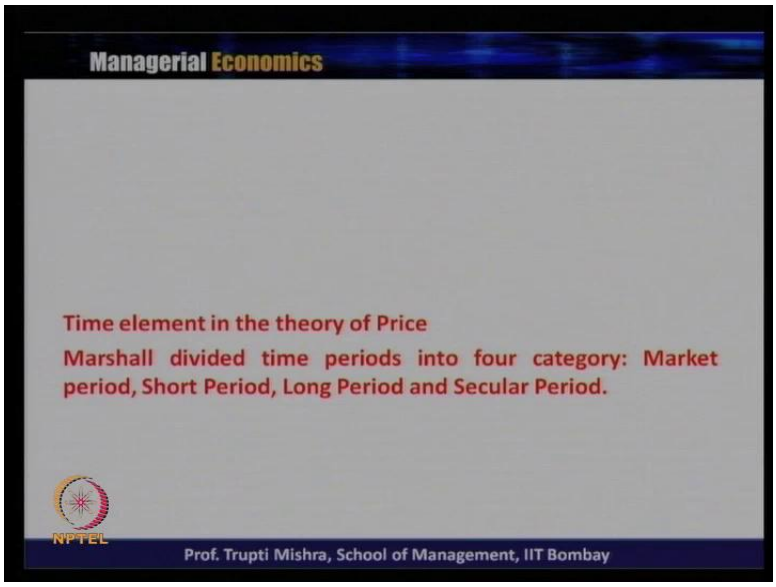

So, there is always a time element in the determination for the price in the market price for the goods. So, Marshall define they are divided the time period into four categories; that is market period, short period, long period and the secular period. Now what is the essential difference between all these four types of time period? That is true that time plays always play an important role when it comes to determination of price and quantity. But when the time is defined on the vision of short, long, market and secular period, we will see particular in case of market period, short period and long period, how generally the price is decided.

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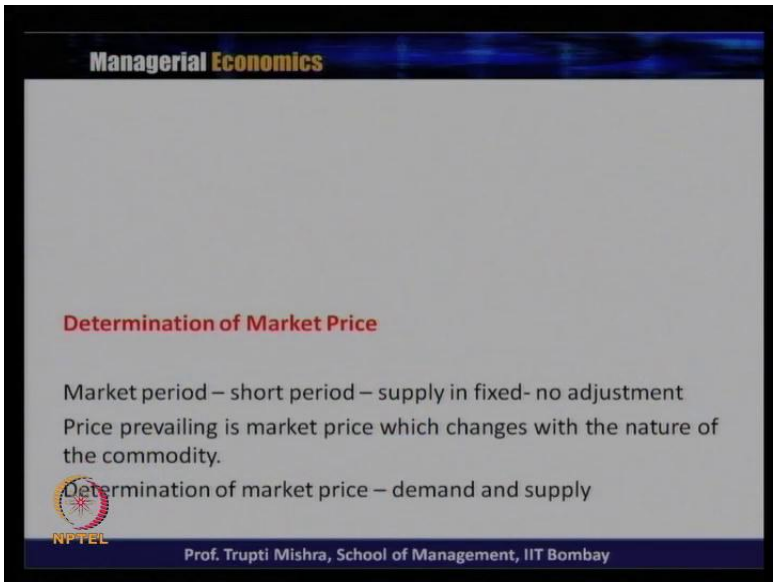

So, market period is one that is the essential is a short period and how the market price is decided. The market period is decided on the basis of demand and supply and what is short period over here. Short period because it is the supply is fixed, no adjustment price prevailing in the market price which changes the nature of the commodity. So, supply is fixed that itself talks about a short period. There is no adjustment from the supply side and the price prevailing in the market price is with changes the nature of the commodity and the determination of market price is through the demand and supply.

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So since we are talking about the short period, again the discussion goes for the perishable goods and the durable goods. And in case of perishable goods, again the price is decided on the basis of the fact that the perishable goods cannot be kept in the stock but in case of durable goods it can be kept in the stock, again the price is decided keeping that in the mind.

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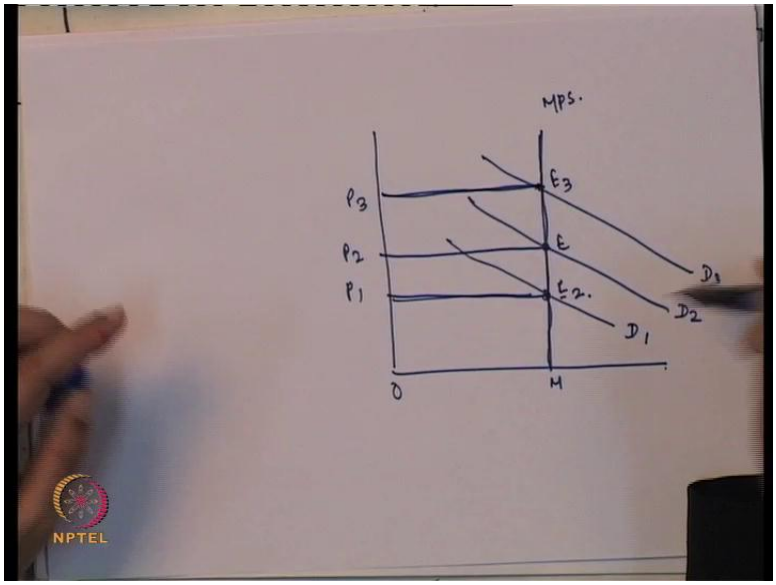

So, let us look at how the price is decided in case of the short period. Typically this is the price determination for the nonperishable product or maybe we can say the durable product. So, this M is the level of output, this is O, this is P 1, and this is P 2, and this is P 3. So if you look at, this market supply curve is a durable good is not a vertical straight line throughout its length and there is two level of price; one is sufficiently high that the seller will be prepared to supply the whole stock of the good. That generally happens in case of P 3 and secondly there is a minimum price at which the seller will not be prepared to sell anything.

Instead of that they will hold back and keep it in the stock. Now what is the minimum price here? The minimum price here is the range of price and if you look at here, this typical different time period like or different point that is E, E 3, and E 2. The maximum price can be O P 3 and the minimum price can be O P 1 and if you look at here, it is written the supplier that at which price they are going to charge that; at which price they are going to sell it. And here typically we are talking about nonperishable goods not

about the perishable goods. So, short period always the supply is decided on the basis of the demand. Supply is remaining fixed it cannot be changed with the increase in demand.

Only thing what they can do, they can change the price with the different level of the demand from the or with the customer response or with the different level of the demand. So market period is one, it is a short period. The supply is fixed. The supply cannot be changed with the change in the demand and the price is not fixed on the basis of the demand and the supply strictly, because the supply is remaining fixed. Only the supplier has some flexibility when it comes to and that what price they are going to charge.

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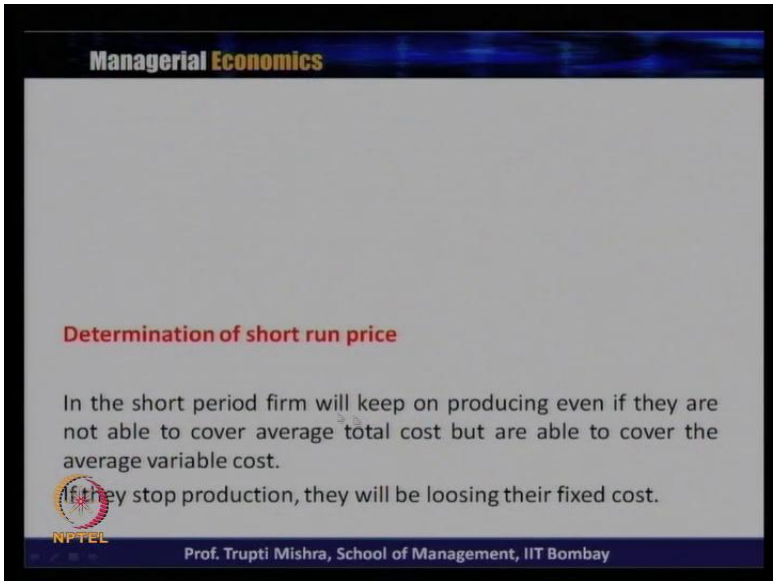

Then we will talk about a determination of market price in the short period; short run price and then we will talk about the long run price. So, in the short period firm will keep on producing even if they are not able to cover the average total cost but they are able to cover the average variable cost. If they stop production, they will be losing their fixed cost. So if you look at in the short run, generally the firm keeps on producing even if they are not able to cover the average cost; average total cost but are able to cover the average variable cost.

But if they stop production, they will be losing their fixed cost and that is the reason they always evaluate which one is more profitable whether to stop the production or whether to continue. Till the time they are continuing to get their average variable cost, they prefer to produce and once they are not getting the average variable cost generally they

stop the production. Because any way they are not covering the average variable cost also, so there is no point of producing anymore

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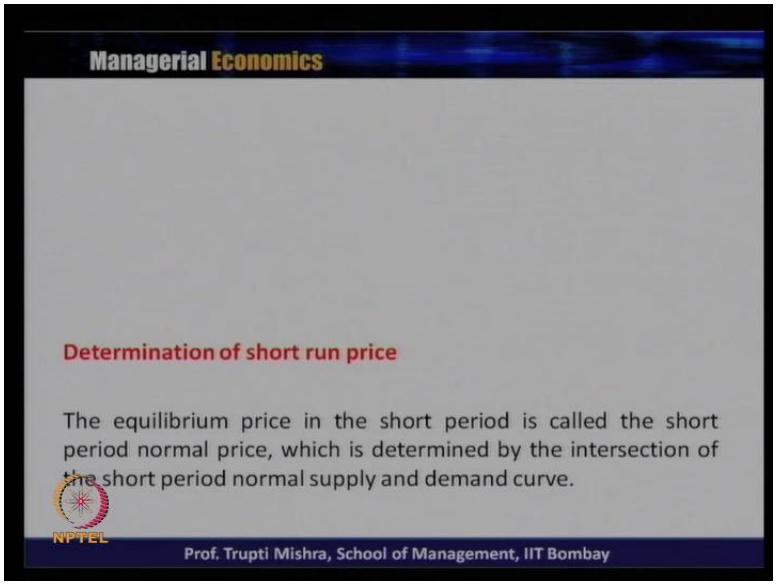

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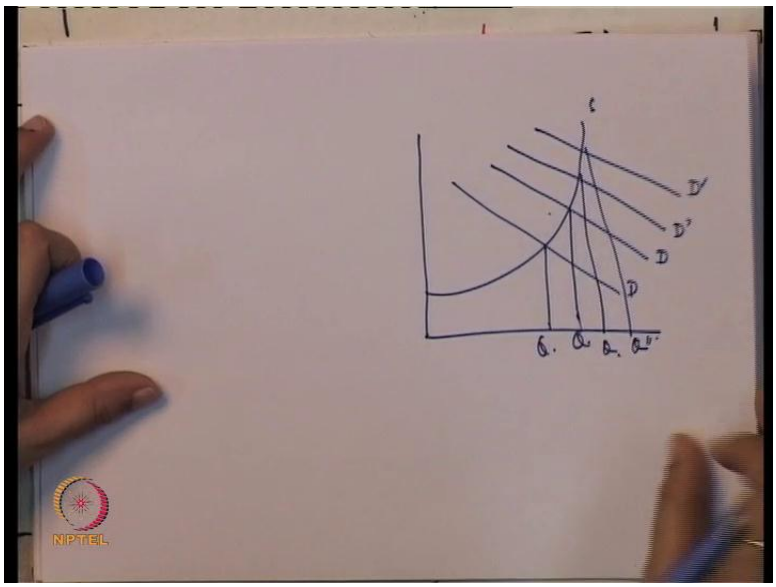

So, the equilibrium price in the short period is called the short period normal price, which is determined by the intersection of short period normal supply and the demand curve. So if you look at, this is the supply curve, and this is the demand curve and different demand curve. There are different levels of quantity and again the concept is same short run, we cannot do much change with the output. Rather we should just

whatever the supply only we can change the price and we can send it and sell it to the buyer.

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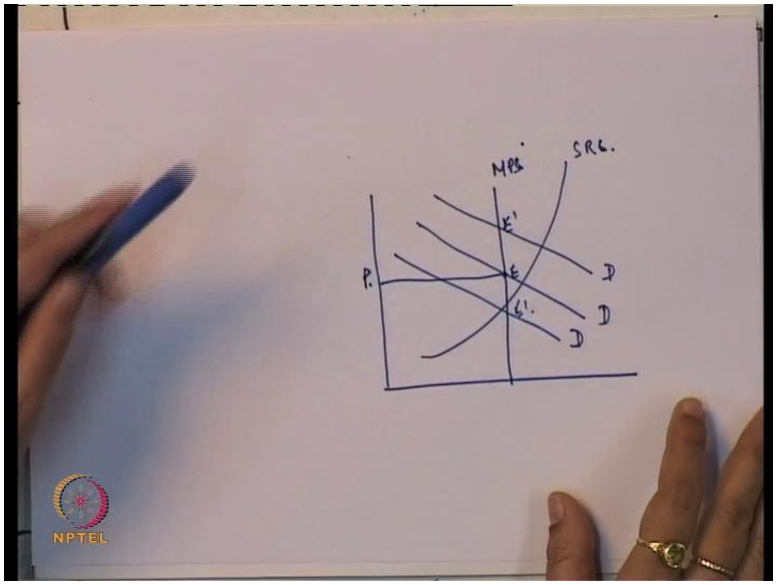

So now when it comes to determination of price, again we will take the MPS that is market price supply. Then we will take a short run supply curve and corresponding to that we will take the demand curve; the different demand curve and on that basis we will decide which one has to be the price, and which one has to be the at the region of price, and which one has to be price on what they have to sell. So here if you look at, it is the MPS is the market period supply curve and SRS is the short run supply curve of the industry. And here O P if you look at, O P is the point but because this is the short run price; both the market price as well as the short run price. Since the given demand curve D D intersect both the market period supply curve and the MPS and that is why we can consider this as the equilibrium price.

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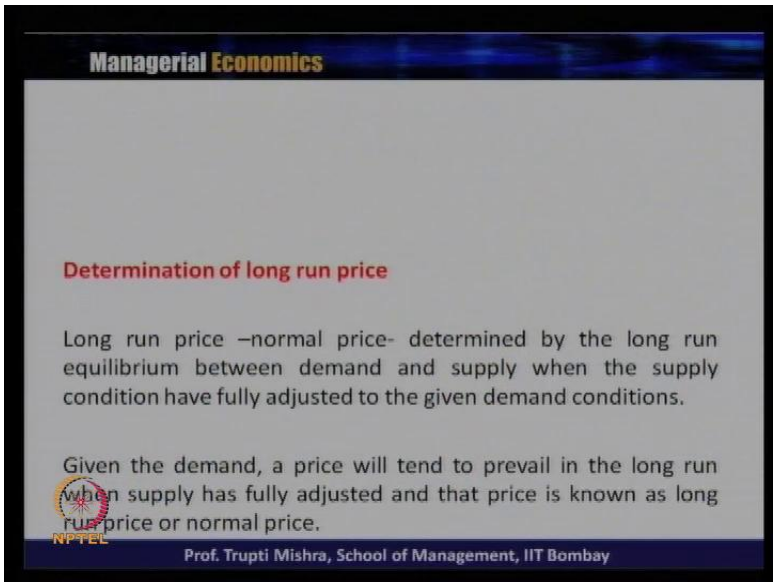

Then we will talk about the equilibrium price, how the equilibrium price is decided in case of the long run. So, long run it is a case of a normal price again, determined by the long run equilibrium between demand and supply when the supply condition have fully adjusted to the given demand condition. And given the demand, a price will tell to prevail in the long run when supply is fully adjusted and price is known as the long run price or the normal price, and how the price is decided in the long run.

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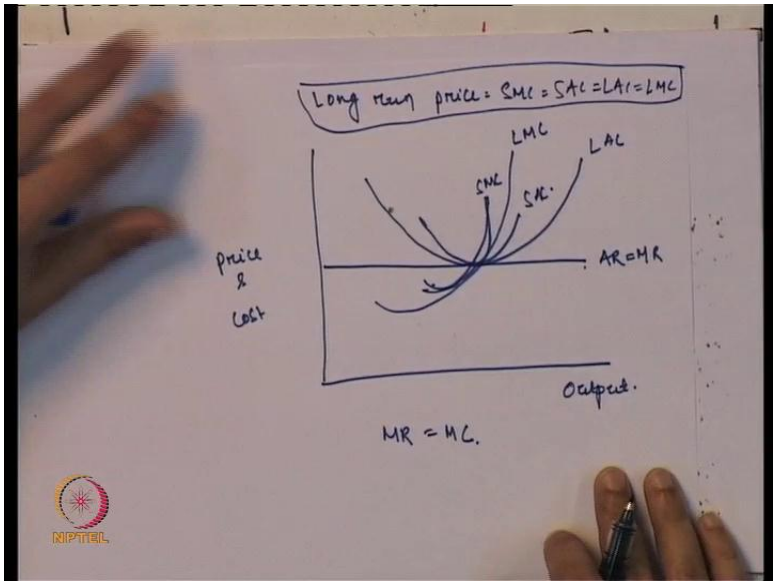

Here we again take output in the x-axis, price and cost in the y-axis. This is the long run average cost, this is the long run marginal cost, and this P L is where average revenue is equal to marginal revenue. So, the price is decided on the basis of the marginal revenue and marginal cost, and long run price is one where the strict condition to follow for long run price is here also this is the evidence of short run; we can bring our short run over here and also short run marginal cost curve, SSC is short run average cost curve, SMC is the short run marginal cost curve, then LMC is the long run marginal cost curve, and LAC is the long run average cost curve.

So, long run price condition is the point where SMC is equal to SAC which is equal to LAC which is equal to LMC. So, long run price is one; this is the point where the long run price is then decided and long run price, the SMC is equal to short run average cost curve, which is equal to long run average cost curve, which is equal to long run managerial cost curve, and that is how the normal price is decided in case of the long run.

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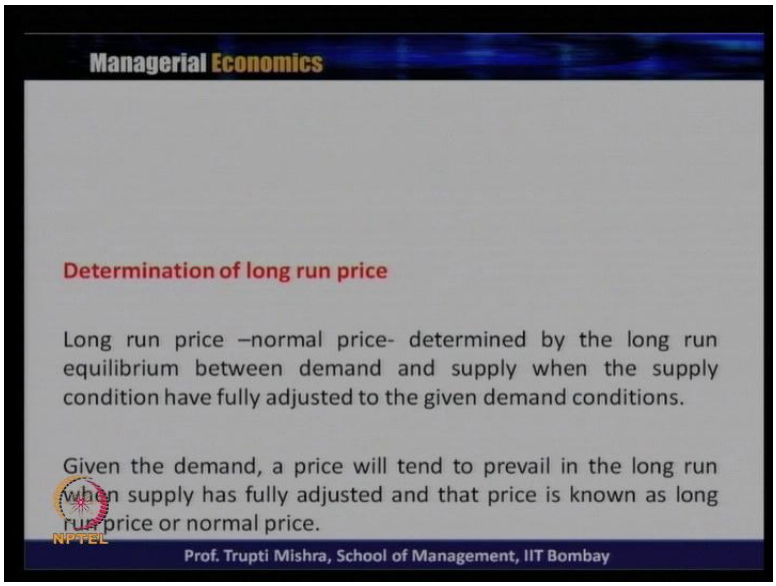

So, if you if you quickly summarize whatever we discussed today, we just carried forward our discussion on economies of scale, we talked about managerial economies of scale. Thus there is an evidence of managerial diseconomies. Then we talked about the transport and storage economies of scale. Then we talked about pecuniary economies of scale and external economies of scale. Then we try to look whether there is a limit to

economies of scale and that comes in the firm of managerial diseconomies of scale and that is mainly because of inefficiency of the management.

Then we started our discussion on market, what is generally a market, what is the different types of market, and how the classification of the market on the basis of the nature of competition. And then we discussed the price and the output determination in a market through marginal revenue, marginal cost, total revenue, total cost method and then we saw the determination of price in the different time period like short period, market period, and the long period. So, we will carry our discussion on this market structure in the next session with perfect competitive market structure.

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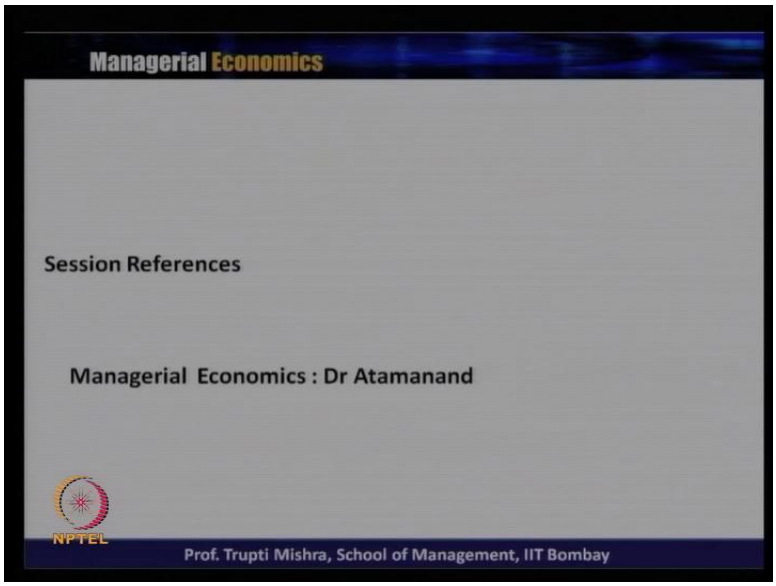

And the reference for this typical lecture, typical session what we followed today is the managerial economies book by Dr Atamanand.