An Introduction to Microeconomics
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Lecture - 36
Few Examples of Changes in Budget Line

Now, let us talk about some examples.

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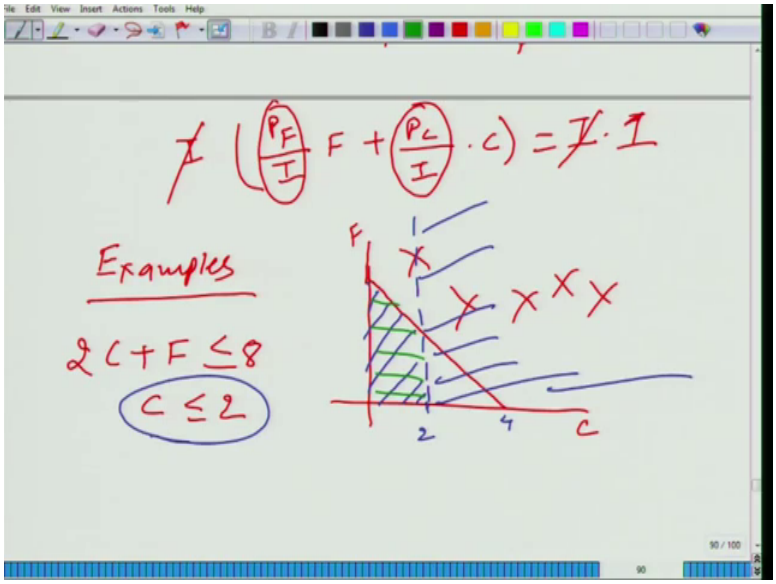

It asks you what happens when I say because of some reason because of the island has only 1 coconut tree Robinson cannot gather more than 2 coconut tree in coconuts in a day. What would happen to the budget constraint? This is now an extra constraint. The maximum amount of coconut is limited to 1 in a day.

Student: Ok

What is going to happen?

Student: Ah

Remember now earlier constraint that we had was 2c

Student: Plus F plus less than or equal to.

Plus F less than or equal to 8. Now, what another constraint that I am imposing if I translate it in mathematics, what I am saying.

Student: C

C has to be less than or equal to 2.

Student: 2.

And of course, I am allowing all although I did not means and I am allowing that you can gather the fractional amount of coconut ok. Do not worry about it because how I can justify it that fractional amount is coming because I am taking Cruco was on that island for a very long period of time. So, it is the average over an over over 1 year or 5 year. So, fraction is a possibility fine ok.

So, now u see what will happen to the budget set. This is F, this is c.

Student: We have to cut of the trapezium after 2.

So, c

So, what we are saying this area is not possible.

Student: Hm

And now what is this constraint is saying, that this is 4, if this is 2, this area is again not possible. So, the new budget set is given by this and how it is important. Now at least time has changed. So, we do not have it, but you still have it at some places, some in some rural areas. Earlier most of us used to buy various grains and sugar from public distribution system and you had a limitation that you cannot get more than these many cases of sugar. So, this is this situation would describe the earlier PDS scenario. Is it clear? Ok. .

Now, the second example that we can take is, now let us say that I do not know whether you have heard about it in Bihar Nitish Kumar government was giving cycles, free cycle to class 8 or class 9, I do not remember exactly, but class 8 girl student and later on he started giving it to male students also.

So, now let us see the way it is implemented, we can implement it in a various different ways. So, what I am going to do? I am going to put cycle on x axis. and of course, here I am allowing for the fractional amount of cycle ok.

Student: Hm.

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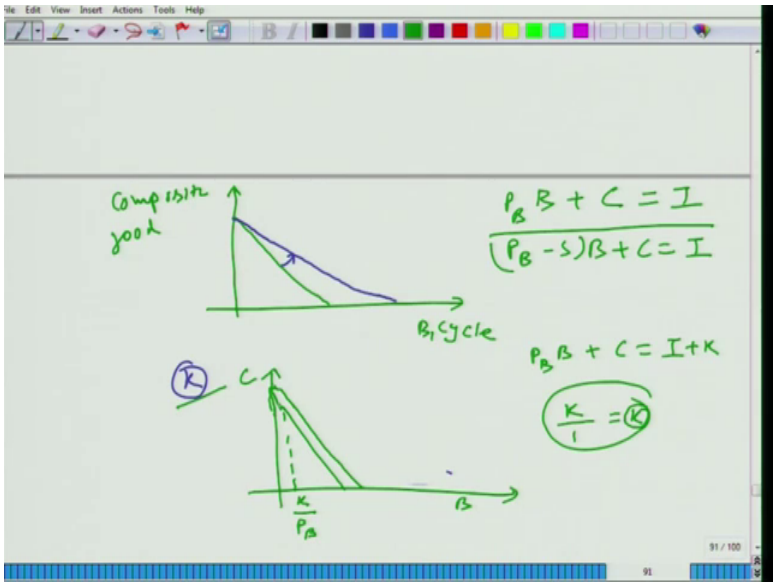

Some reality and some made up thing and on x axis what I have is the composite good.

Student: Hm (Refer Time: 03:40).

Fine.

Student: Hm.

And let us say this is the, this is the budget constraint or the budget line, this is the budget line.

Student: Hm.

Now, 1 way that this kind of scheme can be implemented that government says let me put it Pc, c, let me put here bicycle. So, I that I can put here B and C is for composite good PB plus c that represents the composite good should be equal to income fine.

Now, 1 way to do it is to give some subsidy on bicycle.

Student: Hm.

If government gives unit subsidy, what is subsidy? It is opposite of tax.

Student: Tax.

So, remember earlier we talked about proportional tax and unit tax. So, I am talking about unit subsidy.

Student: [FL]

So let us say government gives unit subsidy on bicycle. What would be the new budget set and the new budget line?

Student: Sir rotation occurs.

So, tell me the equation, equation here what will happen here.

Student: Ok.

Student: PB minus s.

PB minus s

Student: Into B

B.

Student: Plus c.

Plus c.

Student: Is equals to.

I and it simply means is that there will be anticlockwise rotation fine.

Student: Hm

This is one way to do it. The second way government can say that I give you this voucher and this voucher you can use voucher is worth let us say K amount and this voucher you can use for only 1 thing, to buy, nothing else. What will happen to your

budget line? This is the earlier this is bit difficult 1. So, you have to think, what would happen when I give you a voucher? There are 2 possibilities, you can spend your money either on bicycle or on composite droid.

Student (Refer Time: 06:15).

And government gives you a voucher worth k unit and that voucher can only be redeemed if you buy. What will happen to your budget set and the budget line? So, 1 simple thing that you can think about it that earlier line is of course, PB b plus c is equal to I and government is giving let us say that this k can be used for anything. Then it is an addition in the income.

Student: Income

I plus k, I have not brought that this income has to be. So, then what would be the impact this budget line would shift outward.

Student: Outward

And the horizontal shift is going to be equal to?

Student: k.

It is going to be equal to k.

Student: Horizontal sorry k by PB.

Student: K by PB.

K by PB.

Student: K.

That will be the horizontal shift.

Student: Hm.

So, this is the shift or these 2 are parallel to each other.

Student: Hm.

Fine.

Student: Hm.

But one thing you should notice, how much is the increase here in the composite good.

Student: k times.

K by, k by 1, that is k.

K is the increase there and here is increase is k by PB.

Student: PB.

But this k that we have increased here that is not possible because this voucher that has been given to you can be used only to buy cycle. Can be used to buy only bicycle, you cannot use it to buy the any comp, any other good. So, you cannot move from here to here. So, the amount at least what you can do you can spend this k if nothing, then you are forced to spend this k on bicycle. So, whatever you do you cannot have less than k by PB bicycle because if you do not have this k by PB bicycle that coupon or that voucher will go Waste.

Student: Waste. So, what is going to happen, this draw a line from here.

Student: Ok.

This is you know here you will come. Let me draw it again. So, basically you are moving like this you understand. And how much is this much k by PB, this is b this is c. You understand? is it clear? So, this is not a possibility here the dotted part that is not going to, is it? and this will play a role we will see later on we will analyze this fine.

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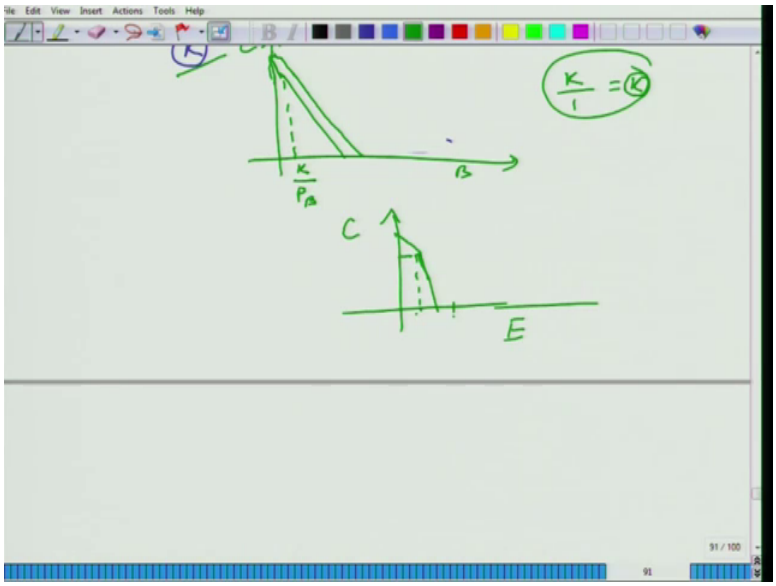

Now, when you buy electricity in India, let us say here you have electricity on x axis and compose it good on y axis. Up to certain unit you will have to pay a lower rate.

Student: Yes sir.

If you go beyond those units then your electricity charge per unit will increase.

Student: High.

Can you represent it in the in the budget set?

Student: Yes sir sir.

Its going.

Student: First it would be less steep and then it would be more steeper.

Then it will be steeper because beyond this you will have to pay higher amount. Let me just describe this example in little more detail, why it is happening. So, that people who are not, people who will have difficulty in drawing they will be able to draw it clearly ok.

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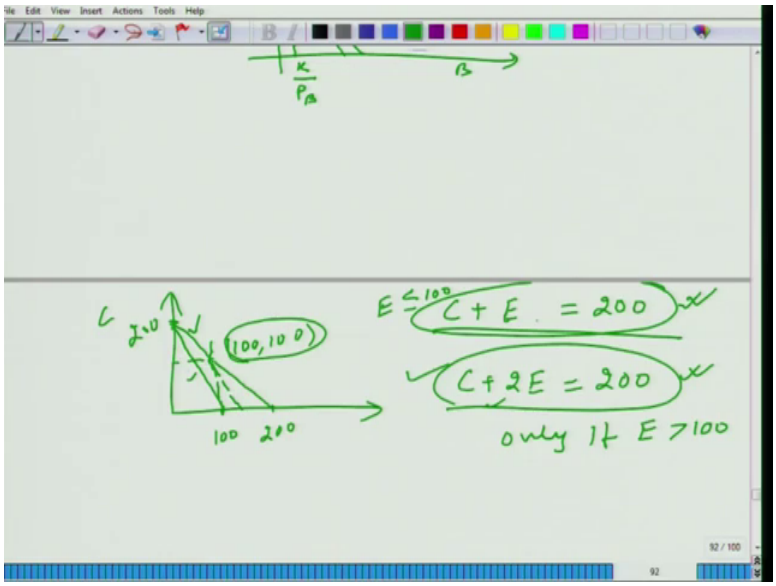

So, let us say price of 1 unit of complex good is 1 and price of electricity for example, let us say it is just 1 up to 100 units. Let us say your total income is 200.

Student: Ok.

How many if you are allowed to buy as much electricity as you want at this rate, how many units of electricity you can buy? 200.

Student: 200 units.

And similarly you can buy up to 200 units of complex good. So, here the maximum will be 200 and here also the maximum will be 200. So, we can draw a line because we know it is an equation of a line and to draw a line we need just 2 points fine.

But now there is a more restrict restriction that beyond 100 units, you will have to pay 2 rupees per so, the new equation will be, but this equation is valid only if E is greater than 100.

Student: Greater than equal to.

This equation is valid when E is less than or equal to 100. So, one way to do it is to draw this line. When we draw this line, what is happening remember the earlier case from here to here. What is happening, forget this story, but remember the method. What is

happening here? The price of electricity is going up. So, this budget curve will rotate from which point, from the maximum possible

Student: (Refer Time: 12:14).

Complex good point and where will it come?

Student: 100.

It will come 200 because that is the possibility. So, that is what we will get ok. this is the new line.

But if we compare here for the, this is this is not going to help you why it is not going to help you because here you are buying up to 100 units and what is happening for this 100 units, you are paying 1 rupee per unit , but here what we are considering we are paying

Student: 2 unit.

Student: 2.

2, 2 rupees per unit. So, that is not true. So, what is happening basically is, what is happening, basically this line is coming into effect after this point this point. This point what does it represent? 100 comma 100. This is affordable, but what is happening beyond this point? You are reducing the amount of complex good below 100 and you are increasing going to increase the electricity above 100. So, when you increase electricity above 100, earlier you had 1 is to 1 exchange, but now by increasing 1 unit of electricity you are decreasing 2 units of 2 units of complex good.

Student: C complex good.

So, this line, this sort of line would come at this point and rather than starting this line from here, we can start this line a parallel line from here and we will get reach to this point. You understand? Fine. What was happening? Here earlier how did we draw? We draw this line, when we do not we started with that we are. So, we are devoting all our resources on the complex good and then we are reducing the amount of complex good and increasing the amount of electricity and how it is going to happen according to the first equation in 1 is to 1 ratio and that is why we got this line.

But when we did it in ratio of 2 is to, we got this line, but 2 is to 1 is not valid right from the beginning. It becomes applicable when you are reducing the amount of complex good below 100 or when you are increasing the amount of electricity above 100. So, then you will have this sort of line starting from here fine. So, next time we are going to talk about preferences and utility. Fine ok.