Economics of Health and HealthCare
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Lecture – 05
Budget Line

So, when now, we are; we have idea about my satisfaction level, we have idea about that how much we can get the different bundles, the different combinations of X and Y to give me an amount of satisfaction, to keep me in equal level of satisfaction now, this is my demand, I can ask for 1000's of apples and 1000's of oranges, can I get that; because economics look at both the supply side, the demand side and also, in terms of your constraints, resource constraints.

So, even if I have enormous demand, my resource is limited, when I talk about my limited resources here, when I go to market my resource is my budget yeah, how much I would like to pay to get these 2 commodities therefore, my constraint here is my budget constraint which determines that which will be my most preferred or which will give me the most efficient satisfaction or optimal satisfaction or which will be my most preferred bundle.

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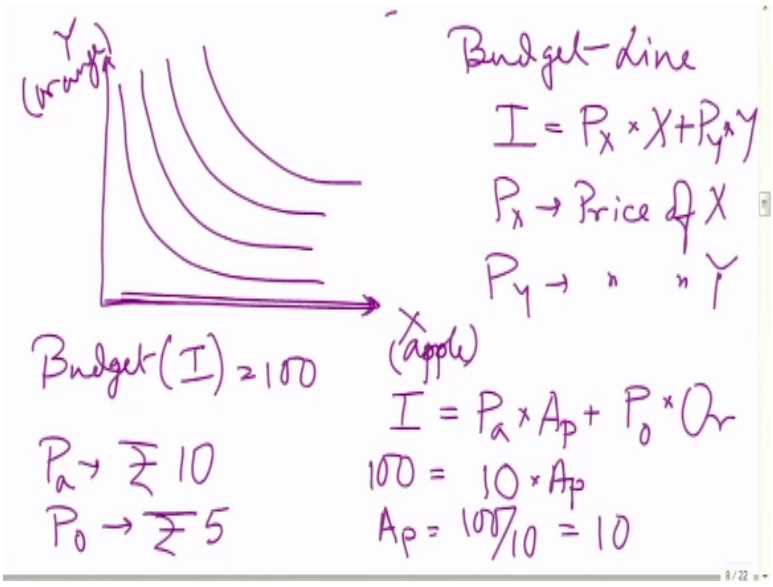

Let us see how budget line pictures in, I have my indifference curves, I will draw 1, 2, there are plenty of indifference curves is not it, there are plenty of indifference curves on a plane and when I am getting X and Y, now my budget line can be given as; line can be given as I can say I, my income or my budget is Px * X + Py * Y, yeah now, what is Px; Px is price of X;

commodity X and Py is price of commodity Y, Px is price of commodity X and Py is price of commodity Y.

And x and y shows you that how many of commodity X and Y you will get, right now let us take an example that I have got 100 rupees with me, this is my budget, my income is 100 rupees, I know the price of; now this X and apple, this can be my apple and orange, the price of an apple; price of an apple is rupees 10, price of an apple is rupees 10, price of an orange is rupees 5, we do not get in rupees 5 but still for an example, rupees 5.

And how do I determine my budget line? With these 100 rupees, if I get only apples, how many apples can I get? So, if I can plot my I + now Pa * apple + Po * orange, I can say I is 100, I am not getting orange, orange is 0, I am not getting orange, orange is 0, so I am only having now price of apple is 10 rupees, I am getting only apple, so the number of apples I will get is 100/10 that is 10 units, fine.

Similarly, if I am getting only orange, then how many oranges can I get with the given budget line.

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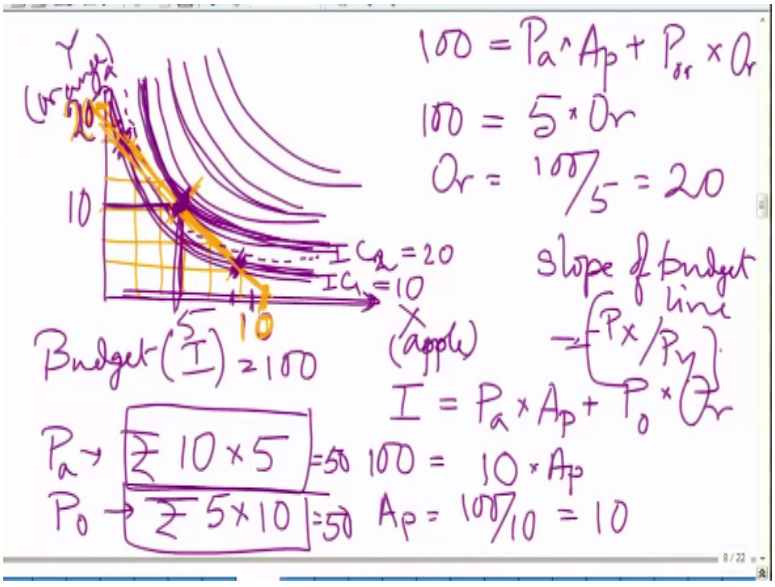

Similarly, 100 * price of apple * number of apples + price of orange * number of orange and here apple is 0, number of apple is 0 because I am getting, I am not getting apple at all, I am getting only orange, so the; how many oranges I can get so with this 100 rupees budget and 5 rupees per orange price, I can get total 100/5; 20 units of orange, right. So, if this is my 10, and this is my 20, I can draw a budget line something like that.

This is say 10 and this; I mean this is 20 and this is 10, I have a budget line which is like this or maybe I will just change the colour here yeah, so my number of apple is, oh here okay, over here is 10 and over here is 20 that is what I get and these are my intersects on the x axis and y axis which primarily gives so, here this is 0, 10 that means, I am getting only apple, here this is sorry, 10, 0, I am getting only apples and this is 0, 20, I am getting only orange.

I get my budget line, my optimal choice will be on that point where my budget line is tangential to a particular indifference curve yes, why so? Now, indifference curve 2 and this is indifference curve 1, I can also be on indifference curve 1 and I can also be here with my given budget, this is; this is my budget line, so all these points on this budget line, all the points on this budget line will like how many you know, you get of apples and oranges together you are spending 100, whatever you get the combinations of apples and oranges over here on this budget line you are paying 100 rupees.

And whatever you are on here your satisfaction is similar, if you are here your satisfaction is lower but in all the points on this line your satisfaction level is same, even if it is lower than IC2, so you can get this combination, this combination, you can get this combination that means over on these points, your satisfaction levels, say IC1 is 10, IC2 is 20 and your satisfaction level is 10, you are exhausting all your income 100 rupees, all your budget you know whatever you have in your purse right that on that time.

At the same time, you want higher satisfaction, you want a combination which gives you higher satisfaction, so with this when you have a budget constraint, you are utilizing your entire budget but your objective, you have got few of oranges, few of apples but your satisfaction level together is on a suboptimal level, which is lower than what you could get on IC2 because on IC2 also, you have exhausted your entire budget.

But you are on the same or on the higher indifference curve not on the same indifference curve, you are getting more of apples and more of oranges than on any point of IC1 and that is how more is better and you are on a higher satisfaction level but utilizing that same 100 rupees, you could probably again be on this particular line, which is between IC1 and IC2, you could probably gain higher satisfaction level as compared to IC1 on this dotted indifference curve but again not the optimal.

The optimal one which is the most sort for the most preferred one will be the one which is tangential to your indifference curve only on that point that means, and you cannot go anywhere above because if you move above on any indifference curve, you have to take load, you do not

have money, you have to borrow or you know and that is not the economic one at least theoretically, maybe practically, not theoretically.

So, whatever I have right now paying that I can get maximum this much I mean, this much satisfaction yeah and hence this will be my number of say, if this is 5 and this is 10 should be my number of most preferred bundle yeah, so again you can see with this 5 and 10 probably, I can multiply 5 of apple with rupees 10 and 10 of oranges with rupees 5, add them up this is 50, I have paid for apple, 50, I have paid for oranges and my satisfaction level and I have paid total 100 rupees and my satisfaction level gives takes me to the highest indifference curve.

So, this is how we estimate, we try to understand what is the most efficient choice of; choice of 2 commodities or the combination between of 2 commodities among all the commodities given my budget constraint and a slope of a budget line, a slope of a budget line will be given as Px/Py, the price of x and price of y and it is of course, negative because it is downward sloping but yeah in an absolute form its Px/Py yeah, there is the slope.

And it eventually, shows you and on that point, on this point where the budget line and the indifference curve are tangential to each other, it shows that the budget line, the slope of the budget line Px/Py is actually equal to slope of the; on that line you know.

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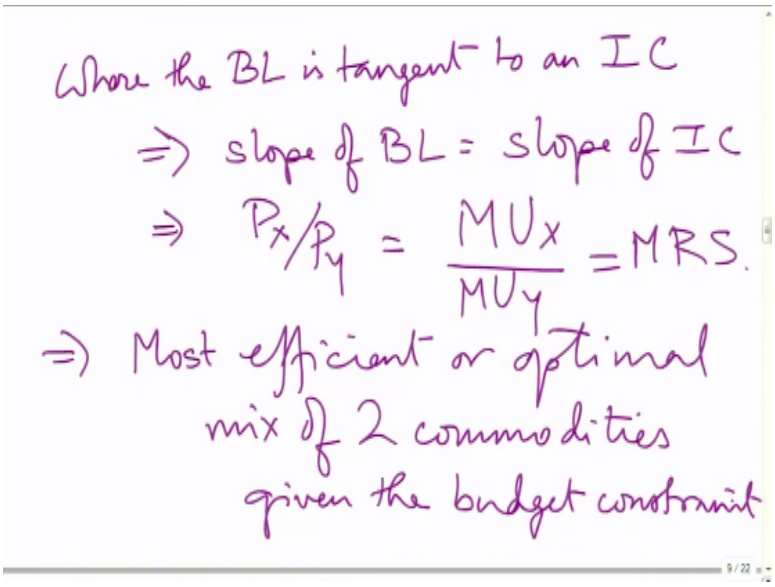

The; where the budget line is tangent to and indifference curve on that point on that point, your slope of budget line = the slope of indifference curve yeah, so your slope of indifference curve, so your slope of budget line is Px/Py where is your slope of indifference curve is basically, the marginal rate of substitution or you can also call it marginal utility of x/ marginal utility of y yeah that is the marginal rate of substitution that how much satisfaction you are gaining.

And it comes from the how much sacrifices you are making to get one additional unit of X that is a marginal rate of substitution, right so or you can say marginal rate of substitution and on that point, you will get your efficient or optimal or most efficient; most efficient or optimal mix of 2 commodities given the budget constraint yes, the; the next one we will try to see that if the price of one commodity changes, what happens?

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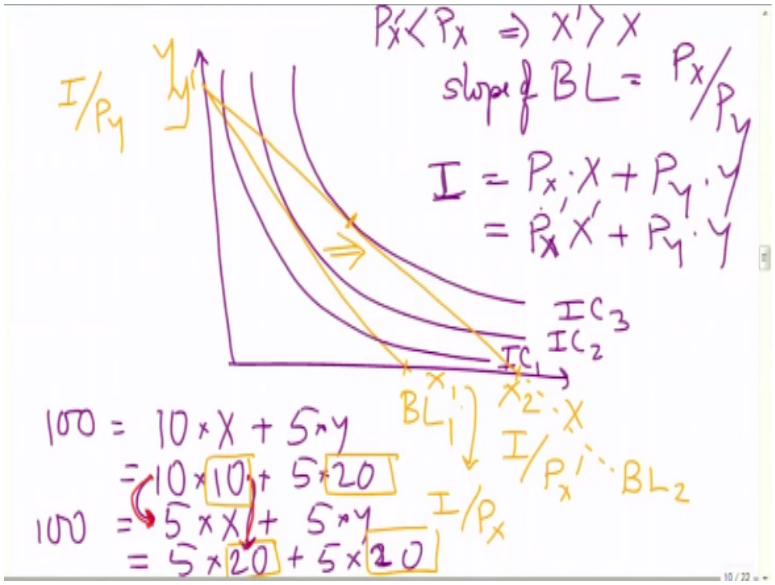

Too many budget like, yeah, indifference curves right, let us say I have a budget line, where I was primarily over here, this was my budget line I can call it budget line 1, this is x and y and this is my IC1, this is my IC2, I can remove others in fact to make it clean yeah, IC2 and this is my IC3, now suddenly what happened now, the slope of this budget line is Px/Py right, the slope of this budget line is Px/Py.

Now, what happens is the price of X goes down, so if I go back to the equation of budget line Px X + Py Y, so keeping the income same, if the price of X goes down Px prime, when Px prime is < Px, when the price of X goes down, then I can have higher with this price of Y remaining same, I can have higher amount of X, is not it, for an example if I was having say with 10 rupees of X and 5 rupees of Y, I was basically having 10 of X and 20 of Y.

Now, suddenly what happens; the price of X goes down to 5, now in this new scenario, now I can have 5 of X and 5 * Y, I can have 20 of X and 20 of Y, so with the decline in price, my consumption of X is increasing with the decline in price, the consumption of X over here it is increasing, so if my consumption of X is increasing that means, I can take more of X at the same; more of X.

So, if I was on X1 here now, I am having X2 with the same amount of Y because this is given with in terms of this 1; Y1, this Y1 is given in terms of I/ price of Y, X1 is given, this is BL2, this is budget line 2, this budget line 2, it does not extend yeah yes, just to show, so this X2 is actually I/ Px prime and this X1 is basically I/ Px, right that is what; that is how I get, so Px I/Px Px prime is 20 and I/ Px is 10.

And when it moves from 10 to 20, it moves from here to here and the price of Y remaining same, the number of Y, so I/ Py I 100/5 is 20, it has remains constant in constant in 20, so when price decreases, my consumption increases and the budget line shifts outwards, so I can move towards a higher satisfaction level pertaining to my higher consumption of a particular commodity keeping the other commodity same, so more is better.

Again, if my price increases, then my budget line will shift inside and I will move to a; towards a lower indifference curve, so with the change in the budget line, with the change in the slope pertaining to the change in the price, if price increases my indifference curve, I move to the higher indifference curve because my budget line shifts outwards, if my price increases, I cannot afford that many my budget line comes inside towards and making a tangent to a lower indifference curve which is my new optimal condition.

So, here we stop our consumer behaviour session next, we talk about supply and demand and the market mechanism, thank you very much.