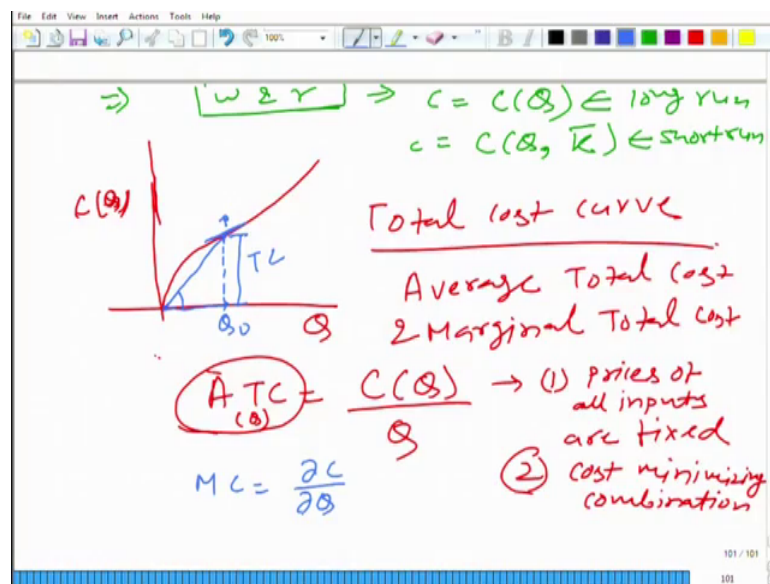**An Introduction to Microeconomics**
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Lecture – 103
**Cost Revisited: Quasi Fixed Cost**

Now, we have obtained that the output expansion path. And where did we obtain? We obtained it on a graph where the axises represents the amount of input.

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What we can do? We can translate it into the other at the different axis where we have Q amount of output given on x axis and the cost given on the y axis. How can we obtain this? Look at this at this particular point we know how much is the output and we know how much is the.

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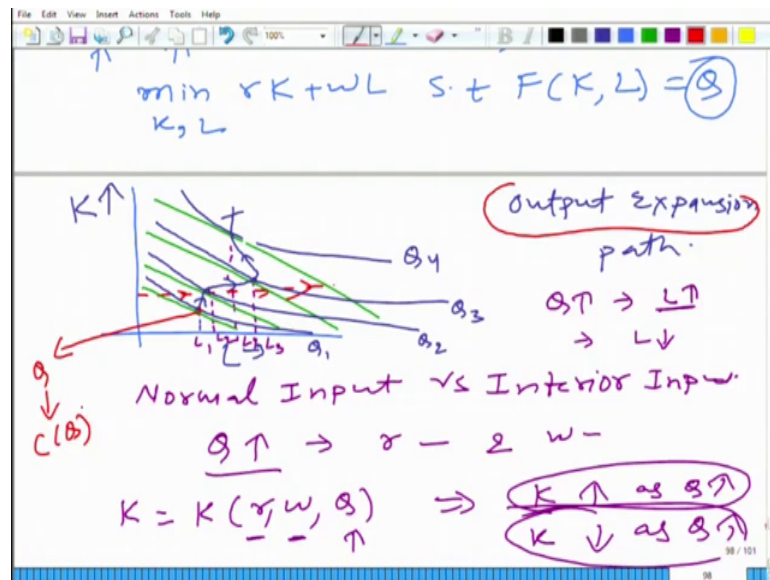
Student: Cost.

Cost. Of course, we are taking w and r as fixed similarly for all the label of Q we can obtain the C Q and then we plot it here C Q versus Q and let me just draw roughly, I have drawn something like this ok, this is.

Student: Cost curve.

This is called total.

Student: Total cost curve.

Total cost curve and what does the total cost curve give.

Student: The total cost the minimum cost of producing Q (Refer Time: 01:28).

That is the important word not just the total cost of producing Q amount of output.

Student: Minimum.

But the minimum cost to produce the key amount of minimum total cost to produce Q amount of output. So, never ever forget this minimum part, minimum is quite important ok, fine. So, idea is when we get this curve what we assume there firm has already minimized its cost and we are talking about only those particular combination of inputs

which would minimize the cost of production, is it clear, ok. Now, in this curve we can talk about remember when we were talking about marginal productivity and average productivity.

Student: Yes.

Point.

Student: Expert in computer.

Good, fine, this is fine, this is better. So, what we can obtain from this curve? We can obtain average total cost.

Student: And marginal total cost.

And marginal total cost. Remember again that here I am not making it explicit whether I am talking about average total cost in short run or in the long run. The same concept you can use and you can get average cost in the short run and average cost in the long run fine I am not going to emphasize it again. How can we obtain the average total cost? What is the average total cost? Total cost.

Student: Divided by 2.

Divided by amount of output.

Student: Output.

So, average total cost is C of Q divided by Q. Two things you should never mean forget that first that price, prices, price of all inputs are fixed of course, when price would change ATC would change and ATC is the function of Q.

Second thing that we should remembered we are not talking about any combination that is being used to produce Q amount of output, we are talking about a specific combination which combination that minimizes the cost of producing Q. So, cost minimizing combination. These two things you should not forget. And how can we obtain it on it on this graph this is quite simple from the origin we have done it.

Student: (Refer Time: 04:23).

Let us say at this particular Q naught label we are interested in calculating Q naught average total cost. What we will do, we will get the.

Student: Slope of the line from origin.

So, we will get the total cost, and this is the total cost ok, and we will divide it by this amount should be divided by this Q naught and if we do that what we get.

Student: Slope of the line valid at (Refer Time: 04:50).

Slope of the line will give this average total cost. Similarly what we have here is.

Student: Marginal cost.

Marginal cost. And what is marginal cost? It is rate of change of total cost with respect to Q.

Student: (Refer Time: 05:14).

One definition, another if we do not want to use calculus what we have to say that ok.

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So, if we change the quantity by small amount and we see observe the change in the total cost. So, change in the total cost divided by the change in quantity is given as the

marginal cost, but more accurate is to take this small change to 0 and in that case these two become equivalent fine is this clear.

Now, one thing I would like to emphasize that total cost can be divided into two parts one is fixed cost another is.

Student: Variable.

Variable cost. And what is the difference? Fixed cost does not change with the amount of output and variable cost do variable cost does change with the change in.

Student: Output.

Amount of output. So, this is a function of Q while this is not a function of Q. Now, when I divide total cost into two parts of course, I am talking about short run because by definition in long run we can change everything ok. It is a theoretical concept we can change everything.

So, in that case there is not going to be any fixed cost. So, when I divide it into two part of course, I am talking about short run again one can talk about fixed cost in two different way fixed cost that is sunk cost and that is not sunk cost. This part this part is called quasi fixed cost also let me talk about it little bit.

Student: Sir, can we also said that as a opportunity cost.

Which one?

Student: That is not input; like if we purchase a machinery and after 1 year I can sell it at 70 percent of its price. So, some cost was 30 percent and 70 percent was a quasi some cost and (Refer Time: 08:00).

Not quasi sunk cost.

Student: It is also the quasi (Refer Time: 08:04).

See let me let me come back to your question I will come to that ok. I think you have asked this question earlier something similar.

Student: (Refer Time: 08:10).

So, let me say here what do we mean by sunk cost? A cost that cannot be recovered ok, cost that cannot be recovered that is sunk cost. Let us say I want to start producing some items something from in this in this particular room and to do that I also felt like painting this room and, but after 6 months I decided you know I decided not to because of some reason I decided not to produce this particular good at this particular place. So, I do not think I would be able to recover the cost of this painting by selling it and all ok. So, this is sunk cost this is gone this is not recoverable.

But let us say someone comes he comes and he says I like this particular color and he will be willing to pay something extra. Let us say that the painting cost you 500 rupees and because of this particular painting you get 200 rupees extra for this particular room, then your sunk cost is only 300 rupees because this is you are not able to recover.

Student: hm.

But not whole 500 rupees; In other word let us say when Microsoft, Microsoft you know every few years they come up with a new operating system. And when they invest huge amount of money to come up with the next operating system; So, these days they are thinking about coming up with.

Student: Windows 8.

Windows 8. So, all the money that they have spent forget about the patent for that if they have they have they got some patents because patents they can sell and they can get some money, but all the cost that they have incurred and are not they are not able to translate the output of you know the output of that effort into some kind of patent. Though the cost incurred for those efforts are gone this particle company's name will never be able to recover that the costs. So, those would be the sunk cost, but if they have spent 10,000 rupees on something and they got a patent for it.

And if that patent is saleable then that is not a sunk cost the output of that effort can be sold in the market even if they decide not to produce window 8. But let us say in order to produce window eight they developed some prototype that they cannot sell in the market nobody would buy it. So, cost of that cost of producing that out that particular kind of output would be sunk cost because that is not recoverable from the market fine. So, why I am saying part of fixed cost is not sunk cost because something is gone, but another

kind of fixed cost is that you incur only if you produce some output if you do not produce you do not incur. So, research cost is kind of sunk cost in the production of window 8, but let us say after spending quite some time they figure out that it is not worth releasing the next operating system.

They would not incur cost on the production of new CDs for the window 8, but let us say if they decide to go for production of CDs for window 8 they need to higher production in charge that production in charge does not matter whether the Microsoft produces 100 units, 50 units and a lakh unit, they would need to higher some accountants.

They would need to higher probably as salesperson. Again it would again change with the number, but not in the continuous manner, ok. So, here we can say the cost of accountant and cost of production in charge is quasi fixed cost. Why because company incurs only if it decides to produce positive amount of output.

Student: Ok.

Fine, but the research cost is sunk cost it was fixed cost they incurred even if they did not produce anything. So, that is why I am differentiating between these two, that a fixed cost that is sunk and fixed cost that is not sunk and also this is quasi fixed cost fine. Now, when we talk about opportunity cost we economist we always consider whenever we are talking about cost its always opportunity cost that we talk about.

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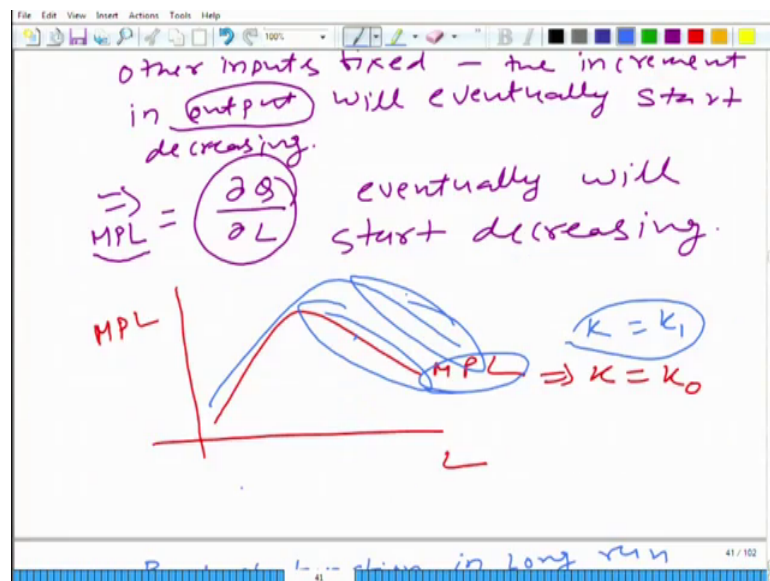
Like for example, we have been talking about this rK, rK plus wL this is the cost we are talking about this is the cost we are minimizing. So, this r is basically the opportunity cost of using one unit of capital per unit of time, fine.

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This w is opportunity cost of using one unit of labour per unit of time. So, these are the opportunity cost in economics we are always worried about opportunity cost we always talk about opportunity cost now you can say this is also accounting cost.

So, in that this case accounting cost and opportunity costs are the same. In this case its exactly same in this case it depends you know sometime they account for depreciation or they may not account for depreciation. So, when we are talking about economic cost we will account for depreciation and everything you understand.

So, here why we are saying this is the opportunity cost because if you do not higher one unit of capital you will have r unit of money left in the company's kitty. So, that is the up that is the best use of that you know that is the value of the best use would be art it can be used somewhere else. So, that is why it is the opportunity cost ok. So, these two are different fine.

Now, if you pay attention to this we can defined average variable cost or we defined the average cost an average cost was TC divided by Q. So, we can bring it here and what we get is we divide it into 2 components and this component is.

Student: Average.

Average fixed cost and this component is average variable cost fine. Just I am not saying that average variable cost is fixed, but there is a possibility that average variable cost is fixed it would not change. So, do not get confused.

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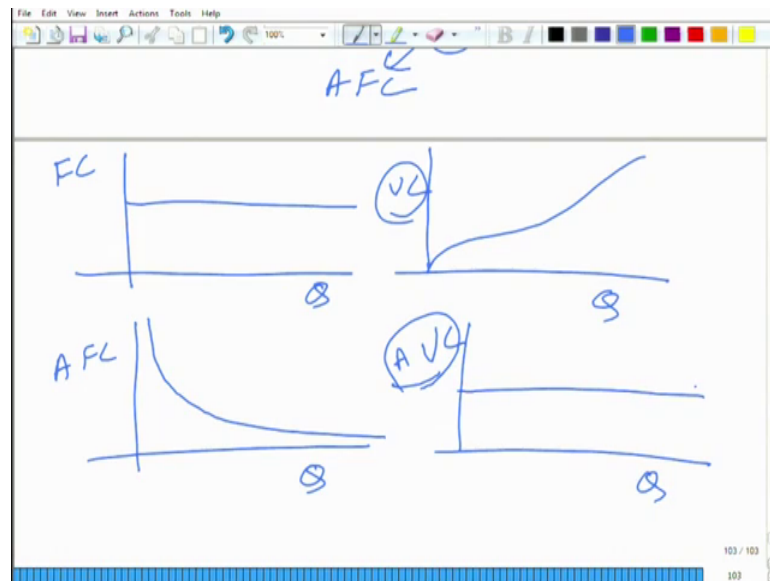
Let us look at it first one by one fixed cost if we did right here fixed cost versus Q. What do we mean? That it is not changing with the output, fine. How about variable cost?

Student: (Refer Time: 16:04).

One thing we are certain about that if we do not produce any output.

Student: 0, 0.

Its 0, and it can go any it can go any way we do not know fine. We will we will see an example shortly ok. Now, when we draw average fixed cost with respect to Q how would it look like?

Student: Decreasing.

It decrease and asymptotically it reaches to.

Student: 0.

0; how about this?

Student: Depends (Refer Time: 16:42).

It depends.

Student: Depends.

It depends it depends, but there is a possibility that average variable cost is fixed.

So, name a name you have variable, but what you get is fixed. I am not saying it is true some time you have you know you may have.

Student: You.

You may have like this ok. So, it does it not; it depends on the variable cost, but do not get confused when someone says that average variable cost is fixed because it is possible.

Fine.