Foundation Course in Managerial Economics
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Lecture - 27
Monopoly - Supply and Efficiency

Hello and welcome back to our discussion on monopoly. Till the last class we discussed how does a firm attain the monopoly status and we went on to see what is the equilibrium level of price and output that the monopolist decides and today we are going to look at monopoly supply. Does the monopolist have a supply curve like the perfectly competitive firm and what is the efficiency level when monopolist decides the level of price and output? Is it as efficient as the perfectly competitive equilibrium outcome? So these are the questions that we are going to ask in today's class.

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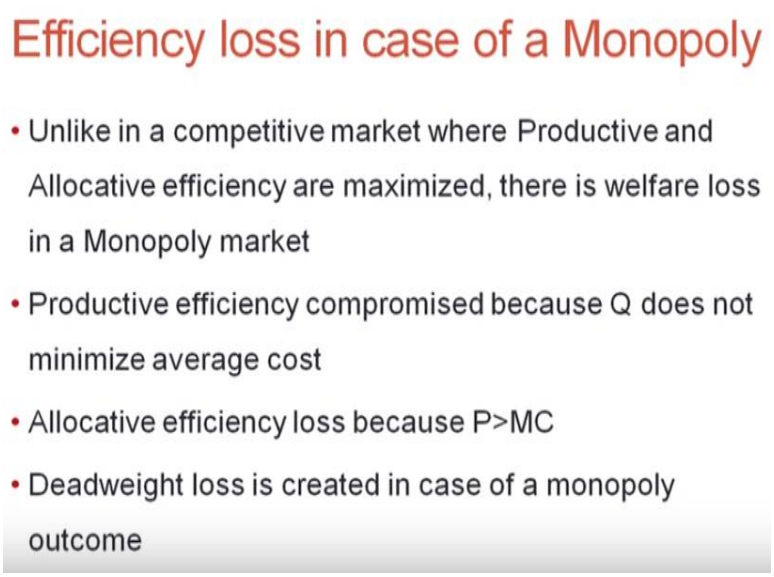

So supply curve of monopoly. Now unlike a perfectly competitive firm there is no supply curve for monopoly because output for a monopoly is not determined by price as in the case of perfectly competitive firm but jointly by marginal revenue, marginal cost, and the demand curve. This is what we saw when we looked at profit maximization for a monopoly firm and we saw that the monopoly firm basically does not have a supply curve because it decides on the basis of intersection of marginal cost with marginal revenue.

It decides what level of output to produce and then basically he traces back to the demand curve and sees what is the willingness to pay in the market by the buyers for this amount of output.

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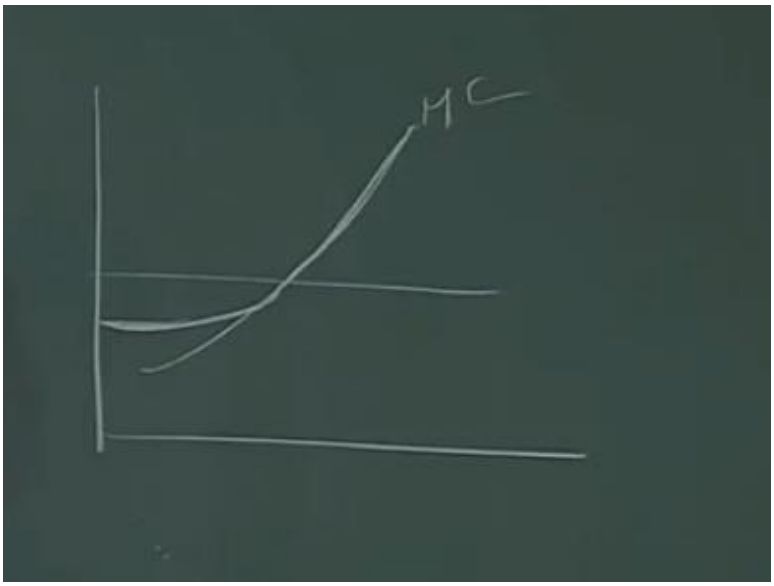

So basically the monopolist does not have a supply curve unlike the perfectly competitive firm who has a so in the case of a perfectly competitive firm this is the price line and this is the marginal cost and we saw that the marginal cost till the average variable cost is the, the minimum average variable cost is the supply curve of a perfectly competitive firm but that is not the case in case of a monopoly.

So next we also discussed in the case of a perfectly competitive firm that the long run equilibrium the final market equilibrium that is achieved in the case of a perfectly competitive market the productive efficiency is reached and allocative efficiency is reached but in the case of a monopolist unlike in a competitive market where productive and allocative efficiency are maximized there is welfare loss in a monopoly market.

Productive efficiency is compromised because output does not minimize average cost or monopolist does not decide on the level of output does not produce that level of output which minimizes its average cost and allocative efficiency is lost because price is more than marginal cost in the case of a monopoly firm.

So deadweight loss is created in case of a monopoly output. So let us see what this means like all the points that I have shown in the slide let us see what we mean by this.

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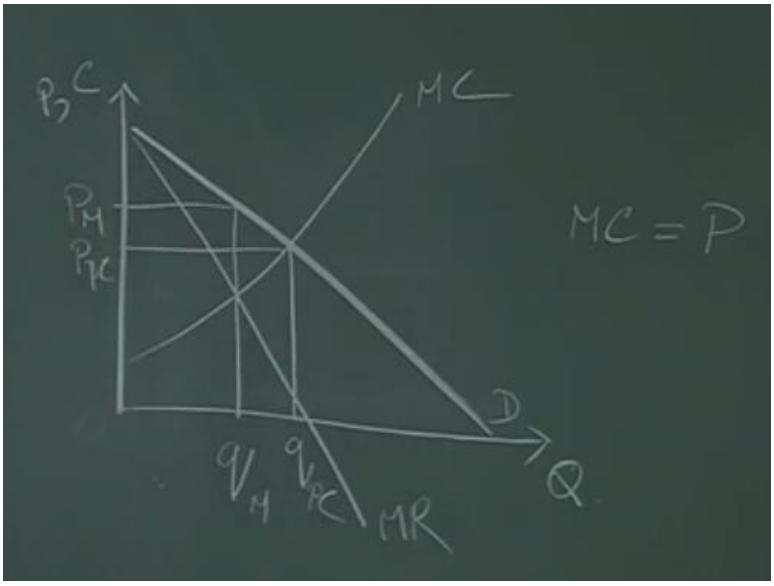

Now in case of a monopoly firm it has a negatively sloping demand curve and it has a marginal revenue curve which is not the same as the demand curve. So demand curve is basically the price line in the market and we have a marginal revenue curve in case of a monopolist because the monopolist because the monopolist knows that if it reduces the amount of output price is going to increase or if it increases the next unit of output price is going to fall. So there is a output effect and there is a price effect which we discussed in the previous class.

So this is the so this is the demand curve that is facing the monopolist and this is the marginal revenue curve and the monopolist basically this is the marginal cost curve and let us draw the equilibrium output in case of a monopolist. This is the output that the monopolist produces and he charges a price along the demand curve, he charges a price along the demand curve. So he charges a price of P M and he produces amount q M.

Now this is our monopoly outcome. What happens in the case, if we imagine this monopolist be a to be a perfectly competitive firm. In that case what is the output that is going to be produced? In the case of a competitive firm the marginal cost is the supply curve of the firm. So if marginal cost is the supply curve and the perfectly competitive firm basically produces at the level where marginal cost is equal to price so the competitive output is here, competitive output is here and price that is charged is here.

So P PC is the price that is being charged in a competitive market and q PC is the amount that is produced in a competitive setup. So now what is happening in the case of the monopolist? Let us for the time being ignore the competitive firm and look at the monopolist. Now what is the

monopolist doing here. If you remember we had discussed about producer surplus. We had discussed about consumer surplus and we had showed what is the consumer surplus and what is the producer surplus. So looking at the outcome for the monopolist what is the producer surplus that the monopolist is basically getting. So he is charging a price P M so he is getting a revenue of P M multiplied by q M which means he is getting this rectangle is his revenue. Out of this here is the marginal cost.

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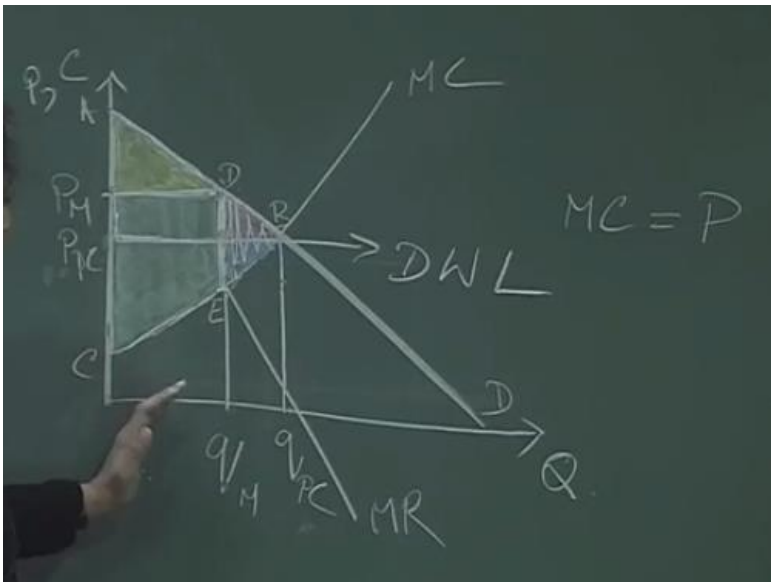

So everything that he gets above the marginal cost that is his producer surplus. So his producer surplus is basically this green region. So the producer surplus that he is getting is basically this so this green region is his producer surplus and what is the consumer surplus? Consumer surplus is this yellow region. So this yellow region is the consumer surplus so in case of the let me call it region A, B, C. So C, A, B, C, D, and E. So the region between the ABEC is the total consumer surplus and producer surplus.

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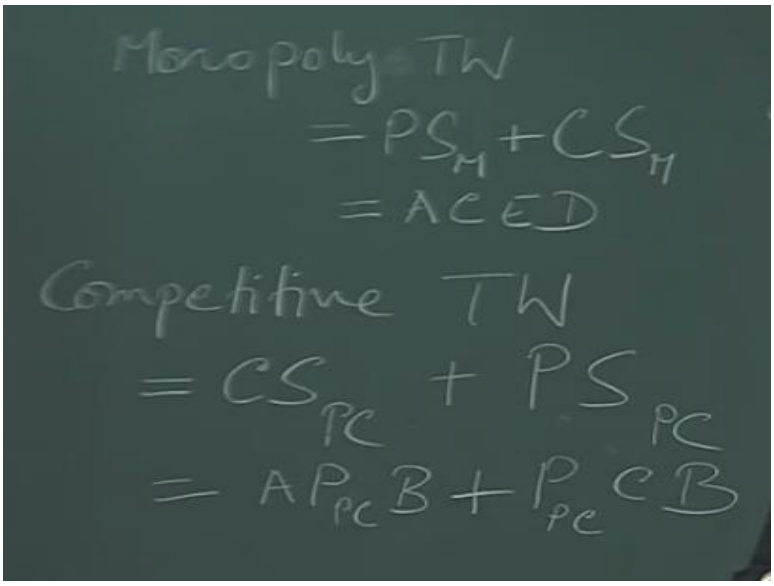

So in case of the in case of monopoly total welfare TW in the economy is basically equal to PS producer surplus of the monopolist plus the consumer surplus of the monopolist is equal to the region APMD plus PMCED so which is basically ACED is the region called ACED. Now what so having said that now had it been a competitive equilibrium, had it been a competitive equilibrium we know that production would have happened here. There would be intersection between the demand and the supply curve and total output would be PC and total price charge would be P total quantity would be q PC and total price charge will be would be P PC.

So in that case producer surplus would increase by this blue amount but this green rectangle would then go to the consumer surplus. So this rectangle of so let me put say I call it O. So this rectangle would now then go to the consumers because so watch carefully now in case of had it been a competitive output then the price that the firm would be charging would be P PC and in that case everything above the line BPPC that is this line, everything above this line would go to the consumers.

So the consumers would get this yellow triangle plus this green rectangle plus the consumers would get this pink region as well. So the consumers surplus in case of perfectly competitive output would be this entire triangle, would be this entire triangle.

So writing the, so let me write the competitive total welfare in the economy would be equal to consumer surplus in case of perfect competition plus producer surplus in case of perfect competition. Now consumer surplus in case of perfect competition would be the triangle APCB, so would be AP PC B plus now the producers in that case the producer would lose this small

rectangle which has gone to the consumers so now the producer gets continues to get this green region plus the blue triangle plus the blue triangle. So now the producer surplus in case of a perfect competition is the triangle P PC CB.

So now the producer surplus is this region. So clearly the monopoly total welfare is only this region monopoly total welfare is this region while perfectly competitive output welfare has a additional triangle of EDB. So this region of EDB is lost when the market is a monopoly market and this region is basically that the pink triangle and the blue triangle together this region is the deadweight loss that the economy is suffering when the market has a single seller when the market has a single seller or market has a monopoly this is the deadweight loss that is happening in that case.

So basically welfare loss happens when the economy shifts from a perfectly competitive setup to a monopoly setup. So this is what we were trying to explain in this slide and if you may remember we have defined productive efficiency and productive efficiency is compromised because output does not so productive efficiency is compromised why because the monopolist does not end up producing at the minimum level of the of its average minimum cost average total cost.

So because of that since the monopolist is not operating at its minimum cost hence it is possible to still reduce cost further and keep on producing so productive efficiency is not achieved. Secondly what happens here in this case, this is monopoly price. So P M is clearly more than the marginal cost. So P M is clearly more than the marginal cost.

So since this is P M and this is the marginal cost since price is more than the marginal cost it is possible so what does that mean when price is more than marginal cost that means it is possible for the monopolist to keep on producing and it there will be people in the market who would be willing to pay for this keep on the price in that case would keep on falling. Yet one would have customers or consumers in the market to purchase that good.

So this amount of output q M q PC this amount of output is not getting produced in this market because the monopolist is trying to only maximize its profit and it is charging a price which is more than the competitive price. As a result the monopolist is eating away from the consumer surplus. So the monopolist, although the monopolist is getting a high producer surplus, if you can see from here what is it like one might think then what is the what is the interest of the monopolist to curtail output?

So clearly if we see from here for the monopolist the monopolist output is better, in a monopolistic output the seller is better off than the buyer. The seller is even better off in the absolute sense because this triangle is much, the triangle that he is losing by producing less amount of output is much smaller than the rectangle that he is gaining by charging a high price in the market.

So since this is happening so the for the monopolist it makes sense to produce a smaller amount of output, charge a higher price, eat away from some of the consumer surplus and still be able to stay in the still be able to stay in the market.

So that is the reason that it is a inefficient outcome because for the entire economy as a whole so many buyers are getting left out, the seller is not producing the optimum quantity although he would be able to so that is the reason that the monopoly outcome is considered as inefficient and there is a deadweight loss happening here.

So we are going to discuss more on this later and see what can what happens when the monopolist tries to we are going to discuss something called price discrimination and we are going to see what happens when the government tries to intervene in a monopoly market because the monopoly outcome is inefficient. Thank you.