An Introduction to Microeconomics
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Lecture – 12
Supply and Market Supply

What is supply?

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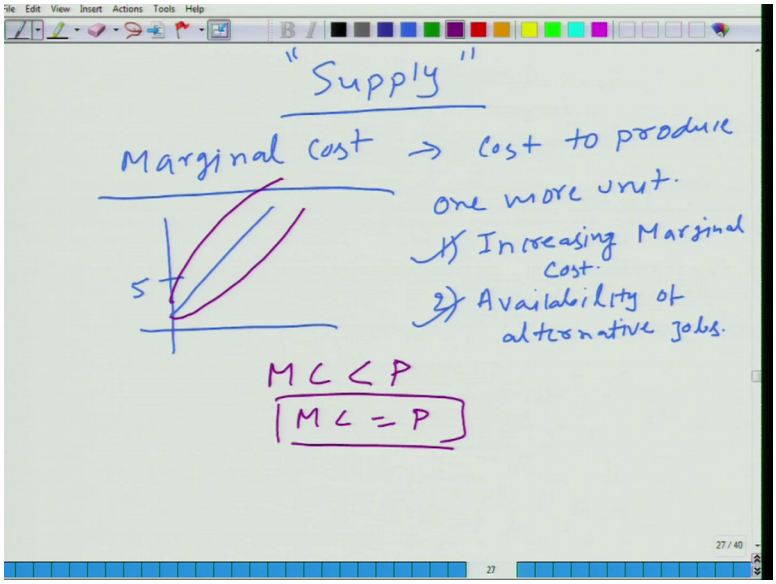

We have been talking about demand for quite some time, and when we talked about demand, what we meant a function of.

Student: Price and quantity demanded.

Lecturer: Function of price and quantity.

Student: (Refer Time: 00:34).

Demanded or demanded as a function of market price what is the demand function? It is a function of?

Student: One.

One market price, it gives quantity demanded as a function of market price. Now we are talking about not the consumer side not the buyer side, but we are talking about producer

side or seller side. Supply gives you the willingness to sell you know at a particular price. So, remember earlier I relate I what I talked about is, how marginal value relates to quantity demanded here we will introduce a concept called marginal cost what is marginal cost?

Student: Seems that increasing by one unit and.

The cost to produce.

Student: One more unit.

Cost to produce one more unit ok. Cost to produce one more unit. So, again think about it, if your cost to produce is 5, again it is a made up number nothing sacrosanct about this number the cost to produce one unit is 5 rupees and you can sell it in the market for 10 rupees will you produce it of course, you will produce it because by producing you can gain 5 rupees.

Student: 5 rupees.

On this unit, but if price to produce one additional unit is 5 rupees, and you can sell it in the market for 4 rupees will you produce it.

Student: No.

No you will not because you will spend 5 rupees, but you will get only recover only 4 rupees, and you will incur a loss of one rupees; that is why you would not produce. So, there we learn demand is a downward sloping curve why demand is the downward sloping curve? Because diminishing marginal value as well availability of.

Student: Alternatives.

Alternatives; can you make some comment about supply curve? Is it downward sloping it is fixed or it is upward sloping it is?

Student: Upward sloping.

It is upward sloping all of you know its upward sloping again why it is upward sloping.

Student: Sir not diminishing, but because sir because price increases, profits will increase for a.

To let us look at let us look at, let us look at again concepts very similar to.

Student: Diminishing.

Diminishing marginal value and availability of alternatives. One that increasing marginal cost; I am not saying that marginal cost always increases, but most of the time it does increase ok. Marginal cost does increased for most of the range like let us say it is about selling mango in the market you have a tree, probably getting the first mango from the tree would be quite easier because it will be on low lying branch, but as you want to get more and more mango you have to climb tree and it will be costly for you. So, cost would keep on increasing if you want to get one more mango so; that means, that marginal cost is increasing that is one.

The second is again availability of alternative job, not alternative item right now you are it is about catching it is about grabbing a mango from a tree. Let us say by grabbing that mango you can make 5 rupees, you sell it in the market and you get 5 rupees, but let us say you also know how to catch fish. You can go to a pond and start catching fish probably you know it would be easier you know the effort probably, it will cost you 3 rupees to catch a fish and that will fetch you 10 rupees from the market.

So, availability of alternative jobs let me elaborate it little more. Right now let us say market price is 5 rupees again made up example market price is 5 rupees, and let us say you are willing to supply 5 units of mango why because up to 5 units of mango your marginal cost is less than 5, but above 5 mangos your marginal cost is above 5 rupees, that is why you would not move from 5 mangos to 6 mango is it clear? But now let us say market price goes up from 5 to 6 what will happen to your willingness to supply you will at least supply the same amount of mangoes, that you were supplying earlier and probably some more.

Student: Ok.

Fine, now second way to look at it that if market price was 5 rupees, let us say you were not willing to supply any mango because you are not very efficient in taking mangoes

from tree, you do not know how to climb a tree, you are scared that you would fell down you had hurt yourself. So, you are not interested in that; and what you typically do is that you catch fish and sell it in the market; but the price of mango starts climbing up you would realize that it is beneficial for you to sell mangos rather than catching fish.

So, that is the reason because of these two reasons, increasing marginal cost and availability of alternative jobs mix supply curve an upward sloping curve is it clear any doubt about it. So, it is upward again I am drawing a straight line, but not you know it is not necessary it can be something different, it can be like this, but what we what I mean to say is that supply curve is always going to be an upward sloping curve ok. And the related to the marginal cost if MC that is sort for marginal cost, it is less than P you will sell that particular unit in the market and you will keep on selling till MC becomes equal to.

Student: P.

P, fine, one more thing I want to emphasize that I did not do in the demand side because concepts are very very much similar. So, you would learn.

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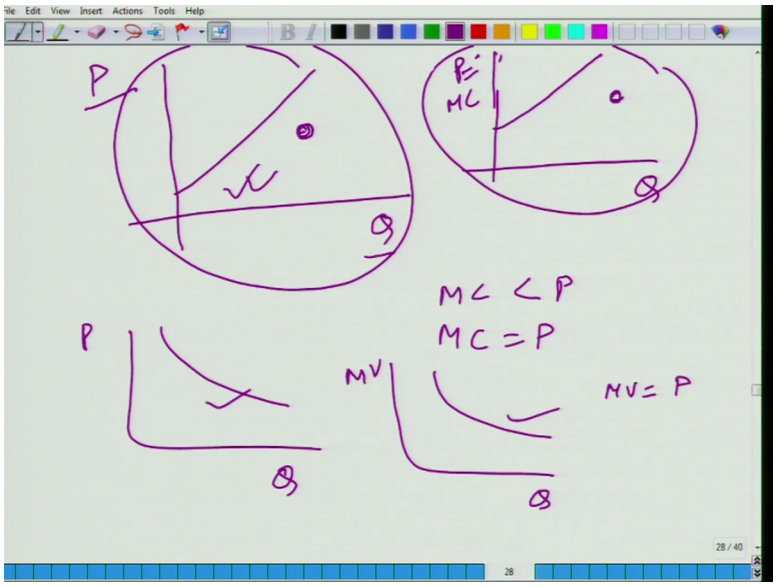

Now, here look at it, when we are drawing the supply curve supply curve is always P on y axis and Q on x axis, we are talking about an upward sloping curve. But now let us draw another curve MC marginal cost as a function of quantity and what we talked about

earlier in the earlier slide? That increasing marginal cost if that is true how we can draw? We can draw like this that marginal cost is increasing as you are trying to sell more and more quantity in the market fine. Can we say that can we find any relationship between this and this are they related? Do not say that I have you know here it looks smaller, here it looks bigger. So, these are not the relations and I have deliberately drawn that both are upward sloping that is very clear, but other than that.

Student: Marginal cost must be more less than this.

Think little bit more, let me tell you that these two curves are the same you draw MC versus Q and change this MC to P you will get this curve, how is it possible think about it. This is true to large degree later on we will find exception to this, but right now let us not get into the exceptions. See what is happening if MC is less than P, you will keep on selling of course, here a junction is that Q is a continuous variable Q is a continuous variable, it is possible to sell fraction amount of this particular good.

So, when till when you will keep on selling till MC becomes equal to P ok. So, that is what I am saying that here P is equal to MC. So, these two curves are the same curve is it clear? If we are talking about just to revise the concept that we have learned, let us look at this concept in the demand context what we have here is P and Q and here we have downward sloping curve ok. And here we have marginal value and Q it is a downward sloping curve this curve and this curve these two are the same curve same using the same concept, till when you will keep on mind? Till M v becomes equal to P is it clear?

Continuing with the same; in the graph they are the same let see raise the demand part. In the graph they are the same, but how about remember when we write it as a mathematical formulation what do we write it?

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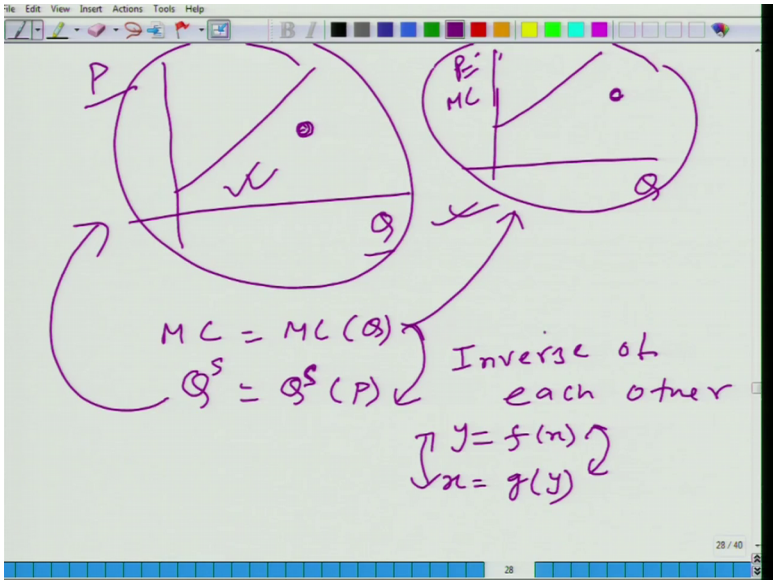

MC as a function of Q that is what we are writing. But here in context of marginal cost we are writing marginal cost is a function of quantity, but when we are writing the supply function, how are we going to write? Quantity supplied is a function of P; when we are taking this equation to the graph we are putting MC on y axis and Q on x axis. But when we are clicking that supply function when we are taking the supply function to the; you know graph making, we are reversing deliberately you know because of our convention in economics, we are putting QS on x axis and click on y axis.

So, when we draw the graph they are the same graph, but when we write the equation they are inverse of each other is it clear? And how we are getting the inverse? Rather than changing the graph we are changing the axis remember the mathematical concept just bit of digression y is equal to f x is a function and if you want to figure out the inverse of this function, what is the inverse of this function? X as the function of y.

So, instead of changing the function what we are changing here is the axis. Look at it that is what happening here the axis are being changed. So, that is why these two are inverse of each other, when we talk about mathematical formulation, but when we take talk about the graph they are the same graph. Not in mathematics doc because mathematics if you are drawing the inverse the graph of inverse function it would be universe, but in economics we have convention that quantity always goes on x axis, that is why we get the same graph is it clear.

Now, we have already learned you see that it is because the concepts are very similar to demand, we do not have to go into that much of detail. What we have learned is that supply function is a is an upward sloping function, while demand is a downward sloping function other thing that also you should always keep in mind that movement along curve and shift of shift of the supply curve.

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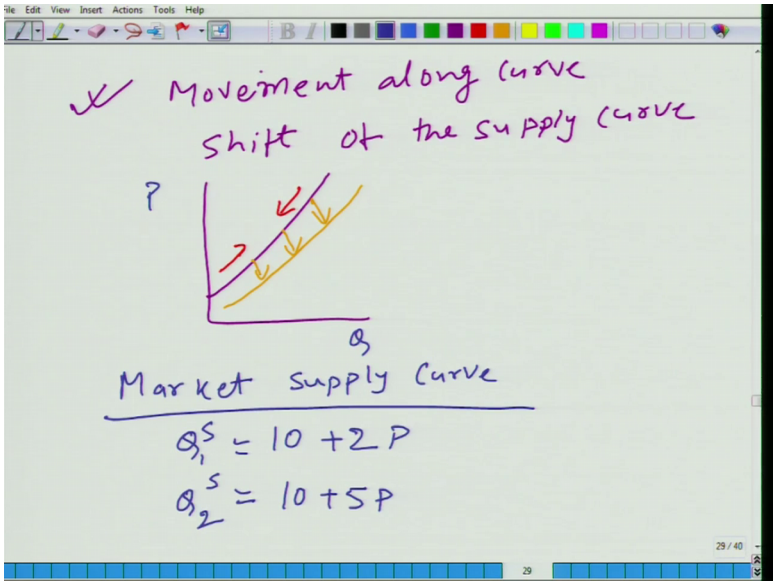

When we are talking about the supply function as we talked about the demand function earlier, we are talking ceteris paribus meaning that all other factors are held fixed or held constant and we are changing the price of this particular good and we are observing its impact on quantity supplied in the market.

So, we are moving along the curve, but when we held the price of this good, the same and change or other any other factor, we will learn pretty soon what are those factors which impact the supply function, but we change those factors what do we get? At the same price we get either more or less of quantity supplied, and we do it for all the prices what we get is, that shift in supply function is it clear.

So, let me say here this is the shift. These two we have to understand we should not get confused between these two ends very very important fine ok. Now we have talked about individual supply curve earlier what we did? We moved from individual supply curve to market supply curve again we have to repeat the same process how can we get the

market supply curve? We will horizontally add all the individual supply curve, and we will get the market supply curve.

So, take an example for the person 1 first supplier it is 10 plus 2P, and for the second supplier let me let me just read write it let me let us continue with this sorry ten plus 5 P, but I want to tell you whenever you do this see when you are drawing the supply curve or demand curve, it is although we are the function is Q as a function of P.

But when we draw what do we draw? P as a function of Q so many times in books or in many other places, you will see that supply function is not given as quantity supplied as a function of P, but P as a function of quantity supply they are basically the same thing. Mathematically speaking they are inverse of each other, but in economics the terminology we interchangeably we use from context it should be clear that they are inverse of each other and you should adjust accordingly. So, now, you have these two supply function, can you get the market supply function? So, I leave it to you, you can get the market supply function on your own.