Conservation Economics
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Module 6
Markets: Places where Economics works
Lecture 1
Demand and supply

Namaste! Today, we begin a new module which is Markets, Places where Economics works. This module we will have three lectures - demand and supply, elasticity, and government policy. So, let us begin with Demand and supply.

A market is defined as a group of buyers and sellers of a particular good or service. So, it is a group of buyers and sellers. It is not just a single buyer and a single seller; it is a group of buyers and sellers. You cannot have a market with only buyers, or you cannot have a market with only sellers.

It has to be a market of or a group of buyers together with the sellers of a particular good or service which means that there can be different markets for different goods and services. So, for instance, we can have a market for food grains, we can have a market for goods, we can have a market for selling and buying stocks and so on. So, it is a group of buyers and sellers of a particular good or service.

Now, buyers determine the demand for a product and sellers determine the supply for the product. So, buyers are those who are asking for the product, they want to purchase these products. So, they create a demand in the market. So, the more the number of buyers, the greater will be the demand. Similarly, the sellers determine the supply in the market because the sellers are the suppliers of the good or service.

If there are more sellers or if each seller decides that your need is going to supply more amounts of these goods and services, then the supply in the market will go up. So, buyers determine the demand for a product and sellers determine the supply for the product.

And there are different kinds of markets. You can have an organized market such as the market for a food grain. So, in the case of an organized market, different buyers and sellers come to a place and they play by certain rules to sell their products. In a number of these organized markets, the buying and selling of goods could be through the use of auctions or through certain other institutional mechanisms. So, this is an organized market.

On the other hand, you can also have certain unorganized markets such as ice cream shops. Now, in the case of an ice cream shop, there is no fixed procedure for buying or selling. We do not have an auction, you just go to an ice cream shop, you pay the money and you get the ice cream. So, this is an unorganized market. We are not seeing any sort of an organization of different

buyers or different sellers who are coming together for meeting a specific purpose. So, this is an unorganized market. Similarly, the market may be competitive, or it may be uncompetitive.

A competitive market is defined as a market in which there are many buyers and many sellers, so that each has a negligible impact on the market price. A market in which there are many buyers and many sellers, so that each has a negligible impact on the market price. So, what we are referring to here is that in a competitive market there are several buyers, and so the buyer is unable to determine the market price.

Suppose, there were only a few buyers or let us say that there was only a single buyer. Now, the amount of money that this buyer is able and willing to spend in the market that would determine the price of the products, because if say the buyer goes to a market and says that I can only pay 100 rupees for this particular product.

Now, in that case, there is no way in which any seller would be able to sell it for more than 100 rupees because there is only a single buyer. Now, similarly, if there is a single seller, in that case the rate at which the seller is ready to sell that would be the market price.

But, in the case of a competitive market, we have many buyers and we have many sellers, so that any one buyer or seller is unable to determine the market price. So, for instance, if our buyer is there and he is ready to pay say 100 rupees or say 1 kg of price; and if there is another buyer who is ready to pay 105 rupees. So, in this case, the buyer who was ready to pay 100 rupees, he is not able to change the market price.

Similarly, if you have a number of sellers, the seller who sells at the lowest price would be determining the market price, but other sellers will not be determining the market price. So, in a competitive market, the buyer who pays the largest price at the seller who sells at the lowest price determines what would be the market price. Any other buyer or seller is unable to determine the market price, because they do not have the power to change the market prices or to increase the market prices.

Other characteristics of perfectly competitive markets include things such as goods that are offered for sale are exactly the same. Which means that if you have, say a market for food grains, and there is one seller who is selling a good quality food grain, and there is another seller or let us say all the other sellers are selling a bad quality food grain.

In that case, the seller who is selling the good quality food grain because he is the only one who is selling the good quality food grain, he would be able to increase the market prices.

But, if you have goods that are uniform, so every seller has the same goods of the same quality, then we would say that the market is competitive. If there is a variation in the quality of the goods that are being bought or sold in the market, then we will say that this is not a perfectly competitive market.

It is still a competitive market because you have many buyers and sellers, but it is not perfectly competitive because there could be certain buyers or sellers who value the quality of the goods. And in that case, they would be influencing the market prices. So, there is a slight influence on market prices. And so if the goods are not uniform, we will say that this is not a perfectly competitive market.

Then there are so many buyers and sellers that no single buyer or seller has any influence over

the market price; and all buyers and sellers are price takers. Now, what do we mean by price takers? It means that at the market price the buyers can buy all they want and the sellers can sell all they want.

What we are saying here is that there are many buyers and sellers. No buyer or seller has any influence over the market price. And once the market price has been determined by the behavior of so many buyers and sellers, then at the market price the seller should be able to sell as much of the good as he wants to, and the buyer should be able to buy as much of the good as he wants to.

That is if the buyer has to purchase 10 units of something, then the 11th unit will also cost the same as the 10th unit, the 10th unit will also cost the same as the 11th unit and so on. So, once the market price has been fixed because of the actions of buyers and sellers, then everybody is a price taker, the buyer as well as the seller. The buyer will or can get the goods at the market price, and he can get as much amount of goods as he wants from the market because there are so many buyers and sellers.

And similarly the seller can sell as much amount of goods as he wants to sell at the market price. Then there is a perfect information transfer regarding prices. It means that if there is a market, there are so many different buyers and sellers; they are selling goods at different prices.

So, every buyer and every seller should know who is buying and selling at what price. What it means is that, suppose in the market you have 100 sellers, and say each of these sellers is selling the rice at the rate of 80 to 150 rupees a kg.

Now, if as a buyer, I enter into this market I should have perfect information about who is selling at what rate, so that I am able to buy at the lowest price. Similarly, if I am a seller I should know who is buying at what price, so that I can sell my products to that person who is buying at the largest price. And so when you have a perfect transfer of information, then there will be an equilibrium.

So, the seller will be selling the goods to the buyer who is paying the highest price, and the buyer is buying the goods from the seller who is selling at the lowest price. And this price which is the highest that the buyer is willing to pay, and the lowest that the seller is going to sell at this will be the market price. So, for a perfectly competitive market, there should be a perfect flow of information about the quality and the price of goods that are being bought and sold.

The market should have well defined property rights, which means that the only way in which you can buy or sell a good is through the market. Nobody can go to a seller and say snatch the goods because if the seller is having this idea that my goods can be stolen, then he or she will not be providing such a huge amount of goods to the market as he would have provided if there are perfect property rights.

Similarly, if there is a buyer, he should have confidence that there are property rights and his property rights are going to be respected. So, the working of the market requires well-defined property rights and this is a characteristic of a perfectly competitive market.

Then there should be a free entry and exit end to end from the market. What that means, is if there is a seller and the seller comes to know that say rice is being sold at 100 rupees a kg. Now, if this seller thinks that, oh, I can sell my rice at 99 rupees a kg, I can sell it for less than what the

current market price is, then this seller should be able to enter into the market.

There should not be any restriction that only the sellers that are there in the market. They will be the only ones doing the same things. So, any seller should have the opportunity to freely enter the market.

Similarly, if there is a seller who finds out that I cannot sell below say 105 rupees, this seller should have the option of exiting the market. So, he can take his goods and move out of the market. Similarly, the buyer should be able to enter and exit freely. So, it means that there is no restriction on the number of buyers and sellers. And so anybody can enter the market or anybody can exit from the market. So, this is also another characteristic of a perfectly competitive market.

Then it assumes that there is rationality both the buyers and the sellers are trying to maximize their utility. Now, we have seen before as well that economics assumes that everybody is a rational decision maker. And in the case of a perfectly competitive market, then we assume that everybody is a rational thinker, the buyers as well as the sellers. Now, both are acting to maximize their utility, they are trying to maximize their welfare.

And then there are zero transaction costs which means that if the market is large in size, I as a buyer should not have a thought that oh that seller is selling at a great distance, how am I going to go to that place. So, it says that there is zero transaction cost, there is no cost for a buyer to move from one seller to another seller. He does not have to pay money to go from one seller to another seller; he does not have to pay time to go from one seller to another seller.

And similarly the sellers also do not have any transaction cost. So, they can sell their goods to the buyer who is willing to pay the maximum amount of money. So, this means that there is no transaction cost.

Now, why are we making all these assumptions? This is because a perfectly competitive market is a theoretical concept. There is no market in the world that is perfectly competitive, because in any market there are transaction costs, in any market there are a fixed number of buyers and sellers. And in a number of markets, there is no free entry and exit. So, a number of these assumptions are violated.

The goods that are offered for sale, they may be different. There is a branding of goods in most of the markets. So, people may not consider one brand to be equivalent to another brand. Not everybody is a price taker. People try to negotiate, people try to haggle, people try to bargain.

We do not have a perfect information transfer regarding prices. So, it is possible that once we have bought your goods, you come to know that there is another seller who was selling at a lower rate. There is no perfect information transfer in the real world markets.

The property rights may or may not be well. So, well-defined free entry and exit into and from the market is not there in a number of cases. And also in a number of cases, people do not buy and sell rationally. A very good example is that in is that some people may try to buy from people who belong to their own community, or who belong to their own race, or people who are talking in the same talk.

Similarly, a seller might try to differentiate between different buyers. So, in these cases, the buyers and sellers are not taking a rational decision. In a number of cases, people are so overwhelmed by advertisements that they may buy a good which may be of an inferior quality or

at a higher price just because they have been exposed to an advertisement.

Now, in a real world market these assumptions do not hold completely, which is why we are making this theoretical concept of a perfectly competitive market. And we will use this model of a perfectly competitive market to analyze what is going to be the ideal situation.

And from there, we can make a judgment about how good or bad the real situation is. So, we are talking about an ideal, perfectly competitive market. Now, in the market, there is a demand for products and there is a supply for products. So, we define quantity demanded as the amount of a good that buyers are willing and able to purchase. The quantity demanded is the amount of a good, how many units of the good are there that the buyers are willing to purchase and they are able to purchase.

Now, they should be both willing and able. It is not willing or able because there are certain buyers who want to buy a product, but they do not have money. So, in that case, their willingness does not count in the quantity that is demanded in the market.

Similarly, there could be buyers who are able to purchase the good, but they are not willing to purchase the good, say at this price. So, in that case, we will not include them in the quantity that is demanded of the good.

Then we define the law of demand. The law of demand is the claim that, other things being equal, the quantity demanded of a good falls when the price of the good rises. It is the claim that other things being equal. So, here again we are making an assumption that everything else being the same.

We are only changing one thing and that is the price of the goods; everything else remains the same, the quality of goods remains the same, the social structure that is there in the society remains the same, the level of advertisement remains the same, the transaction cost remains the same. If everything else remains the same, then if you change the price of a good what will happen to the quantity demanded?

So, here what we are saying is that suppose in a market, mangoes are available for say 30 rupees a kg. If the price goes up, if the price is down 40 rupees a kg, will people still be demanding the same amount of mangoes or will the demand change? So, the law of demand says that other things being equal the quantity demanded of a good falls or will reduce when the price of good rises. So, there is an inverse correlation. If the price increases, the quantity demanded falls.

And demand curve is a graph of this relationship between the price of a good at the quantity that is demanded. So, this is how a demand curve looks like. On the y-axis, we have the price of the good; on the x-axis, we have the quantity that is demanded in the good. And this green line shows us the demand curve. So, it is telling us that as the price increases, so when the price increases, we are moving on the y-axis from bottom to upwards.

If we take say two points - we take this point and we take this point, now at this point, so it is, draw these lines. So, what that law of demand tells us is that as the price increases, we are talking about these two prices. So, this is the price P1 and here you have the price P2. Now, as the price has increased from P1 to P2, what happens to the demand or let us say the quantity demanded.

At price P1, the quantity demanded was this much Q1; and at price P2, the quantity that is demanded is Q2. Now, the law of demand says that as the price increases from P1 to P2, the

quantity demanded reduces from Q1 to Q2. So, there is an inverse correlation. This graph goes from top left to bottom right. So, this is the law of demand. Other things being equal the quantity demanded of a good falls when the price of good rises. This is the demand - the law of demand.

And we can also make out a demand schedule. A demand schedule is a table that shows the relationship between the price of a good and the quantity demanded. So, we are not making a graph, we are making the table. Then we will say that it is a demand schedule.

This is an example of a demand schedule. We are talking about the price of a cake and the number of cakes that are demanded by an individual. Now, suppose there is a market for cake, you go to this market, and you decide that the value that a cake is going to provide to you is equal to 80 rupees which means that the value of the cake and your rice is 80 rupees.

Will you be paying anything more than 80 rupees? The answer is no, because you are doing rational thinking. But if the same cake is available to you for say 30 rupees, in that case you will not just take one cake, probably you will have more than a cake because you are trying to maximize your utility. So, in this case, the buyer will think that the value of the cake is 80 rupees; the price of the cake is 30 rupees. So, let me have more and more of this cake.

But then the demand or the quantity that is demanded will not be infinite. Why, because every buyer has limited funds, and the money that the buyer has could be used to purchase say this cake or it could be used to purchase something else as well. Now, because of that the quantity that is demanded will not be infinite if the value of the cake is greater than the price, then there will be a particular limit. But here the cheaper that you can get the cake that has a higher value in your eyes the more and more quantity you will be deriving or you will be willing to purchase. So, this is the demand schedule of an individual.

And when we plot this demand schedule, we get a demand curve. So, this demand curve is telling us here again you have the price of the cake and the quantity that is demanded. And you see an inverse correlation. If the price is less, the quantity demanded is more; if the price is more, the quantity demanded is less.

Now, in the market and especially in the competitive market, there is not just one buyer there are several buyers. And the market demand schedule is the sum of the individual demand schedules. So, if we say that the price of the cake is here in this column and the number of cakes that are demanded by 2 individuals - individual A and B are given like this. So, at a price of 0 rupees, individual A is demanding 16 cakes, individual B is demanding 6 cakes. So, the market demand will be the sum of both of these, which is 22 cakes.

When the price increases to 10 rupees, for A the quantity demanded reduces from 16 to 14; for B, it reduces from 6 to 5. And the total quantity demanded is now 14 plus 5 is 19. If the price increases further to 20 rupees, the quantity demanded reduces further. And here the market demand is 12 plus 4 is 16. And so we can figure out the quantity that is demanded in the market by adding up the quantity demanded by different buyers that are there in the market.

That is to say if this is the price, and this is the number of cakes that are demanded. If this is the curve for A, this is the curve for B, then this is the market demand curve by adding A and B.

Now, when we talk about the demand curve, there can be shifts in the demand curve. And we say that when the curve shifts to the right, then there is an increase in the demand. And when the

curve shifts to the left, there is a decrease in demand. Now, what does that mean?

If the demand has increased, it would mean that at any price let us say at price P, so at any price P, the quantity that is demanded has increased if there is an increase in demand. So, earlier the quantity that was demanded was this Q0. The quantity that is demanded now is this Q1. So, if there is an increase in demand, then more will be the quantity demanded at any price.

In place of this price, if we say shift to another price, if we talk about the price here, so if this is P, this is Q0, and this is Q1. So, the quantity that is demanded at this price also has increased. You take any price and when there is an increase in demand, the quantity demanded will increase. And we represent it on the curve as the curve shifts to the right.

On the other hand, in the case of a decrease in demand, the quantity demanded at any price reduces, which is to say that earlier the price was Q0, and earlier the quantity that was demanded was Q0. Now, the quantity demanded is Q2, and Q2 is less than Q0. So, this is showing a decrease in the demand. So, the quantity demanded at any price reduces or the curve shifts to the left.

Now, it is important to remember here that there are two kinds of movements. One is the shift of the curve either to the right or to the left which is known as a shift in the demand curve. And the second thing is movement along the curve. So, if we talk about this green curve, if the price changes, then the quantity that is demanded also changes. And the price increases, so you can have a situation that you have, you have this point, and you have this point.

Now, in the case of this green curve, if we see that the price has increased, so we are moving from this point to this point, the quantity that is demanded decreases. So, the quantity demanded here is more, and the quantity demanded at this point is less. Now, this is known as a movement along the demand curve. But when the demand curve itself shifts when we say that there is a shift in the demand curve.

Now, what can cause such shifts? Things include changes in the income. So, if there is a normal good and you have an increased income, then you will demand or you will demand more quantity of the good. A normal good is defined as a good for which other things being equal and increase in income leads to an increase in demand such as ice cream. So, what we are saying here is that if your income is 10,000 rupees a month and you are demanding say 3 ice creams in a month. If your income increases, so in place of earning 10,000 rupees a month - you are now earning 30,000 rupees a month, then the number of ice creams that you will demand will also increase. In that case, we say that it is a normal good.

On the other hand, there could be certain goods that are known as inferior goods. An inferior good is defined as a good for which other things being equal, and increase in income leads to a decrease in demand such as coarse grains. So, what we are saying here is that when we were earning 10,000 rupees a month, suppose you were buying 30 kgs of coarse grains, say millets in a month.

Now, if your income increases in place of earning 10,000 rupees, you are now earning 50,000 rupees. Will you be eating more and more of these coarse grains or will you shift to finer grains? The answer is you will shift to finer grains. Probably, you will shift your food habits to incorporate more milk or more fruits or more meat. In that case the quantity of the coarse grains

that you were demanding will go down. So, this is an inferior good, a good for which other things being equal an increase in income leads to a decrease in demand such as coarse grains.

Changes in income will lead to changes in the quantity that is demanded at any price. Now, when we are talking about the normal good or the inferior good, we are only talking about changes in income which is leading to a change in the demand. Now, this change in the demand will be at any price.

Suppose earlier the ice cream was available at 10 rupees for an ice cream, you start earning more. So, you demand more ice cream at 10 rupees. Suppose, the price of the ice cream was 20 rupees, here again if you have an increased income you will ask for more ice cream. It does not matter what the price of the ice cream is.

So, other things being equal an increase in income, leads to an increased demand at any price, so this will shift the demand curve. So, if people have more income, the demand curve will shift towards the right. If people have a reduced income, the demand curve will shift towards the left for normal goods.

Other things that shift the demand curve is the price of the related goods in which case we talk about substitutes and compliments. Now, in the case of substitutes, it is two goods for which an increase in the price of one leads to an increase in the demand for the other such as rice and wheat. So, rice and wheat are substitutes, because they are both staple grains.

Now, if there is a family that eats rice as well as wheat, and if there is an increase in the price of rice - so rice increases from say 80 rupees a kg to 120 rupees of kg, and there is no change in the price of B. So, what would most people do? Most people would try to reduce their rice consumption, and would try to increase their wheat consumption because for the same amount of money, for the same income, you have to meet a good with the amount of grains that your family needs.

So, if the price of rice has increased, you will eat more wheat. If the price of rice decreases, in that case you will probably eat less wheat and eat more rice. So, the price of related goods may change the demand or the quantity that is demanded, that is there is no change in the price of wheat, but because the price of rice is changing, so that will lead to a shift in the demand curve.

Other goods are things that are known as complements. In the case of compliments, it is two goods for which an increase in the price of one leads to a decrease in the demand for another such as coffee powder and sugar. So, if there is an increase in the price of coffee powder, now coffee powder and sugar are used together when you make coffee.

So, if there is an increase in the price of coffee powder, so in that case your coffee becomes more expensive, and you will try to reduce the amount of coffee that you are drinking. And probably shift to something else such as tea or such as cola. Now, in this case, the price of coffee powder has increased, and so you have shifted to say drinking cold drinks.

Now, in the earlier case, you were having more amount of coffee and for that you were demanding more amount of sugar. Now that you are drinking less coffee, you will demand less quantity of sugar. So, an increase in the price of coffee is leading to a decrease in the demand for sugar because coffee powder and sugar are complements. A change in the price of related goods will lead to a shift in the demand curve.

Then taste, such as an increased demand for ice cream with the onset of summer, because with the onset of summer more and more people want to have ice creams. So, nothing else is changing, but the demand for ice cream will increase in the summer season. So, the curve will shift towards the right.

Other things include expectations. If taxes on petrol are to rise from next month, the demand in this month will increase because people expect that in the next month because of increased taxes we will have to pay more for petrol. So, why not fill our tanks to the brim. So, the demand in this month, in the current month, will increase if people are expecting the prices to go up.

Similarly, if you expect that the price of any product is going to increase in the future, you will try to have or hold more and more of that product. If the price is going to reduce in future, then probably you will cut down on the amount of that good that you are buying now.

For instance, when the price of real estate is going down, less and less people want to buy a home, because they think that if we do not buy the home now if we wait for a few more months, we will be able to get this home at a cheaper rate at a lower price. So, expectations can also lead to changes in the demand curve, and also the number of buyers.

So, the more the number of buyers in a market, the more is the demand. And this especially holds true when there is an economy that is opening up. So, earlier in our country when our market was not an open market then only the buyers in India were able to to purchase the goods that were being produced. But these days our goods have a market everywhere they have a demand everywhere.

Even a person in the United States might want to purchase something that was manufactured in India. So, because the number of buyers have gone up, that will lead to a shift in the demand curve because more and more quantity is being demanded because there are more and more buyers at any price. So, these are shifts in the demand curve.

Now, similarly we can talk about supply. The quantity supplied is the amount of a good that sellers are willing and able to sell. The sellers should be willing to sell at that price, and the sellers should be able to sell that is they must be having the good or they must be in a position to to make the good.

Law of supply is the claim that other things being equal, the quantity supplied of a good rises when the price of the good rises. Now, suppose there is a seller of mangoes, if the price of mango increases, then this seller will be ready to supply more quantity of mango because he wants to maximize his profit.

When the price increases, he will supply more mangos; when the price decreases, then probably he will supply less mangos. This is the law of supply, other things being equal, the quantity supplied of a good increases or rises when the price of good rises. And we can represent it through a supply curve which is a graph of the relationship between the price of a good and the quantity that is supplied of the good.

This is the supply curve. When the price increases, so you are moving from say this point to this point; so when the price increases the quantity that is supplied also increases. So, this is the law of supply. We can represent the law of supply through the supply curve or through the supply schedule. A supply schedule is a table that shows the relationship between the price of a good

and the quantity that is supplied.

This is a supply schedule, the price of a cake and the number of cakes that are supplied. If the price of a cake is 0 rupees, then probably no seller will be supplying any cake because it will only result in a loss because there is a cost involved in making the cake. If the price of 1 cake is 10 rupees, then again if the cost of manufacturing is greater than or equal to 10 rupees, then no seller will be able to or able and willing to supply the cake.

If the price increases to 20 rupees, probably, a seller is ready to supply 2 cakes. If the price increases further to 30 rupees, the seller will supply more cakes because now the seller is getting an incentive to increase his profit by making more and more cakes. If the price of 1 cake increases to 80 rupees, the seller will be ready to supply 14 cakes.

Now, here again if the cost of making the cake is 10 rupees, then at a cost at a price that is greater than the cost of manufacturing say at 80 rupees, the number of cakes that are supplied by the seller will not be infinite because there is an opportunity cost involved. So, even though by supplying more and more cakes, the seller can maximize his profit. So, the number of cakes that he supplies at any price will not go to infinity.

And we can use this supply schedule to make a supply curve. So, here it is showing that as the price of the cake increases, the number of cakes that are supplied also increases. And in a market as we have seen before, if there are multiple suppliers, then the total supply is equal to the supply of cakes by each seller. So, at 0 rupees, seller 1 is going to supply 0 cakes; seller 2 is going to supply 0 cakes.

So, the total market supply is 0. At 10 rupees, again 0, 0, that is 0. At 20 rupees, individual A or seller A is ready to supply 2 cakes. Individual B thinks that I still cannot supply anything. So, here the market supply is 2 plus 0 is 2. At thirty rupees, it is 4 plus 1 which is 5. At 40 rupees, it is 6 plus 2 is 8.

Here we are observing that at any price if you take the sum of the cakes that are being supplied by each seller, you will get the amount of cake that is being supplied to the market.

Or we can also say that if the red curve is showing the supply curve of seller A, the blue curve is showing the supply curve of cell B. Then this green curve which is the sum of A and B is telling us the supply curve of the market.

And as before we can talk about movement along the supply curve and shift in the supply curve. So, in this case, we are moving along the supply curve. But if there is an increase in supply, it would mean that at any price P, the quantity that is supplied would increase.

So, we will show it by means of a curve that has shifted to the right. The blue curve is showing an increased supply as compared to the green curve. Similarly, if there is a decrease in supply, it will mean that less quantity is supplied at any price. And this would be represented by a curve shifting to the left. So, this is a shift in the supply curve.

Now, what can cause such shifts? We can have changes in the input prices. So, in the making of a cake, you require flour, you require sugar. And if the price of flour changes or if the price of sugar changes, then each seller will be more or less able to supply the cakes to the market at any given price point. That would lead to a shift in the supply curve. Because earlier when the prices were low, one seller was ready to supply say 2 cakes for 10 rupees.

Now, the price of sugar has gone up, the price of flour has gone up, and it is now taking him 12 rupees to manufacture a cake. So, in that case the number of cakes that the seller is willing to supply or is able to supply to the market at 10 rupees will become 0. So, in place of supplying 2 cakes, he is now supplying 0 cakes.

It is telling us that at this price point of 10 rupees, the number of cakes that are being supplied to the market have gone down. And so we will see a shift to the left in the case of the supply curve.

Similarly, if the cost of inputs goes down that is if it has become cheaper to purchase flour and to purchase sugar, then probably each seller will be able to supply more of the cake at any given price point, and so we will see a shift in the supply curve towards the right which will show us an increase in the supply. So, the shifts in the supply curve can be caused by changes in the input prices or because of changes in technology which also changes the cost of producing a cake.

Also changes in expectations can lead to changes in the supply curve. So, if the price of sugar is expected to rise from next month, the seller may choose to stock the sugar and not supply it. So, it is telling us that similar to the case of an increased taxation in petrol - if next month the price of petrol is going to go up, then each person would want to stock the petrol and so the demand for petrol will go up.

Now, what will happen to the supply? If you think about petrol from the seller's point of view the seller would say that ok next month the price of petrol is going to rise, so and I have this stock of petrol, why should I sell it for a lower price, why should I not hold this petrol and sell it in the next month. So, because of an expectation of change in price, there can be a shift in the supply.

Also the number of sellers - so, if more sellers are available in a market, the supply curve will shift towards the right because now more and more quantities of goods will be available to be sold in the market because there are more sellers. So, these are the reasons for shifts in the supply curve.

Now, in a market, these demand and supply curves will meet at a point. They will intersect each other. So, if we show that this is the demand curve, this is the supply curve, there will be a certain point at which both of these curves will intersect each other.

And when that happens we will say that there is an equilibrium. Equilibrium is the situation in which the market price has reached the level at which the quantity supplied equals the quantity demanded. It is the situation at which the market price has reached the level which means that at this price the quantity that is supplied, and the quantity that is demanded is one and the same.

If we look at any other price, if we say look at this price, so at this price the quantity that is demanded is this much and the quantity that is supplied is this much. So, there is a difference between the quantity that is demanded and the quantity that is supplied.

If the price goes down, so in that case the quantity that is demanded will increase, because remember when the prices go down the quantity that is demanded goes up, whereas, because the price has gone down the quantity that is supplied will also go down because of the law of supply. So, now you have less of a difference between the quantity that is demanded and the quantity that is supplied, but still there is a difference.

But when the price goes down and reaches this point, so here the quantity that is demanded is this, and the quantity that is supplied is also this. So, now, this is showing us an equilibrium. So,

an equilibrium is the state where the price is such that the quantity that is demanded is equal to the quantity that is supplied.

If the price goes down even further, so if the price is less the quantity that is demanded will increase, and the quantity that is supplied will decrease. So, here again we will see that there is a disequilibrium. There is a difference between the quantity that is demanded which is the point where this curve of price intersects with the demand curve - this point. This is the quantity that is demanded.

And this is the quantity that is supplied to the point where this price curve intersects with the supply curve. So, there is a difference between the quantity that is demanded and the quantity that is supplied.

But at this price point this quantity that is demanded is the point where this line the the price line intersects the demand curve which is this point. And the quantity that is supplied is the point where the price curve intersects with the supply curve which is also here because the demand and supply curves are intersecting each other. So, this is known as equilibrium, a situation in which the market price has reached the level at which the quantity that is supplied is equal to the quantity that is demanded.

Now, at this price, we will say that it is the equilibrium price, the price that balances the quantity supplied and the quantity demanded. And the quantity that is demanded or supplied at this price point will be known as the equilibrium quantity. So, equilibrium quantity is the quantity supplied and the quantity demanded at the equilibrium price. And both of these are equal to the same.

And this brings us to the law of supply and demand. The claim that the price of any good exists to bring the quantity supplied and the quantity demanded for that good into balance. So, what is the law of supply and demand? It is the claim that the price of any good adjusts. So, when we say that it is adjusting, we mean that this price goes up and down, but then it ultimately reaches to this point.

So, it adjusts to bring the quantity supplied and the quantity demanded for that good into balance. And at that price known as the equilibrium price, the quantity demanded is equal to the quantity supplied is equal to the equilibrium quantity.

Now, how do markets respond to changes in the demand and supply? So, there is an increase in demand, what happens? Now, what we are saying here is that in place of say a market with just 100 buyers, now we have 1000 buyers in the market and because the number of buyers has gone up.

So, the quantity that is demanded has also increased at any particular price point. So, this can be represented by a shift in the demand curve. Now, the supply remains the same, but the demand has changed. So, the demand curve has shifted to the right.

Which is what we can represent like this. So, earlier the green line - this one is showing us the demand curve, this is the supply curve. Now, because of an increase in demand, there is a shift in the demand curve. So, the demand curve from here shifts to this red line. An increase in demand is shown by the demand curve shifting to the right.

Now, what happens? Earlier the demand and the supply curve were intersecting at this point. Now, the demand and the supply curve are intersecting at this point. So, this is the earlier

equilibrium, and this is the new equilibrium because of the change in demand.
What happens to the price and what happens to the quantity that is supplied? Earlier the price was this one. So, this is the earlier equilibrium price. Now, because of a shift in the demand curve, the new equilibrium price is this much. So, the price has gone up which is expected because now more and more people are demanding the same goods. So, more is the demand, more is the price. Also earlier the quantity that was supplied was this much. Now, the quantity that is demanded and supplied is this much. So, there is an increase in the quantity that is demanded or supplied.
An increase in demand with no change in the supply will increase the price and it will increase the quantity that is demanded or supplied. So, an increased demand leads to more price and more sales.
What happens because of a decrease in supply? So, a decrease in supply will be shown by a supply curve that is shifting to the left. So, earlier this was the demand curve, and this was the supply curve. And this was the earlier equilibrium. Now, there is a decreased supply. So, the supply curve has shifted to the left. And we will now have this red color supply curve.
The demand has remained the same. And this point is showing us the new equilibrium. Now, what are the impacts in the market? Earlier the equilibrium price was this much, the new equilibrium price is this much. So, the price has gone up because there is a decreased supply in the market. So, decrease in supply will lead to more price.
What happens to the quantity that is demanded or supplied? Earlier the quantity demanded or supplied was this much, now it has reached this point. So, there is a decrease in the quantity that is demanded or supplied. So, a decrease in supply will lead to an increase in price, but a decrease in the quantity that is demanded or supplied means more price and less sales.
Now, what happens when there is an increased demand and there is a decreased supply? Now, in this case, we are saying that there is an increased demand plus a decreased supply. Now, an increase in demand leads to more price, a decreased supply leads to more price.
When both of these are acting together, we will have more price. Any increased demand led to more sales and decreased demand led to less sales. So, when both of these are acting together, then we may have more sales or less sales or the same sale.
Let us look at these. So, earlier the demand curve was this green line the supply curve was this green line. And this was the earlier equilibrium. Now, there is an increase in demand. So, the demand curve has shifted from here to here. So, the demand curve has shifted to the right, because there is an increased demand. The supply has reduced, and so the supply curve from this has shifted to this. So, there is a decrease in supply, and this is leading to this new equilibrium.
In this case, the earlier equilibrium price was this, the new equilibrium price was this. So, as was expected the prices increased, and in this case the earlier equilibrium quantity demanded or supplied was this, the new quantity is this. So, there is an increase in the quantity that is demanded or supplied, but it is also possible that when you have an increase in demand.
In this scenario, we are seeing that the main curve, the green demand curve, has shifted to the right. The green supply curve has shifted to the left. And in this case, the earlier equilibrium was here, the new equilibrium is here. Earlier equilibrium price was this; the new equilibrium price is

this.

Here again the price or the equilibrium price has gone up, but the earlier quantity demanded was this, the new quantity demanded is this. So, there is a decrease in the quantity that is demanding the supply of goods. So, it is possible in the case of an increased demand and a decreased supply at the same time. It is possible that the sales may increase or the sales may decrease, but in any case the price will go up.

We had seen in the 10 principles of economics that markets are usually a good way to organize economic activity. And in this case, we are observing that a very big benefit of a market is that it reaches into an equilibrium by itself. Now, in the case of a free market, in the case of a competitive market, there is no requirement of a government to state that this will be the price of mangoes, this will be the price of rice, this will be the price of dhal and so on.

The market will reach an equilibrium by itself through the working of the law of demand and supply. So, markets are a good way of organizing economic activity. And now we are analyzing how the markets work by using a theoretical formulation.

That is all for today. Thank you for your attention. Jai Hind!