Managerial Economics
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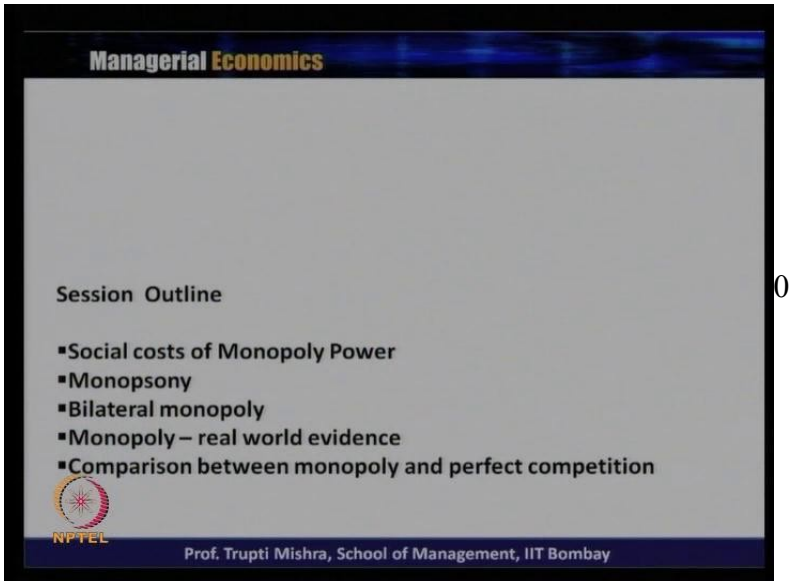
Lecture -57
Monopoly (Contd…)

In today's session, we will continue our discussion on monopoly. So, few more aspect of monopoly we have to cover in this particular segment. So, today our focus will be on that. So, if you quickly remember whatever we discussed last class is it is all about the monopolist supply curve, why there is a absence in the absence of supply curve in the monopoly. Then we discussed about the multi plant monopolization, and in this case generally the monopolist produces the entire outputs to be supplied by firm, in different plants, and all this plants are having a different cost of cost function; some plants they are operating at a lower cost, and some plants they are operating at a higher cost.

And also we discussed that, generally how the price and output decisions are made, using this, in case of typically, in case of a multi plant monopolist, and then we discussed about this, how to measure the monopoly power through different methods; like we have learner index, we have cross elasticity of demand, or we have the market concentration ratio or the so called HSI. And then we discussed about this Rothschild's index, and we will discuss some more about the Rothschild's index, and then we will move to our next topic. And after discussing this Rothschild's index, we will focus today on the social cost of the monopoly power. We will take a special case, where there is only buyer, which is just the opposite of a monopoly; that is monopsony.

(Refer Slide Time: 

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Then we will talk about a bilateral monopoly, where there is one seller and one buyer. Then we will talk about some monopoly, real world evidence, and then comparison between the monopoly and perfect competition.

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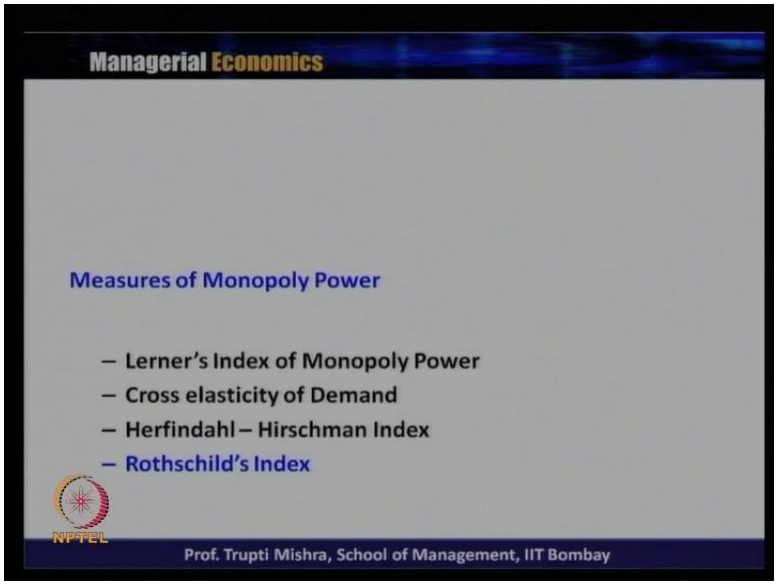
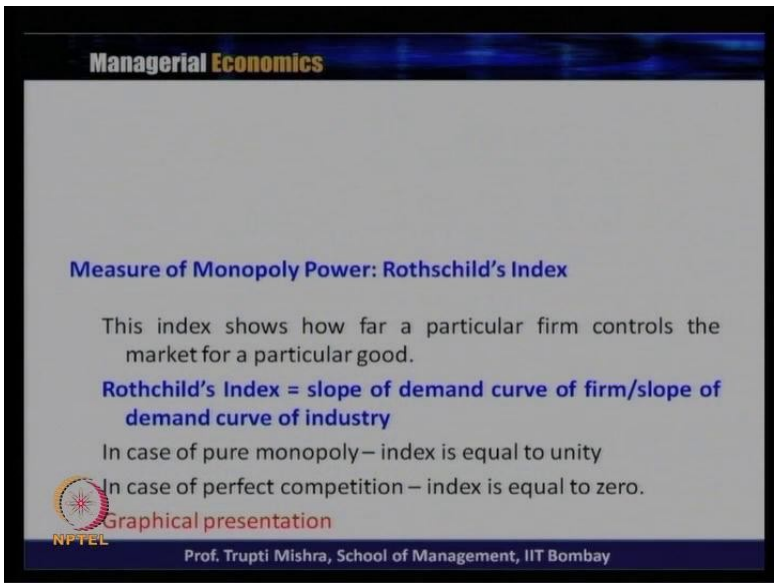


So, if you remember in the last class, we discussed the measurement of the monopoly of power. There are the different methods that tells us, and the value of that through the outcome this method, they tells us that what kind of market form it is; whether it is perfect competition, whether its monopoly or whether between the perfect competition monopoly, the monopolistic competition. So, we discussed about the learner index yesterday, we discussed about the cross elasticity of demand, we discussed about the Herfindahl-Hirschman index, and also we just introduced the Rothschild's index, and today we will have discuss some more about the Rothschild's index. Generally, how this is if you look at, how this decides, what is the market power of the typical of firm; and on that basis that is decided,

whether what kind of market form it is, whether it is a competitive, whether it is monopoly or whether it is between the competitive and monopoly market structure. So, here the entire focus is based on two notion; one, when individual firm change the price, others they are not changing it, so what should be the demand curve? (Refer Slide Time: 03:15)



And in the second case, when individual firms they are changing the demand curve, others also they are following it; and on that basis we will find out the value of the index.
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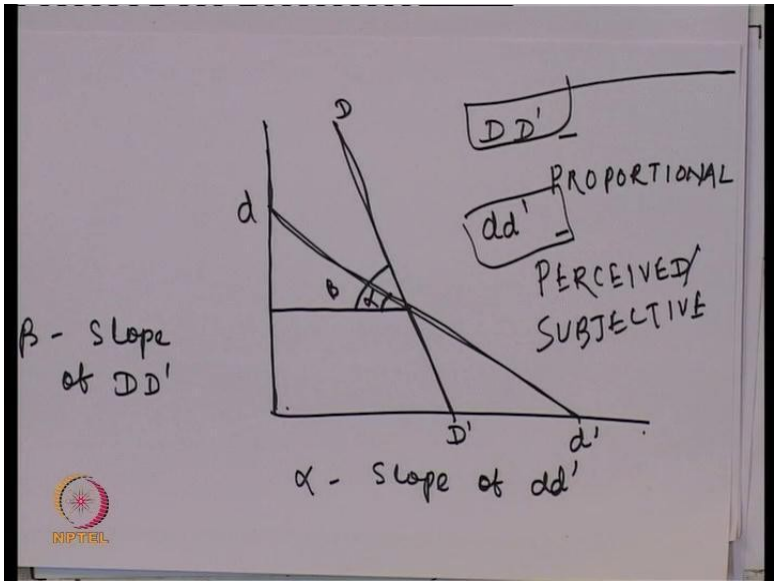

So, we will take two demand curves; one is *dd'*, and second one is capital *DD'*. Now, what is the difference between this capital *DD'* and the small *dd'*? This capital *DD'* generally known

as the proportional demand curve, and why this is known as proportional demand curve, because when one firm change the price other firm also change the price, and that is a reason you will find this demand curve is inelastic, because one firm change the price other firm change the price. So, the response to the change in the quantity demanded is generally less to the change in the price. And this demand curve talks about the, case where one firm change the price, and others they are not changing the price. So, generally this demand curve is known as the perceived demand curve or subjective demand curve. So, this is proportional demand curve. This is subjective demand curve. Now the essential difference between this two is; one, where one change one firm change the price other generally follows that, and second when one firm changing others they are not following.

So, when one firm is changing other firm is also changing, we get a proportional demand curve, when one firm changing others they are not changing, we call it is a perceived or subjective demand curve, and why this is more elastic, because, since others they are not following, any small change in the price of this firm, generally effects the quantity demanded in a larger extent. Now, we will get the slope, this is the beta and this is the alpha. Now, what is alpha, alpha is the slope of perceived demand curve, and what is beta. Beta is the slope of proportional demand curve. So, alpha is the slope of the perceived demand curve, and beta is the slope of the proportional demand curve. So, now we know the basis of this Rothschild's index; one we have two kind of demand curve; one demand curve is on the basis of the, one demand curve is on the basis of the, when one firm change the price other reacts to it, they also change the price.

And second is on the basis of the proportional demand curve, which is on the basis of that, when one firm change other change it and perceive it one, when one firm change the others they are not changing to it. So, in this case, if you look at two kind of demand curve depends upon the behavior of the rivals in the firm. On that basis we get we got two slope value; one is with respect to the perceived demand curve, and second one with respect to the proportional demand curve, with the help of that slope value, now we will try to construct the index, and through the value of index we need to find out, what is the market power for that typical firm. So, taking that, now we will come to the index, and index talks about a situation, where the value or the index value of index or the outcome index shows, how for a particular firm controls the market for a particular period. So, Rothschild index is the slope of demand curve for the, of firm; that is perceived demand curve, open the slope of the demand curve of the industry; that is the proportional demand curve.

And the value of index, in case of pure monopoly it is equal to 1, in case of perfect monopoly it is equal to 0. So, in case of pure monopoly the Rothschild index is equal to unity, and in case of perfect competition, this index is equal to 0. In between zero to unity, there are number of other firms generally you will find, they are into the value that ranges from 0 to 1. So, zero talks about one extreme in case of perfect competition, one talks about the other extreme in case of the pure monopoly. In between, if the value of the index is in between 0 to 1, that donates some other kind of the market structure, which is not strictly pure monopoly or which is not strictly pure perfect competition. So, generally this method, whether its Rothschild index, whether its learner index, whether it is HSI or whether it is cross elasticity of demand. Generally the main motive to study this is to, identify through a value, identify through a index, what is the market power of that specific firm.

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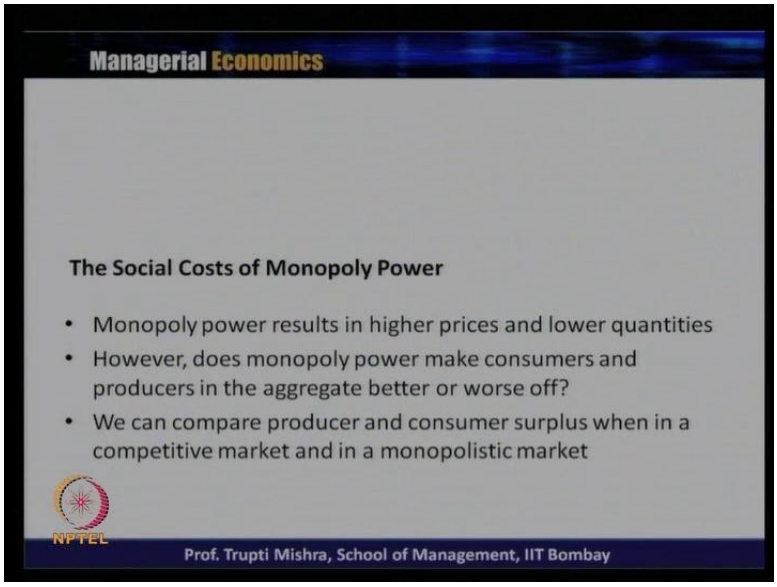

Then, we will move to the next topic; the social cost of monopoly power. We know that all the firms there in the market, monopoly firm when there in the different industry or the different sector; they are getting benefit for themselves. The question comes from the, what is the cost or what is the benefit that comes to the society, because obviously if monopolist, they are not getting profit they will not be there in the market in the long run, but what is the consequence on the society, what is the consequence on the consumer group, what is the benefit that comes to the society if at all they are getting it.

So, monopoly power results in higher prices and lower quantity. It is inelastic, because there is no close substitute and they are the price maker. However, whether monopoly power make the consumer better off or worse off, for both the consumer producer, that we can generally

compare to the producer and consumer surplus, when the competitive market or in a monopolistic market. What is the consumer surplus and producer surplus in the monopolistic market, and what is the consumer surplus and produce surplus in the competitive market; that gives us the difference between the, whether the consumer they are better off or worse off, whether the producer they are better off or worse off, in case of a monopoly market structure.

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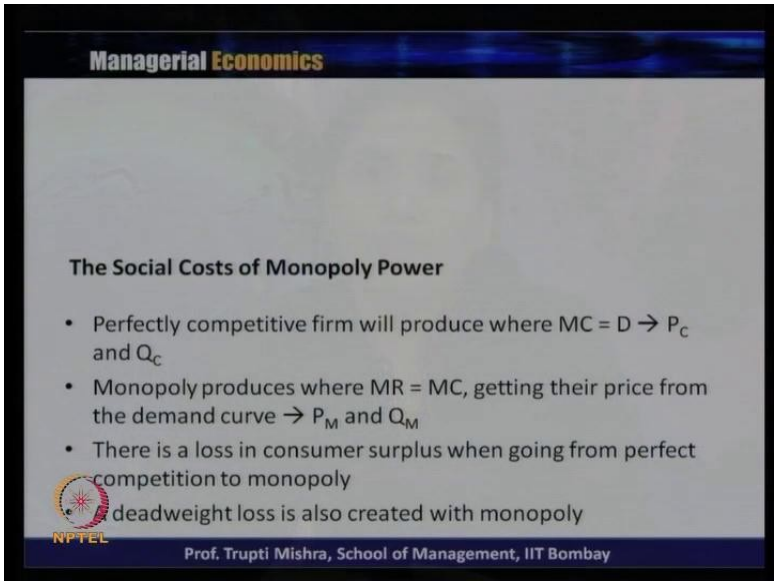
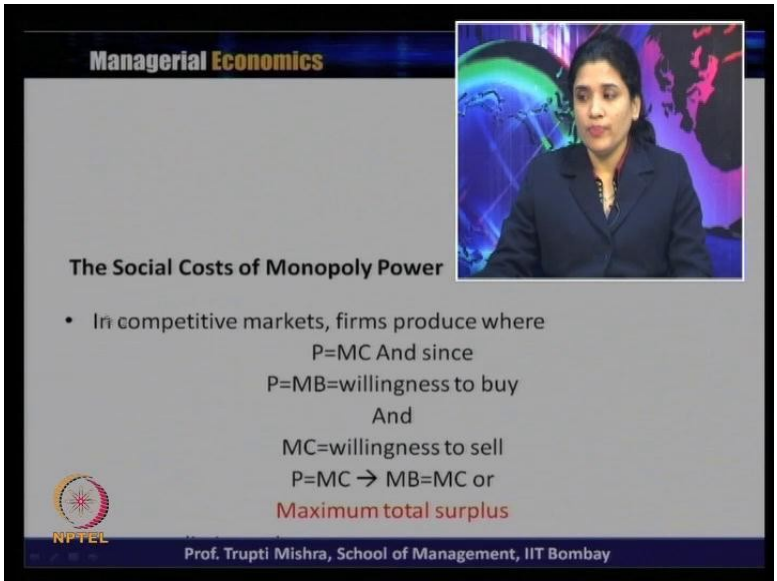


So, if you look at in case of perfectly competitive firm, the firm they produce at a point where marginal cost is equal to D or marginal cost is equal to the price, and how we get the price; that is from the demand and supply forces of the market. Whereas, monopoly produce where marginal revenue is equal to marginal cost, and getting their price from the demand curve; that is price and the quantity. The loss in the consumer when going to the perfect competition to the monopoly, because in case of monopoly the P is always greater than marginal cost, and this leads to a dead weight loss, which generally created through the monopoly.

(Refer Slide Time: 

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So, in competitive market firm produce where P is equal to MC, and since P is equal to MB; that is willingness to buy, and MC is the willingness to sell, P is equal to MC, which is also equal to MB is equal to MC, and in this case the consumer get the maximum total surplus.

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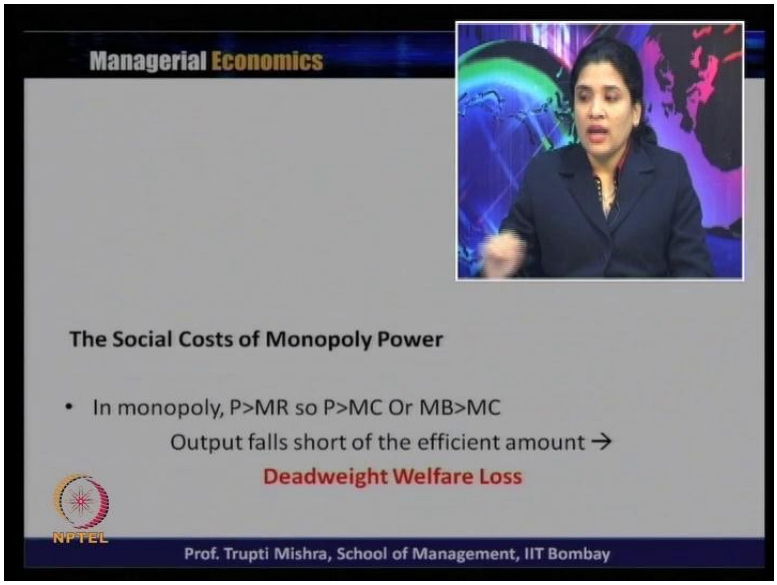

And what happens in case of monopoly, in case of monopoly P is greater than marginal revenue or P is greater than marginal cost, or we can say; since we are saying this is also the marginal benefit, the marginal benefit is greater than marginal cost. So, output for short of efficient amount and that leads to the deadweight welfare loss.

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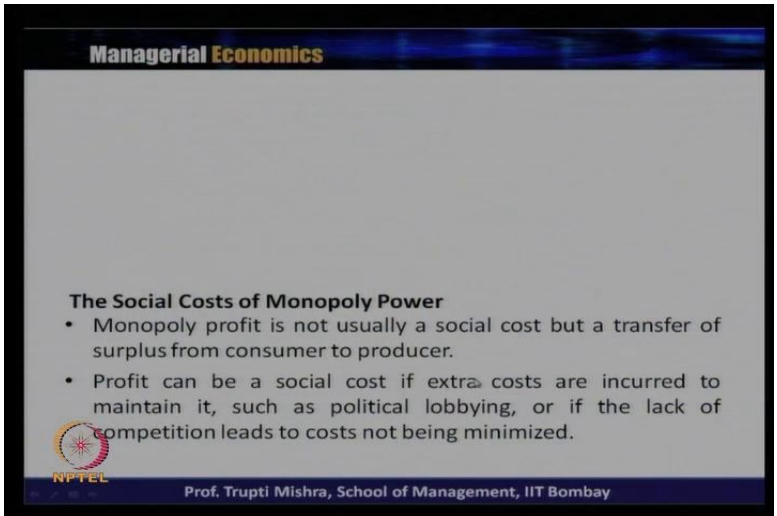

So, we need to know now, whether if either charging a price, which is more than, which is more than the charging price, which is more than the marginal cost, whether the consumer at all getting a consumer surplus or the. Because of the increase in the price the quantity demanded decreases, and neither that goes to the consumer pocket or not that goes to the producer pocket, and in general that goes to a deadweight loss, whether rather it is a rather it is a part of the profit of the consumer or part of the profit of the producer. So, now we will understand this graphically what is the deadweight loss, and where generally the efficiency of the monopoly comes, because if it is getting deadweight loss; obviously, the monopoly is not efficient, at least from the societal point of view. And if the inefficiency comes; inefficiency come basically from the deadweight loss. So, we will say, what should be the ideal condition for efficiency in case of a monopoly market, and also we will see inefficiency that is through the deadweight loss.

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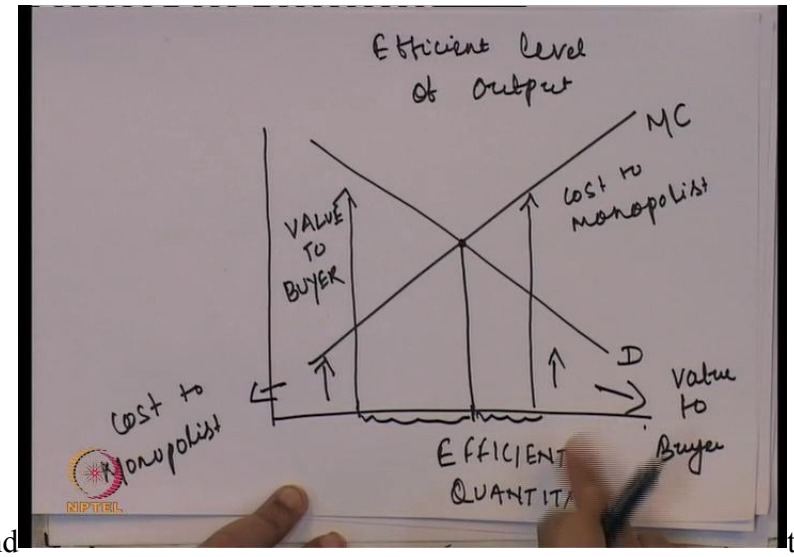

So, to understand this efficient level of output, or what is the efficiency of the monopoly? We will take the help of the marginal cost and demand. We have demand curve, and what is this demand curve? This is

generally the benefit or the value to the buyer; this is the marginal cost, this is the ideally this should be the efficient quantity what the monopolist should produce, or the monopolist should sell to the buyers. Now, if you look at this MC is nothing but the, from here to here, if you look at, this is nothing but the cost to monopolist, and here if you look at, this is nothing but the value to buyer. Corresponding to this, what is this, this is cost.

Again this we can say as the, cost to monopolist, and here we can say again, this is value to buyer. And how we are identifying this value to buyer, and cost to monopolist, that is, on the basis of the marginal cost, and on the basis of the demand curve. Now, in this segment, we have two segments now; this should be the efficient quantity, and we have two segments with respect to this; one, which is before the efficient quantity, and one, which is beyond the efficient quantity.

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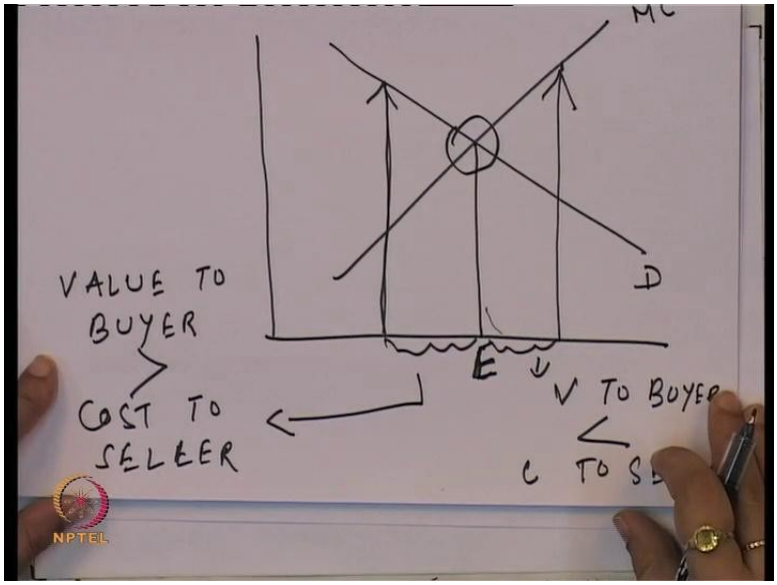

Now, what happens in case of both this situation? So, if you take this graph again, this is our demand curve, this is the value to the buyer, this is the marginal cost, this is nothing but the cost to the monopolist. So, we can say that this is the efficient quantity, and here this segment if you look at now what is the significance of this segment. The value to buyer is greater than cost to seller, cost to seller, because the demand curve is lying above the marginal cost curve. And what happens in this segment? In this segment, the value to buyer is less than cost to seller. So, efficient quantity is this, before this efficient quantity the value to buyer is greater than cost to seller, so obviously, monopolist is not going to operate here. Here the value to buyer is less than cost to seller. So, if you look at, this is the profitable point for the

monopolist, but ideally, what is the efficient quantity? The efficient quantity or the efficient level of the output, where the marginal cost, is intersecting the demand curve.

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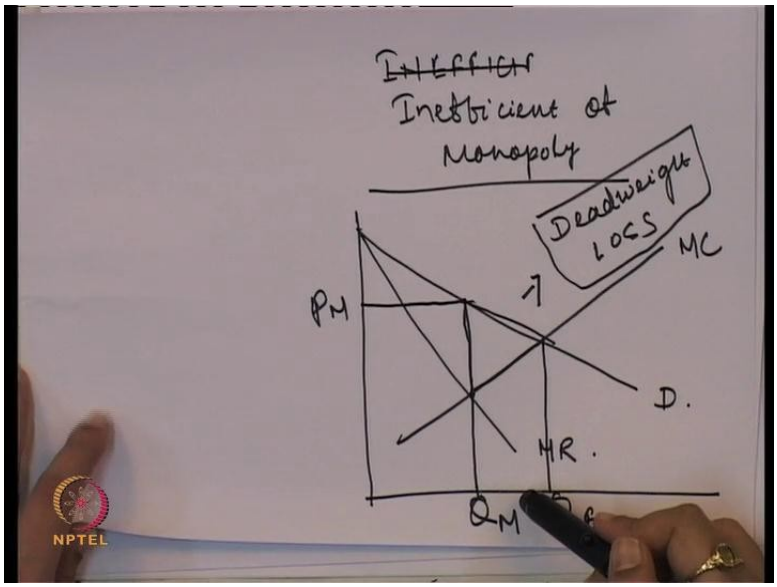

But what happens in practice, does the monopolist generally follow a efficient level of output or not. That we will see, because there is always a debate, because efficiency, there is a inefficiency in the level of output, and that is how the firm get the deadweight loss. So, next we will see what is the inefficient of monopoly, or how generally they get the deadweight loss. And how we will find out this inefficiency of the monopoly or inefficient of the monopoly output. Again we will take the help of the demand curve and the MC curve. So, this is our demand curve, this is our marginal revenue curve. This is the marginal cost curve. Now, what is the monopoly quantity, monopoly quantity is this, because this is. We follow a marginal list principle to, generally find out the monopoly output; that is MC is equal to MR, and corresponding to that we get the output level, which is the monopoly output level, and this is the monopoly price.

Now, what is the efficient quantity? Efficient quantity is ideally corresponding to the demand curve and the marginal cost curve. So, this is efficient quantity, this is monopoly quantity. So, the difference between this monopoly quantity and the efficient quantity is generally known as the deadweight loss, and this is the cost to the society, in the form of the deadweight loss. Monopolist are not operating at the efficient level of output, and that leads to the fact that, there is a cost to the society, and what is the cost to the society. The cost to the society is in the form of the deadweight loss. And why the deadweight loss comes into

picture, or why there is an evidence of deadweight loss in case of monopoly, because the difference between the efficient quantity and the monopoly quantity.

And monopoly quantity if you look at, it is always the lower quantity and higher price, and efficiency quantity is one, when there is a higher quantity at a lower price. So, some amount of inefficiency is there or some amount of inefficient with respect to output, with respect to price is there, and that generally brings a social cost, and that generally impose a cost on the society. So, if you look at the profit, it is not strictly the social cost, because firms they are operating the market. They use to get some amount of profit at least in order to survive in the market, in order to produce the product and sell it in the market or cater the need of the consumer. Then from where generally the social cost comes, whether it is strictly from the profit of the monopolist or from the any other sources. So, monopolist profit is not usually a social cost, but transfer of surplus from consumer to producer.

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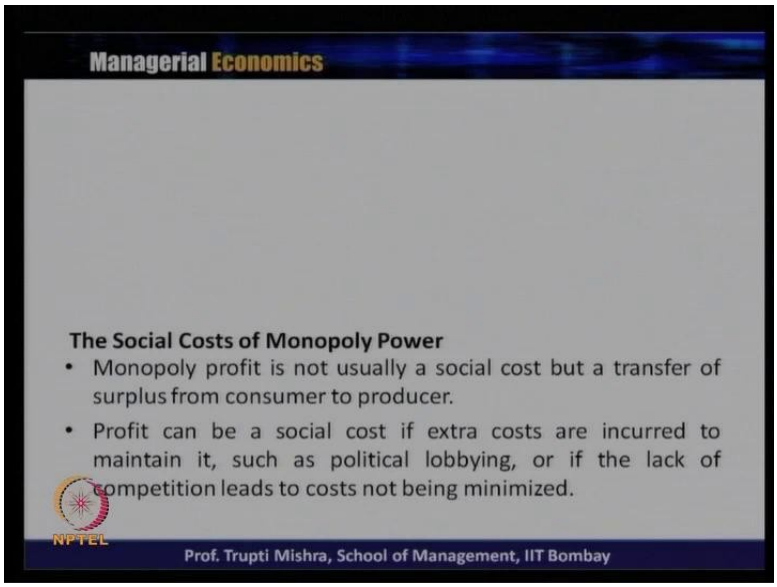

So, if you remember in case of consumer surplus, whenever there is a increase in the price, whatever the loss in the consumers part goes to the producer. So, in this case, it is not directly coming to the social cost, is not directly coming from the monopoly profit, or the profit is not usually a social cost, but a transfer of surplus from consumer to producer, generally a social cost, because it takes out the surplus from the consumer and goes to the producer account. Profit can be a social cost, if extra cost are incurred to maintain it, such as; political lobbying or if the lack of competition lead to cost on not being minimize. So, whether it is a political lobbying or if it is a lack of competition, for that if there is some extra cost are incur, then

only profit is generally consider as the social cost, because to get profit there is some amount of extra cost involve over here.

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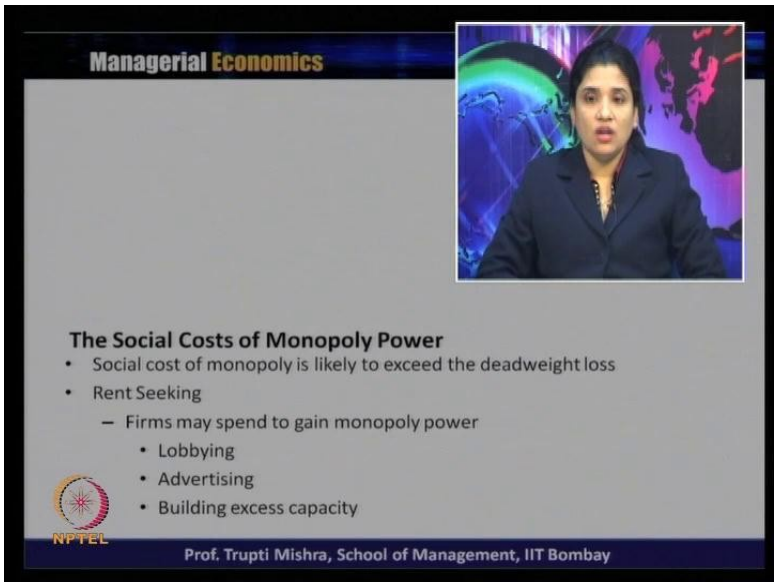

So, social cost of monopoly is; so if you look at, it is always likely to exceed the deadweight loss, and why this generally exceed the deadweight loss; may be rent seeking, because firm may spend to gain monopoly power as we discussed in the previous slide, because the there is some additional cost involve, in order to get the profit, and that is the reason the social cost may be exceeding the deadweight loss. So, firm may spend to gain monopoly power through lobbying, through advertising, and through building the excess capacity.

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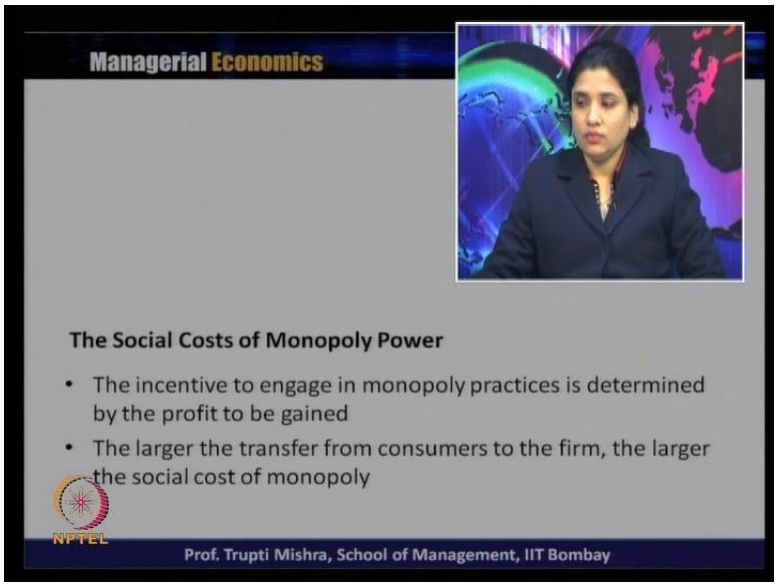

So, the incentive to engage in monopoly practices is determined by the profit to be gained. So, more profit, may be the incentive is more, and to get engage in the monopoly practices, but the larger the transfer from consumer to the firm, the larger the social cost of monopoly. So, its two dimension; one, more is the profit, the firm gets into more kind of practice to become the monopolist, or the so called the monopolization, or the act of monopoly through which generally they try to get the market power. And second, how they get more profit, when the transfer get produced from the transfer gets from the consumer surplus to producer surplus, and this is nothing, but that whenever the consumer surplus get transfer into the producer surplus, there is a amount of cost on the society. So, the larger the transfer from the consumer to the firm, the larger the social cost of the monopoly.