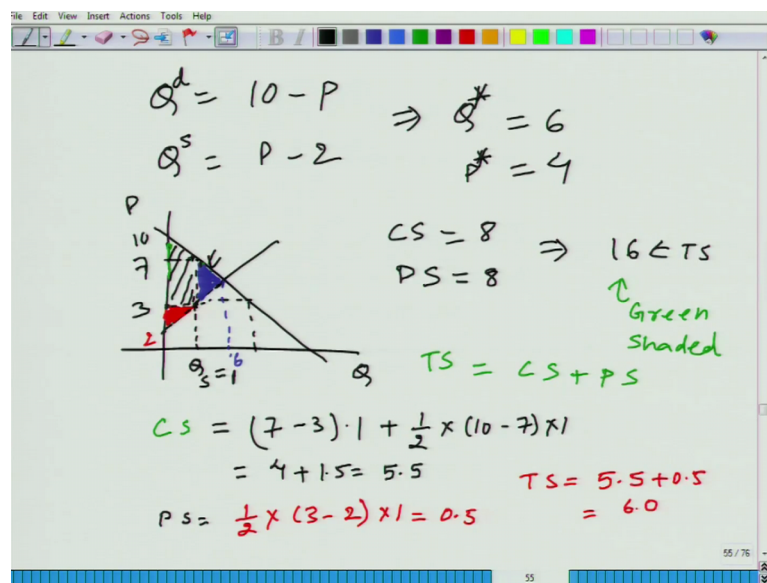


An Introduction to Microeconomics
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Lecture – 21
Effect of Price Control on Surplus

So, we are talking about consumer surplus, producer surplus and what we have done just now is, that we have calculated total surplus that is equal to consumer surplus plus producer surplus and we also talked about that what happens to the market when government imposes certain restriction on it like price ceiling or price floor. So, let us see, now let us combine these 2 topics and see the effect of total surplus for the society in case when government imposes price ceiling.

(Refer Slide Time: 01:00)



So, let us say, let us continue with the our example; numerical example that we took, where what we had, the demand is equal to demand was Q is equal to 10 minus P and supply is let us put here, superscript and subscript and this is P minus 2 and just we solved it right now. So, what did we get, the equilibrium quantity is 6 and equilibrium price is.

Student: 8.

4.

Student: 4.

And how much is the total surplus that we calculated? How much was the total surplus?

Student: (Refer Time: 01:49).

Consumer surplus with that calculated was equal to 8.

Student: 8.

Check in your note book and producer surplus was also equal to.

Student: 8.

8 and total surplus that we obtain was 16.

Now, let us say, government says that this particular good cannot be sold above price label let us say 3, it can be 3 rupees 3 dollar right now, we are deliberately are not mentioning the unit. So, just think in terms of 3 units. So, let us say 3 is here. Let us use a different color pen to the green shaded reason is 16 and now, when government says the price ceiling; government imposes a price ceiling of 3 units. What happens to the total surplus? How much is consumer surplus first? Total surplus is equal to consumer surplus plus producer surplus. So, we need to calculate first consumer surplus and how much is the consumer surplus? If I erase this shaded portion and now this, can you tell me which area will give us consumer surplus in this case?

Student: (Refer Time: 03:46).

How many units of this particular goods will be bought and sold in the market? Can you tell me?

Student: quantity.

Quantity supplied and that is equal to.

Student: (Refer Time: 04:00).

Quantity supplied is.

Student: (Refer Time: 04:03).

P minus.

Student: (Refer Time: 04:05).

2. So, this is 1, 1 good will be bought and sold in the market. So, can I say this is the area that shaded area will give you consumer surplus?

Student: yes sir.

Why? Because, even though some of the consumers can buy the goods produced by seller, who are willing to sell it in the market, but there the transaction will not take place just because of governments restriction. So, only 1 unit will be bought and sold. So, the area is going to equal to this particular area. Can you calculate how much is that area? This is 10, this is 3, this is 1 and how much is this?

Student: 3.

This point is.

Student: 3.

7.

Student: 7.

7. So, consumer surplus is going to be 7 minus 3.

Student: into 1.

Into 1 that is the area of rectangle, but we have left out the triangle at the top of this rectangle. How much is the area of the triangle?

Student: 1 more.

Half multiplied by 10 minus 7 multiplied by.

Student: 1.

1 and so how much do we get? 4 plus.

Student: 1 point.

1.5, so total 5.5. Similarly, can we calculate the producer surplus? Let us say, producer surplus is this area, this triangle. How much is that area?

Student: 1.

1.5, that is half multiplied by 3 minus 2 multiplied by it is 1.5 or 3.5, half multiplied by 3 minus 2 multiplied by 1.

Student: point.

0.5. So, what is happening to the total surplus 5.5 plus 0.5 and that is equal to 6 and what is happening to this area? The area shaded by blue color, what is happening there?

Student: (Refer Time: 06:34).

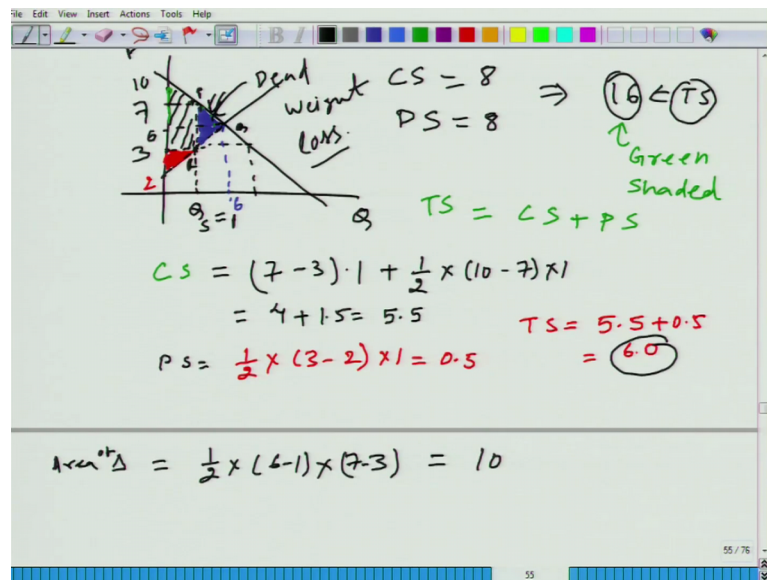
This is 6, sorry. What is happening to that area? What does it reflect? Loss to whom? Loss to the society and of course, but in a way look at it, here at this point at this particular point, we have some consumers whose valuations for the product is higher than the marginal cost of some of the producers. So, if the transaction takes place, it would make the producers better off and also the buyers better off, but just because government has imposed this ceiling the transaction this particular transaction is not going through.

So, it is a loss to the society, if the transaction would have taken place it would have, it would have made some of the buyers better off and also some of the sellers better off, but now, because of this restriction, this transaction is not taking place. So, let us calculate the area of this triangle, how much is the area of this triangle?

Student: (Refer Time: 07:45).

Let us put P Q R area.

(Refer Slide Time: 07:49)



Student: (Refer Time: 07:54).

Did you calculate?

Student: sir initial (Refer Time: 07:58).

That is fine, but why do not you calculate it also? Take a moment and calculate, this is 6.
So, half multiplied by 4.

Student: 4.

Minus this is.

Student: half into 6 minus.

Half into 6 minus.

Student: 1.

6 minus 1, multiplied by.

Student: (Refer Time: 08:21).

7 minus 3, plus also, no plus. So, how much do you get?

Student: 10 sir.

10 and it is exactly equal. Let us look at it, but total surplus in the beginning was 16 and after this restriction it is equal to 6. So, how much is the value of this loss to the society.

Student: 10.

Again it is not lot in the traditional sense; it is loss with respect to what would have happen if government would not have imposed this restriction. These 10 units of benefits had accrued to the society that is not going to the society now. So, in this sense this is a loss and this is equal to 10 units, this is called dead weight loss. So, is called dead weight loss, mist opportunity for the society.

So, although, here in this particular case what is happening? That the consumer surplus has gone down and producer surplus has also gone down and as sum, the total surplus has also gone down, but after the point through an example that I am trying to tell you that, what happens if government interferes in the market? Then total surplus definitely goes down.

In some of the cases, consumer surplus may go up or producer surplus may go up, but what you would get is, that some trade the, which are not realized. A triangle representing those trades and that triangle is equivalent to dead weight loss, the value the gain to the society that is missed, because of the market intervention. So, what I am trying to tell you, that whenever you have this kind of scenario, when you have a market where you have large number of buyers and large number of sellers and if you leave it to the market, the again to the society is going to be the maximum when there is no interference from anyone outside the market, interference would always lead to some kind of deadweight loss.

I suggest that you take example of; here we took an example of price ceiling. How about you take an example of price floor and see what happens. You would observe similar pattern.