Conservation Economics

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Module 6
Markets: Places where Economics works
Lecture 3
Government policy

Namaste! We move forward with our discussion on the working of markets and in this lecture, we will explore Government Policy. Now, we had seen in the 10 principles of economics that markets are usually a good way to organize economic activity. The question is what is so special about markets that makes them a good way of organizing economic activity when there are several things that markets do?

1, they permit the expression of free will which means that if I go to a market as a buyer, then nobody is compelling me to buy a certain product. If I find that there is a product say mangoes that are going to increase my welfare, I will purchase mangoes. If on the other hand, I feel that I should purchase apples, I purchase apples.

Nobody is there to tell me what is the quality that I should be buying? So, if I find mangoes and I find that they are not of a very good quality, I might not purchase them. There is no compulsion on me to buy something. So, it is an expression of free will. Now, because a market works on free will, it also permits the expression of a number of choices or freedom of expression.

What it means is that if in a market people want to purchase jeans, then more and more sellers would provide jeans into the market. If more and more people want to purchase suits, then probably more and more number of sellers would bring in suits. So, because there is nobody to do a moral policy in a market so, people are able to express themselves in a much better way. So, it permits the freedom of expression.

Thirdly, there is a fast movement of information. What it means is that suppose in place of a market, we were having the command economy. Now, in that case, there would have been a central planet to decide what good should be manufactured in what quantities, in what qualities, where they should be manufactured and for whom they should be manufactured.

So, there are all these questions of economics that would have to be decided by say a central planner. Now, in the case of a market, the prices provide this information. So, if the demand for something goes up, it will tell the market that this is a product that more and more people want and we have observed before that in the working of a market, if the demand increases without changes in the supply, then the price increases.

Now, this increase in the price will automatically provide information to the sellers that if they want to maximize their profits in that case, they should be bringing more and more of these goods, more and more of these products into the market and when that happens, when the supply side increases, the prices go down to the normal levels.

So, these prices act as a very quick movement of information, nobody needs to decide what or how much of any particular product should be manufactured, but the prices will give this information. So, prices because they work in the market, they permit a very fast movement of information.

They also permit automatic decision-making because in this case, people are making these decisions automatically, the central government does not have to tell the sellers that ok, the demand for such and such a product is increasing so, why do not you make more and more of these products. These decisions are being made automatically.

And because of all of these, what happens is that we have an increased welfare in the market, or we can also say that there is an increase efficiency because of all of these. So, the market is a very good mechanism to increase the welfare of people because they are doing things that they want to do, and we can make this assumption that people best know what is best for them.

So, the markets allow the expression of this information and because it does everything in a very efficient manner so, it is the way of maximizing the welfare. So, this is why, we say that markets are usually a good way to organize economic activity, but at the same time, the government can sometimes improve the market outcomes.

Now, why would we require governments to do the market outcomes? If everything is being done by the market in the most efficient manner, why should we do government at all? Now, the government is required because market has a few prerequisites for it to function properly. What are they? We have seen before that a market can only function if you have property rights.

So, the seller must know that the only way in which he or she can increase his or her property is by having more and more profit, by selling more and more of the goods. Now, if it was possible for people to just snatch these goods from somewhere else to snatch the money from somewhere else, then in that case probably, the market would fail to function because whether or not we have the market, you can always go and snatch the products.

So, the working of property rights is extremely crucial for the market to function. Another thing that we need is institutions. Now, if I feel that my property rights have been violated, what should I do? I require institutions such as the police or the judiciary to enforce the property rights.

So, not only should property rights exist, but at the same time, they should also be enforceable and thirdly, they should not be an externality because if there is an externality, then probably, the market will not be to the highest amount of social welfare. Now, externality as we have observed is the property or the phenomenon in which the actions of a doer have a bearing on the welfare of a bystander who has got nothing to do with that particular action.

Good examples include things such as pollution. So, a polluted by polluting the environment, he is maximizing his profits because he is not spending money to install a pollution controlling device, but this pollution is going to impact the health of so many different people.

So, if you permitted this sort of a phenomenon to go on, then probably you will have so many different industrialists just who would be polluting the environment to maximize their profits by reducing the cost of production that are involved, but at the cost of that health of so many different people. So, this is something which is not giving the highest welfare to the society, it is not giving the highest welfare to the people to the citizens.

Now, this is where the government needs to step in. The government needs to say that ok, you want to maximize your profit that is fine, but you are not going to do this at the cost of the health of other people. So, the government is required whenever there is an externality because the externality reduces the efficiency of the market; reduces the efficiency of the market by not permitting the maximum amount of benefit.

Similarly, in the case of positive externality, since it is education or health care of people. Now, it is possible that if a market is only working on the profit motive, then things such as health care of the masses might not get completely provided for. Now, health care of the society is an example of positive externality.

So, if somebody vaccinates himself or herself, he he or she is not protecting himself or herself but is also acting in a way to to stop the spread of infections through the whole of the society. Now, such things need to be incentivized. Now, who is going to incentivize them? The market is not going to incentivize, and which is why we need the working of governments.

Another thing where we require the risking of governments is where people have market power. Now, what is market power? Market power is the ability of one or a few number of buyers or sellers to influence the market prices. A very good example is a person in a village who owns a well and there is a drop. Now, this person can charge any amount of sum because he is the only one in the village who has a well.

Now, this person can influence the market prices. Now, this is known as market power. Now, in the case of a market which has certain players who are exhibiting market power, we will observe n number of things that reduce the benefit of people. So, for instance, we will start observing that there are certain people with market power who force people to work without paying them money or by paying them very small amounts of money.

So, for instance, in our country also, we had the system of begar. In begar, people used to force others to work for them without paying them anything. Now, in our country, the system of begar, it was abolished through the constitution. So, which is why we require the working of the government? If we did not have the government, probably begar would have continued.

Another example is employment of children. Now, children may not be in the best position to bargain for their rights and in a number of cases, we observe that children are exploited. Now, through much of the 18th and 19th centuries, we observed that industrialists were using children to work in their factories and in a number of cases, these children used to get involved in accidents, they used to lose their limbs, they used to die.

Now, who is going to fight for the rights of children? If not the children and if not the market, then government has to step in. So, in cases where there is market power, where there are certain players or certain actors in the market who are able to influence the prices, who are able to dictate their terms, we require the working of the government to maximize the welfare of the society.

So, in all of these, what we are observing is that we require government to maximize to the welfare of society. So, what is being expected of the government is that the government will provide for a mechanism that permits the market to work efficiently, to have all the benefits of the market, but to overcome the shortcomings that the market would have without the supervision of the government.

So, which is what brings us to the working of government policies. Now, in a number of cases, the government influences the market outcome through things such as price controls or taxes and in a number of cases, things might be out rightly banned. Now, we are not talking about things that are completely banned by the government because that comes under the ambit of law.

But here we are talking about ways to nudge the market outcomes that is if the government wants that people should have more of minimum wages, that is people should be paid a bare minimum for the the services that they are being that they are rendering, then what are the mechanisms that the government has?

If the government wants to say minimize the use of of a certain good or a service that is harming the society, what are the mechanisms that government has? Well, one mechanism is outright banning that particular thing, but if the government wants to reduce the influence, then what what are the mechanism with the government?

Now, in this case, two ways of contacting market outcome are price controls and taxes, but these impact the running of the market and so, must be used with care because we have observed before that markets are generally a good way of organizing economic activity.

So, if you are influencing with the market, it should be done in a very settled manner, the government should not influence the market to such an extent that the market forces themselves to stop operating. So, we will observe what are the kinds of influences that, these price controls and taxes can have on the market outcomes. So, let us explore the impact of these interventions beginning with price control.

Now, price control can have two formats: one is a price ceiling and the other is the price floor. Now, if you consider a room, then you will have the ceiling above and you have the floor below. So, price ceiling is the maximum price that can be charged. Price floor is the minimum price that can be charged or must be charged.

So, price ceiling is the legal maximum on the price at which a good can be sold. So, when we are talking about price ceilings, the this is the maximum that somebody can charge such as the maximum cost a company can charge for say electric vehicles. Now, a good way of understanding price ceiling is our example of the village person with a will in a (Refer Time: 16:28) situation.

Now, this person may charge any amount. So, suppose he charges 500 rupees for a bucket of water. Now, the government can intervene, and the government can say that no, we are not going to permit you to charge 500 rupees for a bucket of water, the maximum that you can charge is say 20 rupees. Now, when the government puts up certain intervention, then this is known as a price ceiling.

The maximum that you in charge your customers, the maximum the sellers can charge their buyers for any particular good or service is the price ceiling and in a number of cases, this is legally defined. So, it is the legal maximum on the price at which a good can be sold. A price floor is the legal minimum on the price at which a good can be sold such as the minimum you need to pay a company that is selling solar cells.

Now, in a number of cases, we have things such as a minimum support price. So, for several food grains, this is a price that the government has set that is the minimum that needs to be paid to the farmers because if you pay anything less than the minimum support price, then probably the farmers will not be able to recuperate the cost of agriculture. So, this is the minimum that needs to be paid.

Similarly, we have minimum wages which means that this is the minimum amount of wage that you need to pay to a person when he or she is providing you his or her services for a day because this is the minimum that is required for any person to lead a successful life. If you pay this person less than this amount, then probably he or she will have to cut down on the amount of food that they are getting or the clothes that they are wearing.

So, this is the minimum that we need to pay. Now, such a price which is the legal minimum on the price at which a good can be sold is a price floor. Now, how does the government implement these? So, we can we will look at the price ceilings as well as the price fields.

Now, here we are observing that if you make the demand and the supply curves, now here again the demand curve moves from top left to the bottom right because as the price increases, the quantity demanded will go down so, which is the law of demand. In the case of the supply curve as the price increases, the quantity supplied increases which is the law of supply.

Now, both of these curves intersected in this point which is the point of equilibrium. So, at this point, we have an equilibrium price so, if you draw this horizontal line, the point where it it cuts the price axis, or the y-axis gives you the equilibrium price. You also have the equilibrium quantity, which is if you draw a vertical line, the point where it cuts the x-axis will give you the equilibrium quantity that is being demanded or supplied in this market.

Now, at this equilibrium, the quantity demanded is equal to the quantity supplied and the price that it gives you is the equilibrium price. So, if the market is working as it is that is without any interventions, then this is the equilibrium price and the equilibrium quantity that are being demanded and supplied in the market.

Now, the government may say that there is this price ceiling that is this is the maximum price that anybody can charge for the good. Now, in this case, what we observe is that this the price ceiling that is the maximum that anybody can ask for so, this price ceiling is telling us the maximum amount that can be charged.

Now, here we can observe that the maximum amount that can be charged and this is the the amount that the market is already charging which is very less than the maximum that can be legally charged. Now, in this case, the price ceiling does not have any impact on the market because you are well within the price ceiling.

The market has reached an equilibrium at a point where the price is less than the price ceiling and so, we call this a non-binding price ceiling, it is not binding on the bias and descendants because in any case by the natural equilibrium is bringing the price to a point which is less than the price ceiling. So, this is, this this graph tells us that there is no impact of a non-binding price ceiling.

But what happens if the price ceiling is less than the equilibrium price? That is the market brought us to this equilibrium, this is the equilibrium price, and this is the price ceiling. So, there is a difference between both of these. So, here we are finding a difference between the natural equilibrium price so, this is something that the market has reached naturally without intervention and this is the price at which the government is intervening, here we have intervening.

Now, the question is what is the impact of such a price ceiling which is less than the natural equilibrium price that the market will provide you? Now, at this price ceiling, the quantity that is supplied is given by this point, where the supply curve intersects the price ceiling. So, this is the quantity that gets supplied in this market. So, this point will tell us the quantity that is supplied in this market at this price.

Because remember that when we talked about the supply curve, the supply curve tells us the quantity that the sellers are able and willing to supply to the market at different price points. So, if the price increases, people want to supply more. If the price reduces, people want to supply less. So, the amount of goods or services that people will be able and willing to supply to the market is given by this quantity where the supply curve is intersecting with the price curve.

Now, the quantity that is demanded by the consumers at this price point is given by this point. Now, this is the point where the demand curve is intersecting with the price. Now, here again you will remember that a demand curve tells us the quantity that is demanded at different price levels. So, if the price of something goes down, then people start to demand more and more of that particular good or service.

So, at every point, the demand curve tells us what is the quantity demanded at that price point. So, at this price point, which is the intervention price point or the price ceiling that has been set up by the government, the quantity that is demanded is given by this vertical line which intersects this curve at this point. So, this is the quantity that is demanded in the market, this much; this much amount of quantity is demanded in the market and this much amount of quantities supplied in the market.

So, there is a difference between the quantity demanded and the quantity supplied. The demand is more, the supply is more. Now, if you remember the law of demand and supply, the demand curve and the supply curve intersect each other at a point that makes the quantity demanded equal to the quantity supplied because of which there is no shortage.

But, at this price point, at the price ceiling which is binding, we are observing that the demand is much greater than the supply. So, in this case, the market will observe a shortage of goods. Now, shortage is the difference between the quantity demanded and the quantity supplied.

Shortage is defined as a situation in which the quantity demanded is greater than the quantity supplied to the market. Now, what are the impacts of a shortage? Now, obviously, as we have observed, the market is a good way of organizing economic activity. So, at the natural equilibrium point, the market will reach the situation where the there is no shortage.

So, everybody who is able and willing to pay at that price point will get the stuffs, but when you have a binding price ceiling, then the shortage will manifest in the form of long queues. So, because there are less goods that are supplied to the market, more and more people want to have that good so, there will be long queues, people will waste their time standing in the queues, people will waste their time irritation and frustration of not being able to get that good.

Now, there will be certain people who would say that ok, the government has said this price ceiling of 10 rupees, let me give you 12 rupees, you give me this product or let me give you 20 rupees and you give me this problem. So, the people will always try to bring the market to the natural equilibrium point, but because of the price ceiling, if it is legally enforced and if it is enforced properly which means that people are not able to cross this ceiling by means of black marketing or by paying bribes.

So, if that happens, then there will be a shortage of this market. So, there will be long queues, lost time, there will be unfairness because there will be discriminatory selling to close friends or relatives. So, the seller would say that ok, I only have 10 pieces of this particular good, there are 100 people who want to have this good, whom do I sell it to? And I cannot increase the price so, I cannot increase my profit.

What the seller would do is ok, let me give it to my relatives, let me give it to my friends. We will start observing discrimination in the society. We will start observing black marketing and bribery. So, even though legally you can sell this good for 10 rupees, there will be a black market that will come up in which people will be able to buy this good for 100 rupees.

People will try to bribe the shop owners to allocate them the goods, and will observe rationing. Now, in the case of rationing, the government will say ok, no there is nobody who will be able to purchase more than say two pieces of this particular good.

Even if there are people who want more of these goods because say they have a larger family or because there is say some medical situation or this person is going out and so, he he or she requires more of these goods because he or she will not be able to go to the market every day so, in that case, people generally want to have more of the goods, but because there is a price ceiling, the government might even have to enforce rationing.

The government will say no, every day you can only have two ah; two pieces of this particular good, say 2 pieces of bread now, in that case, you cannot say bring 14 pieces of bread and store it into your fridge, you will have to go to the market every day so, that is rationing.

There will be many potential buyers who do not get access to the goods at all because there is a shortage. So, not everybody will get the goods. There will be long term impacts including the reducing supply, not innovating, not doing maintenance, a reduced quality and so on.

A very good example is the rent ceiling. So, what the government did sometimes back was that they said that the landlords are charging exorbitant rents from the tenants. So, the government said ok, nothing doing, you cannot charge more than this particular amount. So, suppose in the market the landowners were charging 20,000 rupees for a particular flat and the government says no, you cannot charge more than 5000 rupees. What will happen?

One, the landowners will find it no longer lucrative to put this flat into the market. So, they will reduce the supply because then they were willing to put this flat up for rent for 20,000 rupees, but for 5,000 rupees, it does not make sense for them. And for those landowners who actually put the flat on for rent, what they will do is they will cut down on something, they will cut down on maintenance, they will not upkeep the flat, they will not paint it regularly.

So, the tenant who gets into this flat will find that all the walls have peeling paints, the the windows have broken glasses, the taps do not work and things like that because it is now no longer lucrative for the landlord to maintain this flat will start observing that people stop doing any maintenance, there is a reduced quality, people stop innovating and people try to take things more and more away from the market. So, the supply reduces even further.

And in a number of cases, the government will find it difficult to improve the norms. So, we may start observing difficulties in enforcing norms which actually defeat the government interventions. So, if the government needs to intervene, the government should be prepared to enforce the norms otherwise, it does not make any sense.

Another impact is the impact of a price floor. Now, the price floor is the minimum that can be charged. Now, here again, we can have a non-binding price floor in which case this is the natural equilibrium point; point without intervention and this is the intervention. The government in this case for example, is saying that this is the minimum wage that you need to pay to people, but the natural equilibrium has brought the wages to this one.

Wages like other goods also have a demand and a supply. The demand is by those people who want to employ others and the supply is those people who want to give their wages or who want to sell their wages because not everybody wants to work for wages. So, those people who want to sell their wages, they will be supplying to this market and those people who want to hire others, will be the buyers in this market.

We are talking about the market for labor. Now, in this market as in all the other markets, there is a demand curve, there is a supply curve and the point where both of these meet is the natural equilibrium one which gives us the equilibrium price and the equilibrium quantity.

In this case, the government is saying that the minimum wages that you should be paying is so, and so which means that in the national market suppose everybody is is being paid 500 rupees for a day worth of labor, but the government says the minimum you need to pay is 100 rupees now, because the market is already paying 500 so, this becomes a case of a non-binding price floor.

This price floor is not binding on the market. So, it will not have any impact on the market. On the other hand, we can have a situation where the price floor becomes binding. Now, when the price floor becomes binding, the quantity that is demanded is given by this point where the demand curve is intersecting with the price floor. So, the quantity demanded will be this much.

The quantity supplied is given by this point where the supply curve intersects with the price floor and the quantity that is supplied will be given by this point. Now, in this case, what we are observing is that the quantity that is supplied to the market is more and the quantity that is demanded is less.

Now, why is that so? Because as we have seen in the law of supply, as the price increases, the quantity supplied also increases. Now, because the price floor in this case is more than the equilibrium price so, more the price means more the quantity supplied. On the other hand, in the case of the law of demand, if the price increases, the demand falls.

So, the quantity demanded is now less which means that suppose if the market was paying 500 rupees for a day of labor and the government says no, you cannot pay 500 rupees, you have to pay 700 rupees for every day. Now, for 700 rupees there would be a number of people who were not willing to work for wages for 500 rupees, but for 700 rupees, they would say ok, let me work in the market because every day I will be getting 700 rupees.

Now, the quantity supplied will increase, but the quantity demanded will decrease because there were a number of people who were able and willing to pay 500 rupees. But when it comes to 700 rupees, there will be a number of buyers of labor or the employers who say that no, 700 rupees is a bit too much because by hiring this person, I am only able to get a revenue of 600 rupees.

So, if I pay him 500 rupees, I have 100 rupees of profit, but if I hired this person for 700 rupees, I will be at a loss of 100 rupees for each labor that I am hiring. So, the demand will go down. So, in this case, what we are observing is that the quantity supplied is more, the quantity demanded is less which means that there will be a surplus in this market.

So, more and more people want to work at this wage, but fewer and fewer people want to hire people at this high wage. So, this leads to a surplus. And a surplus is defined as a situation in which the quantity supplied is greater than the quantity demanded.

Here again, it will have certain impacts such as selling which is possible only for a few sellers who can appeal to rational, familial or other ties which means that the people who want to work for these wages would not find the work when they go to the market because the price is a bit too high. But then, they will probably go to one of their relatives and say that ok, you are hiring such and such number of people, why do not you throw them out and why do not you hire me because I belong to your own family.

If you are paying 700 rupees, let it remain within the family. We will start observing that people are now using their family and friends, people are using their friendly ties. So, people would say ok, your father is employing so and so number of people and you should ask your father to hire me. So, in this situation of surplus, selling is possible only for the few sellers who can appeal to these ties.

There will be a loss for sellers due to unsold inventory. There will be a large number of people who want to sell their labor, but they are not getting any market for them. So, they have got nothing to do, but they can only sit down. So, in that case, we are observing that there is a loss for these people.

A number of these people would have happily worked for 500 rupees so, at least they will be getting 500 rupees every day, but when the government increases the floor to 700 rupees, then these people are completely out of the market. In that case, they will be earning 0 rupees, this is also a situation that will come up.

And the long term impact will be closing of different industries because people are not getting labor at requisite or natural equilibrium rates, there will be job losses. And also there will be a number of situations where the government will not be able to enforce these points because on paper, people would be saying that we are paying 700 rupees, but when the labor comes, the employer might say ok, I am going to pay you 500 rupees.

But, you sign this paper saying that you are receiving 700 rupees, either you do this or I will throw you out. Because I do not have any other option, I cannot pay you more than 500 rupees, but the government is insisting that I pay you 700 rupees so, let us close the papers. So, the enforcing of these price floors at times also becomes very difficult, but at times, these are important.

So, markets are usually a good way to organize economic activity, but the point here is usually, not always because if you allowed the market to work as it is, then there might be cases of exploitation, there might be cases in which people are reducing the welfare of the society so, the government will have to intervene, but if the intervention is a bit too high.

Suppose in place of 500 to 700, the government had said that ok, in place of paying 500 rupees, the price floor is 550 rupees or say 520 rupees, then probably the intervention would be much more fruitful because it would actually increase the amount of remuneration to different laborers. But if these interventions are used to a very large extent, then probably, they will defeat the purpose. So, these interventions are important to increase the welfare of the society to reduce exploitation, but at the same time, they have to be used with a very great amount of concern and with a judicious amount of usage.

Another intervention that the government does is through taxes. Now, the government collects taxes for their functioning and for the financing of public projects. So, as we had observed, there are a number of sectors such as health care or education where the market may not provide sufficient quantity and quality of goods.

Now, because these are those sectors that have a very large positive externality, a person who is educated is not only benefiting himself or herself but is also an asset to the society. A person who is healthy is not only protecting himself or herself but is also an asset to the society because he or she is also preventing the spread of diseases.

These are things that need to be incentivized, but the market may not incentivize these activities because the market works on a profit motive. So, the government will have to intervene, the government will subsidize these sectors, but to subsidize these sectors, the government also requires funds. Now, where did the government get these funds from? One option is taxation.

So, the government taxes different people especially, those activities that need to be brought down, so they will be taxed at a higher level. But a number of other activities such as earnings will also be taxed and these taxes, the funds that are received through these taxes they will be used for the working of the government and they were also be used to subsidize these priority sectors and these days, we are also observing that the government is using tax money for conservation purposes.

Such as this, pollution tax businesses will face higher taxes on the gas they use in a bid to cut pollution. What the government is saying here is that because pollution is having a negative externality, we are going to put a higher tax on the use of fossil fuels so that it becomes disincentivizing for people to use more and more of these fossil fuels. So, here the government is using the tax for conservation procedures.

Federal carbon tax jumps 50 percent. So, in Canada, the government is putting a carbon tax so that if people are emitting carbon, they will have to pay for it. Car tax what you need to know about vehicle excise duty. Now, here again, because cars pollute the environment, the government puts up a tax on cars to reduce their usage.

Excise tax: the right step to combat plastic pollution. Now, in this case, the government is trying to bring the supplies down. How? So, we have observed that in the case of the supply curve, the supply curve looks like this. So, we have the price, and we have the quantity. Now, in the case of a supply curve, when the price is less, the quantity supplied is less. When the price is more, the quantity supplied is more.

Now, when we talk about the excise taxes, what they do is that they increase the cost of making funds which shifts the curve to the left. So, what we are saying here is that we had observed in the case of the supply curve that an increase in the cost price of making or the increase in the cost of making things, shifts the curve to the left, that is it reduces the supply, what it means is that for any given price point.

Let us say at this price point, earlier the market was able to supply this much amount of the product, but now, the market was only able to supply this much amount of the product. So, the quantity that has been supplied reduces if we increase the cost of making the things and a good way of increasing the cost of making things is through tax increase. So, in this case, the government uses excise tax to combat plastic pollution so that less and less amount of plastic is imported for manufacturing.

Now, whenever we have a taxation, this tax may have to be paid by the buyers, they have to be paid by the sellers or by both of them. So, for instance, if the price of this bottle goes up, who is going to pay this price? Is the company going to pay this price out of its profits or will the buyers have to sell out more money to get this bottle?

Who is paying the price of these plastics is the next question, which brings us to tax incidents. Tax incidence is the manner in which the burden of a tax is shared among the participants in the market. So, who pays, the buyer pays, the seller pays or both of them pay? Now, we will look at the complete impacts of taxation in a later lecture, but in this lecture, we are concentrating on who will pay the taxes and by how much.

It is important because in certain cases, if say artisans have to pay the taxes for something, then in that case, they might lose out on their jobs because their profits are already wafer thin and so, if the revenue reduces, then probably, they will be out of the jobs. So, which is why we need to be very careful about the tax incidence.

Now, what is happening in the case of taxation and if the government says that we are applying a tax only on the seller which means that the government is saying here that when the manufacturer makes this bottle, then the manufacturer will be taxed, the more the number of bottles will make the more will be your tax the the government says that.

Does that mean that only the manufacturer will have to pay for the taxes? It is what we are trying to analyze here. In this curve, this is the demand curve, this is the supply curve and because of a tax, there is a shift in the supply curve to the left because we are adding a tax and we are taking this tax from the sellers which means that the sellers have to pay more to make each bottle.

The cost of making goods has increased and so, the supply curve is shifting to the left. Now, what happens here? Earlier, the equilibrium price was this much. So, this is where the earlier demand and supply curves were intersecting each other, but now, what is happening is that because the new supply curve is here, this is the new equilibrium point.

The equilibrium point has shifted from this point to this point. Now, what is happening is this is the price that the buyers will have to pay to get this bottle why? Because at this point, the point where it is cutting the demand curve, this is telling us the equilibrium price that the buyers pay, and this is telling the equilibrium quantity that they will be getting.

At this equilibrium quantity, the price that sellers get is given by this point. So, in this case, this is the price that the buyers pay, this is the price that the sellers get and earlier, the equilibrium price was this. So, in the case of a normal functioning of the market without the taxation, the price that the buyers pay is equal to the price that the sellers get, but with taxation, the buyers pay more, the sellers receive less, and the difference is the tax that the government gets.

It is important to note here that this share of what the buyers were paying now and had to pay earlier is the share of the buyers in the amount of tax. And the price that the sellers are getting now is this earlier they were getting this price. So, this is the seller's share. Even though we have added a tax only on the sellers, the tax is distributed between the buyers and the sellers.

This is where we can talk about the tax incidence. Even though the government put this tax only on the sellers, the buyers also have to pay a share. So, what happens? 1, the market activity is reduced because less goods are sold in purchase. Earlier, the quantity that was supplied and demanded was this, the new quantity is this. So, the market activity has gone down, it has reduced and 2, the tax burden in this case is being shared by the buyers and the sellers.

Now, the government can do one other thing, the government can say that we are going to put a tax only on the buyers. Now, in that case, the government will say that ok, the price at which this bottle was being sold, we are going to add to that price so that only the buyers will have to pay because they are purchasing this bottle.

Now, what happens in the tax in the case of tax incidents in that case. Now, because the government has added to the price, the demand will go down. So, in this case, this was the earlier demand curve, this is the new demand curve because we are putting the tax only on the buyers, this and the supply curve remains the same.

Now, here again the point where the supply curve is cutting the new demand curve is giving us the equilibrium quantity that is now demanded or supplied in this market and because this point is where it is cutting the supply curve so, this is the price that the sellers are getting. Earlier, the price without taxation was this. So, this was the price that the buyers were paying, and the sellers were getting.

Now, the price that buyers will have to pay for this much quantity will be given by this point where the vertical intersects with the earlier demand curve. So, this is the price that the buyers will have to pay. Now, in this case as well, we are putting a tax on the buyers only, but we will have a buyers share because earlier the buyers were paying this amount. And now, they have to pay a higher amount so, this is the share of the buyers.

Earlier, the sellers were getting this amount, but now they are getting this amount so, there is a share of the sellers. So, in this case as well, even though we have added, we have put at some buyers only, the tax gets shared between the buyers and the sellers and here as well, the market activity is reduced because earlier the quantity demanded or supplied was this, the new quantity that is demanded or supplied is this.

There is a reduction in the quantity that is demanded or supplied in this market. So, the important thing to note here is that even if you put a tax on the buyer only or on the seller only, the tax will be distributed between the buyers and the sellers. Now, the question is in what ratio? Suppose there is a tax of 1 rupee on this bottle so, how much amount will be paid by the buyer and how much amount will be paid by the seller?

This again brings us to the topic of elasticity. Now, if the demand is inelastic and the supply is more elastic, we will find that the point where it cuts is way higher than the point without the tax. In this case, the buyer's share is more, the seller's share is less. In the case of an inelastic demand, the buyers will have to pay more.

In the case of an inelastic supply, here the supply curve is now becoming more vertical. So, in this case, the sellers will have to pay a larger share of the tax burden which is telling us that whichever curve is more inelastic, that party will have to pay more. If the demand is inelastic, the buyers will have to pay more. If the supply is inelastic, the sellers will have to pay more.

So, when we talk about the incidence of the tax burden, then the tax burden is shared between the buyers and the sellers, but the amount that each party will be paying will be determined by the elasticity of demand or support. So, what we are getting here is that the largest share is faced by that party which has the inelastic curve.

Now, we have seen before that elasticity depends on whether something is a necessity or whether it is a luxury. In the case of luxuries, we have a demand that is more elastic. In the case of necessities, the demand is very inelastic. So, if there is a tax on something that has an inelastic demand, things like food - in the case of things like food because that demand curve is inelastic so, the buyers will have to pay more.

In the case of things that are luxuries so, if the one might say imposes a tax on a luxury car, then because luxuries have an elastic demand so, in that case, the burden on the buyer will be very less so, the buyer will have to pay less of the amount and probably, the seller will have to pay more why?

Because even if there is an increased amount of taxation in the short run, the seller or the artisans who were who were involved in say painting of the car or making it through a handmade fashion, they will not be able to shift to some other profession so, they are having a larger in elasticity in the in their supply terms and when that happens, the sellers will have to pay the larger share of the tax burden.

Now, in this case, what is happening is in the case of luxury items such as luxury cars or yacht, the artisans who are involved in painting of these things or in handcrafting different components of the luxury cars, they are extremely poor and when the government imposes a tax on these luxury items, this tax burden goes to the seller which means that it goes to the artisans because they have the inelastic supply whereas, the demand is more elastic.

If the government puts tax on luxury cars probably, the rich people will shift from buying luxury cars into say buying luxury homes or say buying a private jet. Now, in such cases, whether or not the government should tax things, it becomes a bit more intricate because the tax burden is falling more on the seller that is the RTCs.

So, taxing luxury products such as private jets, yachts or luxury holidays with elastic demands and inelastic supply may hurt the sellers who are often poor workers more than the buyers who are the rich. Taxes, though they are a tool for conservation, have to be used with extreme caution to ensure that it does not have a very large social cost.

So, in this lecture, we had a look at the government interventions in the form of price controls, price ceilings and price floors and taxation and we examined what is the incidence of tax burden on the buyers and the sellers and the bottom line here is that if the buyers have an inelastic demand, they will have to pay more, if the sellers have an inelastic supply, they will have to pay a larger share.

The government can intervene with the market outcomes, the government has to intervene in a number of cases to ensure that the market works in a manner that is beneficial for the society, but because we have these negative side effects of any such intervention, these tools have to be used with extreme problems.

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