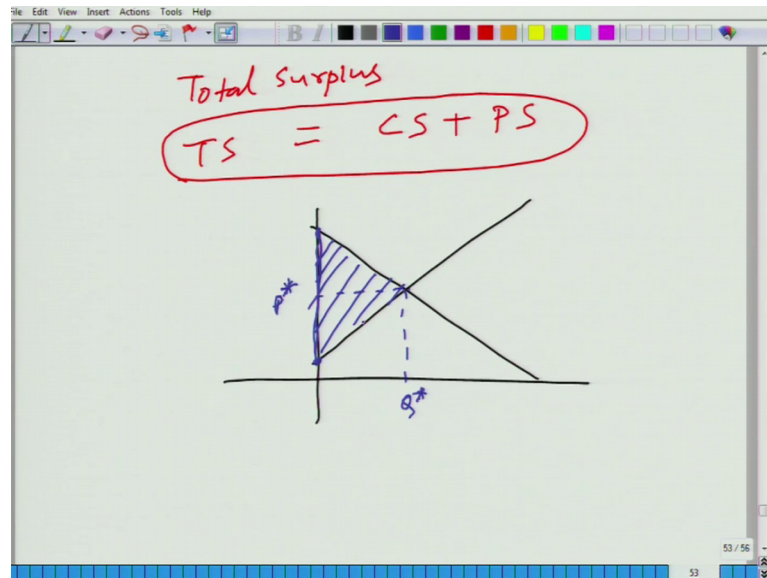


An Introduction to Microeconomics
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Lecture – 20
Total Surplus

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Now, we can give the definition of total surplus and what is total surplus; total surplus from a transaction is nothing but the summation of consumer surplus and producer surplus, let me write consumer surplus in short a CS and producer surplus as PS, TS that is total surplus is nothing but summation of consumer surplus and producer surplus.

Let us look at it in a diagram, what we have here is upward sloping supply curve and downward sloping demand curve.

Student: Demand curve.

And what we have here is quantity bought and sold in the market and price at which these quantities are bought and sold in the market, can you tell me the producer surplus as well as consumer surplus and total surplus.

Student: Sir 0.

0 which see why you are saying 0 and that is wrong.

Let me tell you but this is a common misconception that if someone is gaining something, then the other person must be losing that is why you are saying 0; that is why it immediately came without thinking you said immediately 0, because in our mind we consider all the transactions as 0 sum transaction but that is not true.

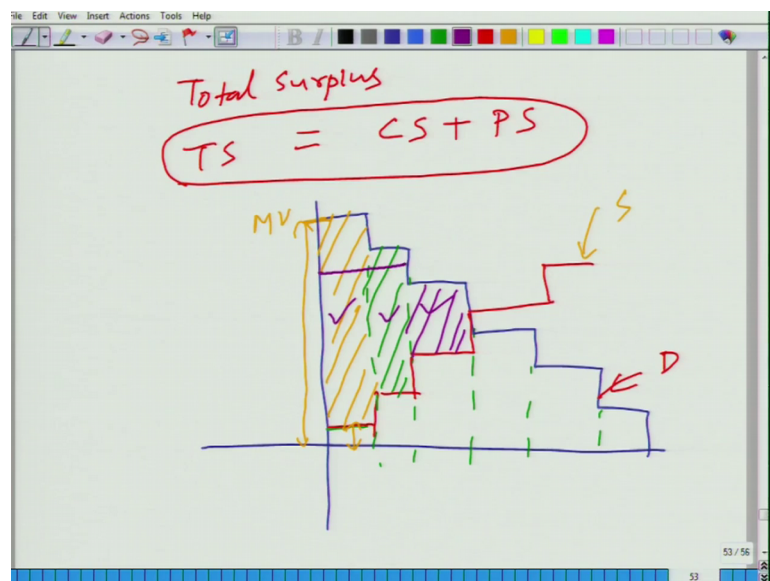
What is happening here just for example, let is for a seller for the first unit of banana you can or first unit of face it does not matter for any good the marginal cost of coming up on that good is let us say 5 rupees and for the first you need someone somewhere in the market is willing to pay 50 rupees; if a transaction takes place between the seller or and the buyer what happens, by the transaction the creator value of worth 45 rupees because it was just 5 rupees but benefit is 50 rupees and how its distributed between consumer and producer it would depend on the market price.

So, let us say here in this case for transaction called transaction here right, here at this point when Q is very near to 0 the gain is almost this much. So, the total gain ns I can say is this whole area.

Student: (Refer Time: 03:13).

This is the total surplus people are gaining from the transaction; I think it would be easier if we use the step function to understand rather than using the continuous function.

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So, let me draw this is the demand and there is something wrong with this graph it cannot be like this.

Student: Every corner (Refer Time: 03:44).

It will always intersect ok.

Student: Corner.

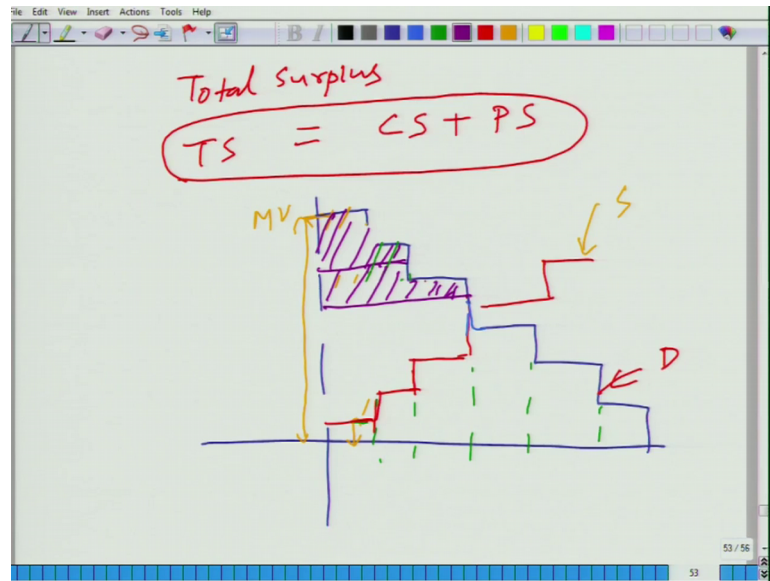
This just let me say just 1 this is the demand function and this is the supply function, for the first unit what does this say the marginal value of the first unit is this much and how much is the marginal cost only this much. So, when this wood is sold in the market it creates value for the society equivalent to the difference of this 2 height, similarly for the second unit the value created is equivalent to this difference and for the third unit this difference. So, how can we get the total surplus by adding this and this. So, transactions are not always 0 sums its positive sums, because why someone is selling something in the market.

Student: Because.

Because he expects to get some benefit from the transaction and why you are buying it, you also expect to get certain benefit from that transaction. So, just when the transaction is taking place it means at least you are earning either 0 or something more than 0, another person is also earning in monetary terms either 0 or greater than 0. So, the summation can never be you know negative, it will always be 0 and most of the time great it is not always be 0 it will be at least 0 or something greater than 0.

So, transaction is creating value in the market and that is how we calculate the total surplus; of course, how much is the consumer surplus it would depend if market price is here then let me erase this these things ok.

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If market price is here then only this much is consumer surplus and remaining is producer surplus.

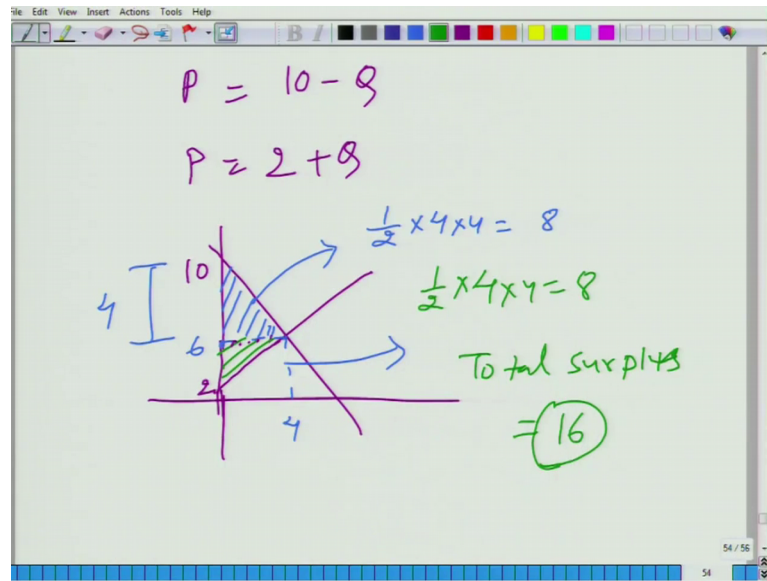
Student: Producer surplus.

If market prices here then you will have more of consumer surplus, but right now when we are talking about total surplus what we are talking about is the sum of consumer surplus and producer Surplus.

Student: Producer.

So, transaction never ever forgets transactions takes place in the market because, it makes seller as well as better buyer better half not just 1 of them; otherwise you would not participate in the transaction.

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Now, so let us take an example where we will calculate the total surplus. So, let us say here we have by looking at the equation can you tell me whether it is demand function of supply function.

Student: demand (Refer Time: 07:51).

It is inverse of demand function or demand function and then we have here 2 plus Q. So, let us draw it this is 2 this is 10, if you solve it by now you should be able to solve it quickly how much is the equilibrium price.

Student: 6.

6 how can we get the equilibrium price by equating these 2 equation, by equating these 2 equations we will get the Q star and Q star is equal to six q star is equal to 4.

Student: 4 sir.

And by putting 4 in 1 of these 2 equation, we will get the p star and how much is the p star 6.

Student: (Refer Time: 08:40)

Fine, so now we can calculate the total surplus first we can calculate the consumer surplus; how much is the consumer surplus area of this triangle and how much is the area

of triangle, half multiplied by base multiplied by height and how much is the base is starting from 0 and going till 4 . So, base is 4 and how much is the height.

Student: 4.

Again 4 and how much is equal to.

Student: 8.

Total 8 so consumer surplus is equivalent to 8, unit how about producer surplus.

Student: 8.

So, again you can calculate half multiplied by base multiplied by height and here again you get 8. So, how much is the total surplus.

Student: 16.

So, we can say just because this transaction takes place 16 units of value was generated for the society; society is gained this 16 units this is total surplus is also in a way total gain for the society.