Foundation Course in Managerial Economics
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Lecture - 07
Determinants of Elasticity of Demand

Welcome back to the next module of elasticity. We have introduced the concept of elasticity of demand and in the previous module we saw how elasticity is calculated and we said that this general definition of elasticity or the calculation it can be used to look at elasticity of demand or the responsiveness of demand to various determinants of demand. So that kind of sounds easy. So let us look at what are the determinants of demand. What determines and how if a commodity is or a product is going to be highly elastic or is it going to be going to have low elasticity.

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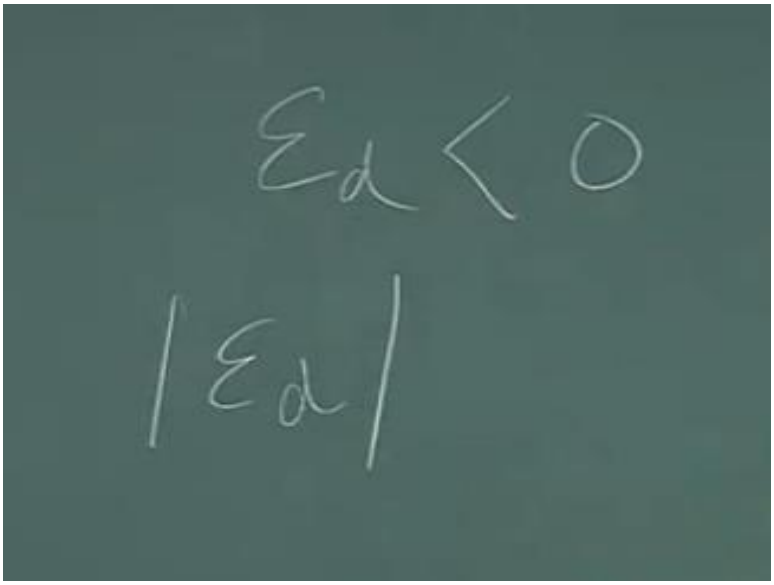

So these are certain things we are interested to know and again repeating what I said in the previous module that elasticity of demand or price elasticity of demand is less than 0 always because of the law of demand that whenever price increases quantity is going to decrease and when price decreases the quantity demanded is going to increase.

So this is always going to be less than 0 but when I say that elasticity is high or low what I mean by that is the absolute value of the price elasticity of demand. So this is price elasticity of demand and not any elasticity. Say only price elasticity of demand is less than 0.

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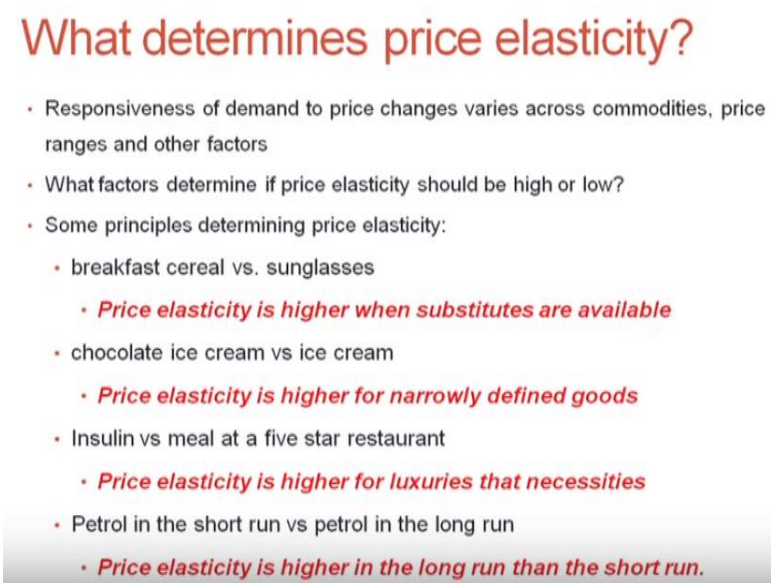

So what determines price elasticity or what determines how the elasticity is going to be? What kind of elasticity can we expect for a certain product. So this is what we are trying to study here. So responsiveness of demand to price chain price changes varies across commodities, price ranges and other factors. So how much demand is going to respond to any price change that depends on a lot of factors and so we are going to discuss a few of the factors here which are which are kind of more obvious.

What factors determine if price elasticity should be high or low? So here are some principles determining price elasticity. So following are some principles determining price elasticity and I am going to explain using some examples. So as I show the examples I would actually encourage you to try to imagine before actually going to the next slide I would encourage you to imagine which of the commodities should show higher elasticity.

That is the question that we are I am going to show 2 commodities and the question that I am trying to ask is which of the 2 products should be more sensitive to price changes. This is what so the more sensitive to price change it is higher the elasticity. That is the quantity adjustment happens more in response to price changes.

So let us look at the first example. Say breakfast cereal versus sunglasses. So in case of so which one of these 2 products is going to have probably higher elasticity? So what the logic that goes on here is look at breakfast cereal. What is breakfast cereal? Breakfast cereal is a option for your breakfast. So is it that you cannot have breakfast without breakfast cereal? No, it is not so. There are whole lot of substitutes of breakfast cereal and this is just one of the choices.

And on the other hand I have sunglasses. What is sunglasses? Sunglasses are basically what you wear to protect your eyes from the sun rays especially during summer. Are there any substitutes of sunglasses? Can you so when you are going out in the sun and you would like to protect your eyes do you have any other alternative? No, you do not have any choice, if you need it you have to buy sunglasses.

So the principle that we are talking about here is price elasticity is higher when substitutes are available. What I mean to say is for breakfast cereal if the price of breakfast cereal increases people are more likely to shift to other breakfast choices. So when people move to other breakfast choices the little bit increase in price of breakfast cereal is going to lead to a huge amount of decline in quantity of breakfast cereal demanded in the market because people have other choices.

But what happens in case of sunglasses? So say for example in the summertime if there is a increase in sunglasses probably the sale of sunglasses is not going to go down too much if it is really required by the people who are wearing it. So they are not going to demand less sunglasses because there are no choices, there are they have no alternatives to sunglasses.

So second example is chocolate ice-cream versus ice-cream. So what is the logic here? Which one has higher price elasticity and which one has lower price elasticity? I am sure many of you have already figured out here that chocolate ice-cream is one type of ice-cream. So there are various alternatives of chocolate ice-cream. So if the price of chocolate ice-cream goes up many of the people are likely to shift to other flavours of ice-cream, that is possible.

So but if and exact substitute of ice-cream is not really available in the market. So that is a that is a more broader concept of product. So ice-cream is a more broad concept of product and so the elasticity of demand of ice-cream in general is likely to be less than the elasticity of demand for a particular flavor of ice-cream. Same holds true for lot of other things.

Say imagine that say blue jeans the price elasticity of demand of blue jeans in particular is probably going to be higher than overall clothing in general or even jeans in general. So the more specific a product is or more highly defined or narrowly defined a good is more narrowly defined a good is the higher is its price elasticity of demand.

My third example is insulin versus meal at a 5 star restaurant. So I am very sure that by now you have kind of figured out how to find out the elasticity of demand if it is going to be high or low. You know very well and you can imagine that any product if the price is going to increase or

decrease how am I going to respond to it and that kind of gives you a clue about what is the price elasticity of demand.

So in this case I am sure you have figured out that insulin has a very low price elasticity of demand because it is a it is absolutely necessary for people who buy insulin. No one buys insulin for pleasure. They buy because it is a lifesaving drug. It is required for people who have diabetes. So insulin is required for them and they cannot go without insulin and if the price of insulin goes up they are not going to reduce their demand for insulin.

On the other hand meal at a 5 star restaurant. It is a luxury commodity. It is a luxury service or product or whatever you call it. So meal at a 5 star restaurant if the price really goes up a person is going to or the people are going to cut back on visits to these restaurants his visit to the 5 star hotels for meals and so the price elasticity of demand is much higher in case of 5 star meal at 5 star restaurant.

So price elasticity is higher for luxuries than necessities. The price elasticity is higher for luxuries than necessities. Another example is petrol in the short run versus petrol in the long run. What does this mean? This means say the government increases the price of petrol suddenly. Suddenly there is a price hike in petrol. How much people are going to respond to the price hike? Is the respond response to the price hike going to be more in the near future or is it going to be more in the longer future or the distant future.

In all likelihood response to something like this is going to be slower in the short run and much more effective in the long run or much more of the the government's policy of increasing the petrol prices to probably cut down on the consumption of petrol that is going to make itself felt in the market more in the long run. Why because in the short run it is not easy for people to adjust their demand because say the demand for petrol it depends on what kind of cars they are driving. What is the way of travelling to work every day.

So all these are quite sticky situations. You cannot change your petrol car overnight because price of petrol has increased. But in the long run probably you may plan to buy a diesel car. So in that case in the long run the economy is going to adjust to a higher price of petrol. But in the short run probably a price hike is only going to lead to more revenue for the people selling petrol than a reduction in consumption of petrol.

So price elasticity is higher in the long run than the short run. So in this way it is possible to imagine various situations where the elasticities would be high or low depending on the kind of

determinant we are talking about, depending on the kind of situation we are talking about, depending on the nature of the product, the price ranges say for example elasticity is more if the price range is very high but if the price range is low elasticity is probably low or in other the intuition behind it is if the price is very high people are going to respond quicker to a reduction in price but if the price is too low probably people have already adjusted their consumption or further fall in price or rise in price is not going to probably change the too much of the quantity but that again depends on what kind of commodity one is selling.

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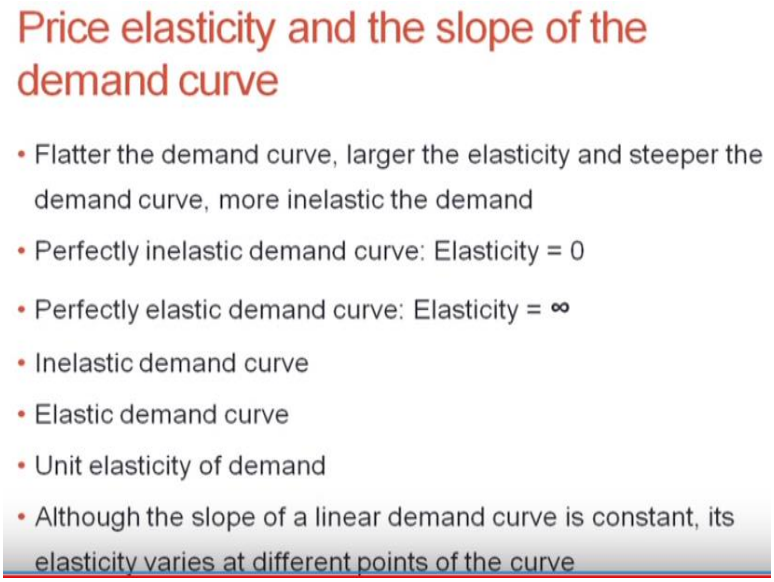

Next we are going to talk about so all this was about the price elasticity of demand etc. What we discussed in the previous slide is price elasticity of demand depending on the kind of product that one is selling in the market but every of each of these products all the products they all have a negatively sloping demand curve.

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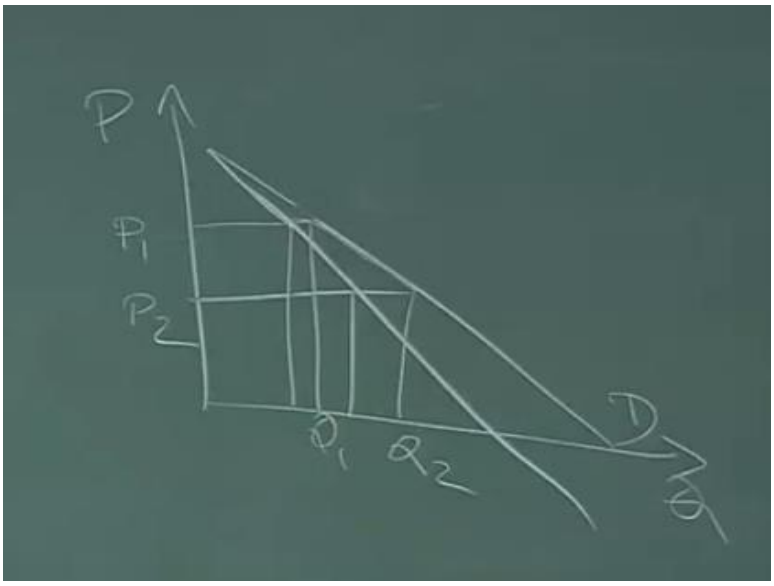

Say all of them have a negatively sloping demand curve. Now what does this demand curve tell us about the elasticity of demand. If I draw the demand curve in a certain way is it going to tell me if the elasticity is high or low? Yes, it is. This is just any negatively sloping demand curve that I have drawn and I am going to see that obviously how much my price is changing with how much my quantity is changing with respect to price that depends on this slope of the demand curve.

So the movement from this price to this price P 1 to P 2 if there is a price fall how much my quantity is going to increase that depends on the slope of the demand curve. So if this is a steeper demand curve say ya this is a steeper demand curve so if it is a steeper demand curve so this was my initial price and this is my new quantity so the distance is lesser. So let us look at the slides. So flatter the demand curve larger the elasticity and steeper the demand curve more inelastic the demand is. Let me draw a neater picture.

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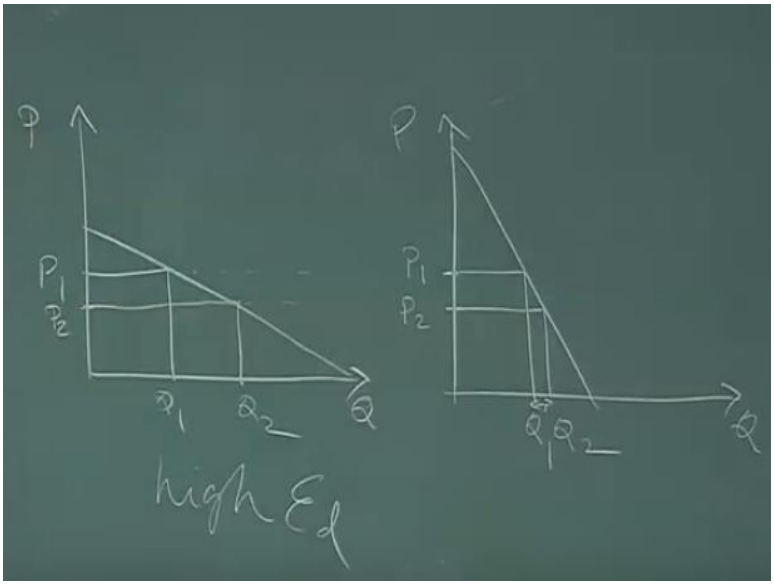

So flatter the demand curve so this is a very flat demand curve this is a very flat demand curve and this is my initial price and this is my so a little bit of fall in price is leading to a huge amount of increase in quantity so the response is so response of quantity to price is quite big. So a flat demand curve gives me a high elasticity of demand.

On the other hand I if I have a this is a very steep demand curve this is a steep demand curve and the same price change P 1, P 2. So P 1 my quantity was Q 1, P 2 my quantity is Q 2. So in case of a steep demand curve when my price falls from P 1 to P 2 my output increases. Output is going to increase. It is not that it is a inelastic demand curve so output is not responding. No, output is responding and output is increasing or not output I should not call it output this is product or the amount quantity purchased by the people by the consumer.

So the amount the quantity purchased by the consumer is increasing but by only a little bit. So the same amount of price fall is leading to a huge increase in quantity sold in the market but the same amount of price fall is leading to a very small increase in quantity sold in the market. So flatter the demand curve larger the elasticity.

Now what does a perfectly inelastic demand curve look like. What does a perfectly inelastic demand curve look like? Now a perfectly inelastic demand curve means that there is no response of quantity to prices. There is no response of quantity to change in prices.

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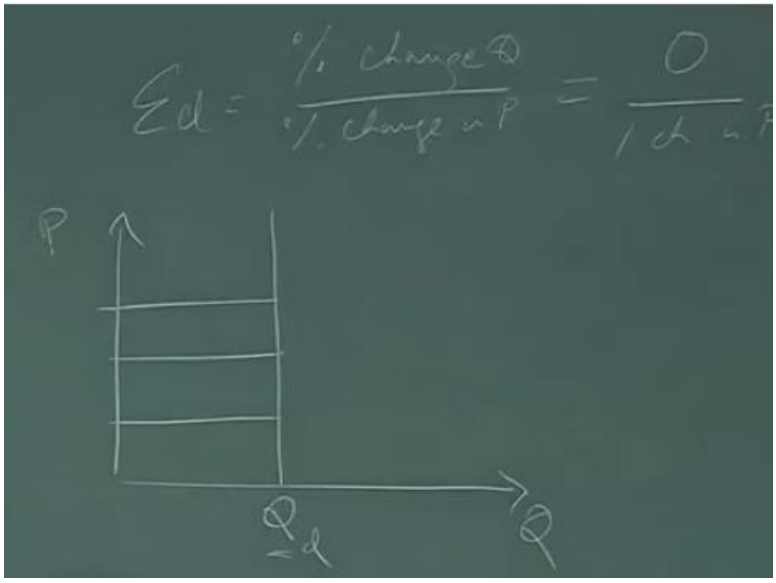

So perfectly inelastic demand curve is where perfectly inelastic demand curve basically shows that percentage change in by percentage change in P is equal to 0 by percentage change in P. So there is no change in quantity no matter what the price is. So what does the perfectly inelastic demand curve look like? It looks like this. It is a vertical demand curve.

It is a so quantity does not change. Quantity demanded does not change no matter what the prices are. So can one imagine such a demand curve in the market? Probably no. Probably there is no perfectly inelastic demand curve in the market but one example that comes to mind is say for example at some point of time when there is too much pollution in the air and there are producers or suppliers of clean fresh air.

So they are going to there is a market for air and the air that you breathe in you have to pay a price for it. So are you going to breathe more air because the price is less or are you going to breathe in less air because the price is more? No. You are going to breathe in the exactly same amount of air no matter what the price is. So this could be a example of a perfectly inelastic demand curve okay.

So next is a perfectly elastic demand curve. Perfectly elasticity demand curve means that change in quantity is infinite if there is a little bit of change in price or on the other hand that price does not change. It someone can look at it in the opposite way that no matter what the people are willing to consume price does not change in the market. So perfectly elasticity demand curve is little bit of change in price in the market your demand is going to change infinitely.

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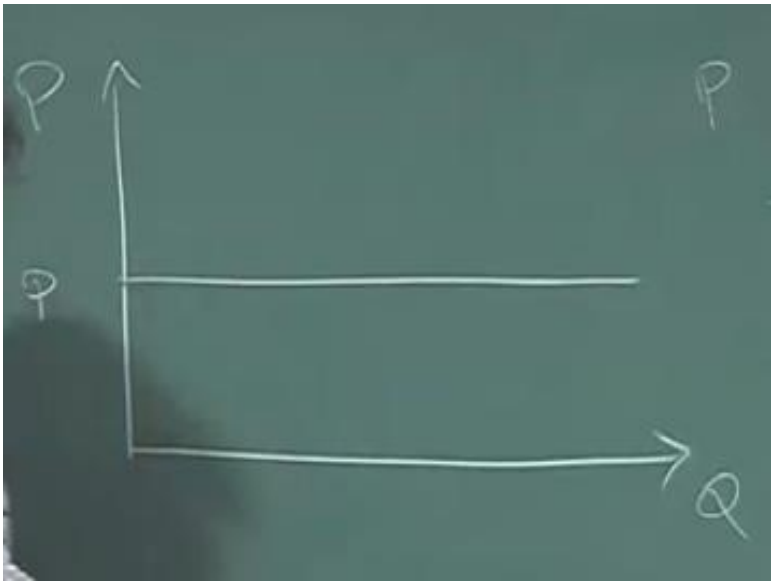

So a perfectly elasticity demand curve is just the opposite of the perfectly inelastic demand curve and it looks like this. So it looks like this. So at this price infinite amount of quantity is sold in the market can be sold in the market and there is no price change. Or in other words if the price changes a little bit also the if the price changes little bit also and people are consuming more they completely there is a if say for example price falls then every there is the quantity increase in quantity in the market that will be demanded is going to increase infinitely and if price increases everyone is going to go out of the market so it is 0 by (()) (21:16).

So it is basically the quantity that is demanded in the market basically falls to 0 or there is infinite reduction in quantity. So what is a so before I go to the next so what is an example of this kind of demand curve?

Again this kind of demand curve is not really again not a very it is more of a theoretical concept than a real concept but we introduced a concept of perfect competition in the previous class, in the previous week and if you may remember we discussed that there are plenty of buyers and sellers or infinite number of buyers and sellers in the market and they are not price they are not price makers. They do not decide what the price is and they are not going to decide if they can increase or decrease the price and this price is basically what has been determined in the market.

So if any seller goes into a market like that a perfectly competitive market he goes there and decides that I am going to sell my product here the kind of demand curve that he is facing in a perfectly competitive market is basically a perfectly elasticity demand curve. He cannot change

the price. He cannot change the price but he can sell as much as he wants because he sees that this is the amount that people are willing to buy at this given price.

So let me give you a little explain a little more. See imagine that a it is a huge agricultural products are basically come as close to perfectly competitive market as possible and imagine that it is a local mandi that we have seen the all the agricultural wholesale happens in those mandis and say someone is selling spinach and the rate decided in that market goes by the supplier, there are whole lot of farmers who are coming to the market to sell spinach and the demand and supply in the market that determines that this is the price of spinach say 10 Rs per bundle.

So now if any seller goes into the market it is a perfectly competitive market which means that in that mandi there are whole lot of buyers and if he offers a price which is less than P it is not possible to meet all the demand because if it is less than 10 the entire infinite amount of people in the buyers in the market will rush to him and if he sells a if he charges a higher price he is not going to be able to sell anything.

So basically he sticks to P and he can sell as much as he wants. So this is the inelastic the perfectly elasticity demand curve that a producer in a perfectly competitive market faces. We will be doing more of this when we talk about perfect competition so right now this is you can just consider this as an example and probably if it is not too clear right now it will be clearer when we talk about perfect competition in a later class.

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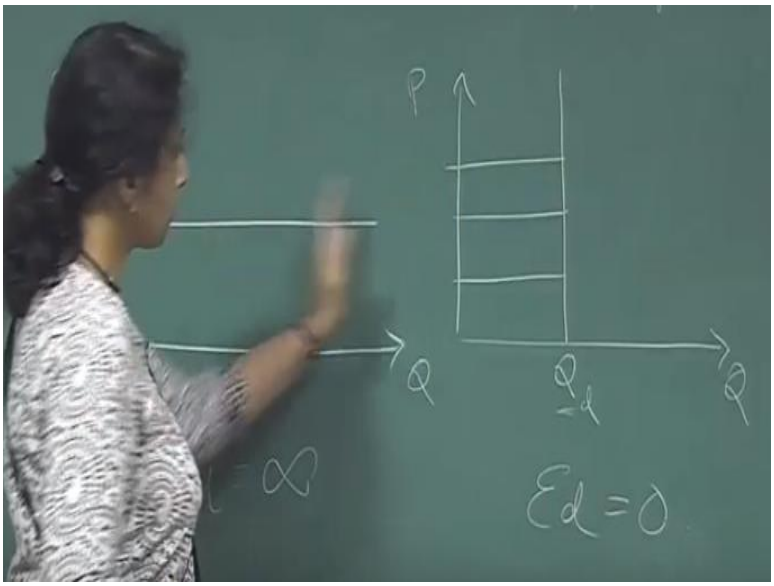

So elasticity in this case elasticity in this case is 0, elasticity in this case is infinite. So and we have talked about and anything in between these 2 is inelastic demand curve. Elastic demand curve we have seen that if it is a steep slope it is inelastic curve. If it is a if it has a flat slope it is a elasticity demand curve and this is, a special case of elasticity is the unit elasticity of demand which is just has one particular has a one specific case it is worth a mention.

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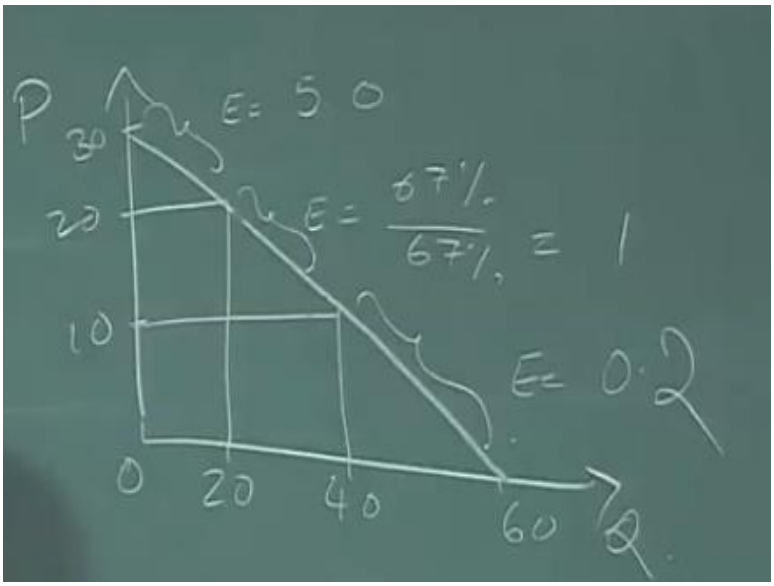

Say for example unit elasticity of demand is not something which is hugely important or interesting since it is a special case of elasticity of demand we are including it here. I am showing that say 20, 40, 60. Say this is the demand curve and 20, 40. So now elasticity what is the elasticity in this region when price drops from 30 to 20?

The elasticity in this region is 5.0. The elasticity in this region is 67 % by 67 % when price falls from 20 to 10 and quantity increases from 20 to 40 and this is equal to 1. So this region the is of interest because in this region elasticity is 1. Basically the same percentage change in price is going to lead to same percentage change in quantity and what is the elasticity in this region at a low price, it is 40 % by 200 % which is equal to 0.2.

So this is also illustration of something I said earlier that if you are higher up on the demand curve or where the price is too high your elasticity is probably too high. You are more sensitive to price changes and if you are in the lower part of the demand curve where price is low you are less sensitive to price changes and elasticity is low. So although the slope of a linear demand curve is constant its elasticity varies at different points of the curve.

So this is a perfect example. One should not believe that one should not mistake that since the slope of the demand curve is same every same your elasticity is going to be the same everywhere. No, that is not the case. So that ends our discussion on elasticity of demand and in the next module we are going to talk about elasticity of supply and the determinants of elasticity of supply etc. Thank you.