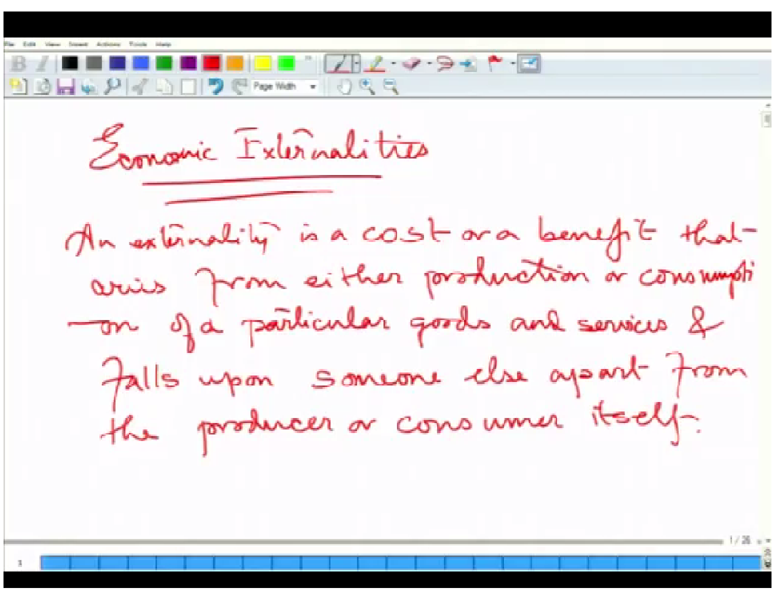
Economics of Health and Healthcare
Prof. Deep Mukherjee
Department of Economic Sciences
Indian Institute of Technology - Kanpur
Prof. Angan Sengupta
Department of Management, Amirtha Vishwa Vidyapeetham, Bangalore

Lecture – 43
Fundamental Concepts of Economic Externalities

Hello everyone. I hope you all are doing well. So in this session, we will discuss on economic externalities and as we are slowly discussing issues related to market structures associated with healthcare and how a healthcare may not be an ideal market and in which context we move towards the market imperfection.

And while we were doing about the transition of movement of the perfect market or an ideal market to a market imperfection in terms of a healthcare system, we discussed about externality in our last class and I gave you a broad idea about what is externality and where these benefits and costs come together but not in the best efficient manner. So when I say this efficient manner that means externality has something to do with efficiency, the economic efficiency. What is externality by its definition?

(Refer Slide Time: 01:23)

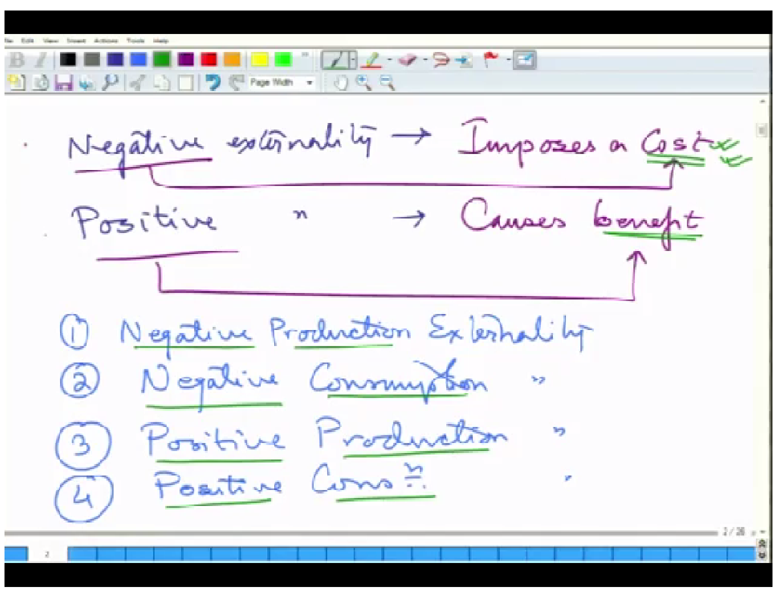


So we will discuss about the economic externalities and an externality is a cost or a benefit. It can be a cost as well as a benefit that arises from either production or consumption of a particular goods and services and falls upon someone else apart from the consumer, first we have talked about producer, so producer or consumer themselves or I will say consumer itself. That means that when a producer or a consumer, they produce or consume something, it can be in terms of production, it can be in terms of consumption.

When they produce something, there are certain implications like when I produce something, I have some benefit. Also I have some cost and because I am producing something, it can have a benefit upon someone else. It can also have a cost upon someone else, right. This benefit and cost which is eventually not benefit the others as well not cause any cost to others, not incur any cost to others but it is eventually doing so, then that additional benefit and cost upon those others are known as externalities, yes.

Now it can be from the production, it can be as well from the consumption. If I consume something, then because of my consumption there can be an implication because I am consuming something, someone else can be benefitted or someone else can also be equally or more or less, can also be incurring a cost because of my consumption. Let us understand the types of economic externalities.

(Refer Slide Time: 04:13)



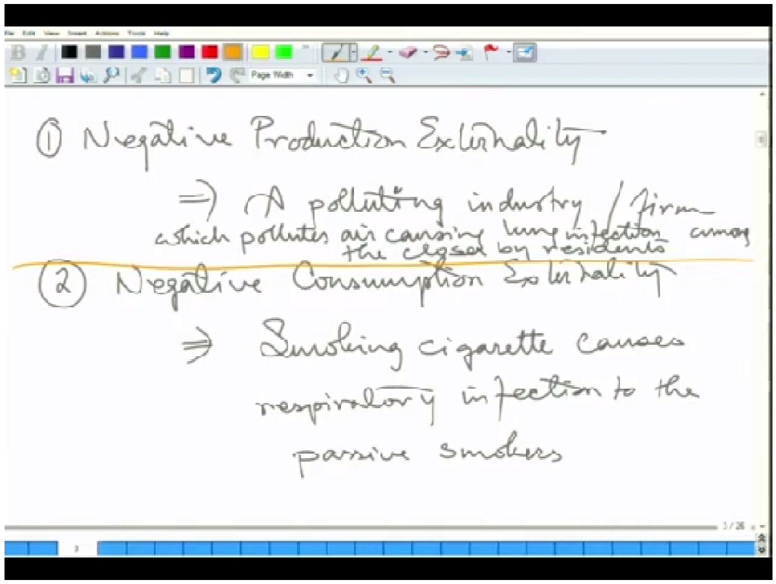
So the first one is negative externality which imposes a cost. The next one is positive externality. As the name suggest it imposes or it should not be imposes, it causes benefit, results into benefits, right. So this is the basic difference. Positive causes benefit, negative causes cost. And then we have total, in terms of now we have just said positive and negative. This positive and negative can arise out of the production externality, production as well as consumption.

So now I am attaching this production and consumption with this. So 4 types of economic externalities are, 1, is negative production externality. 2, maybe negative consumption externality. 3, positive production externality. 4, positive consumption externality. Now as the same suggests, negative externality, that means cost is higher. Negative externality that means cost is higher again.

But from the first point, the cost is being imposed because of this production. In the second condition, the cost is being imposed because of anyone's consumption. We will take examples and then understand it on a better way. Similarly, a positive externality is which causes benefit. Now this benefit can arise because of production as well as consumption. Therefore, if a particular production causes us a benefit or not to the, again, not that particular person who is producing that.

Apart from him or her, if this is actually bringing any benefit to others, then that is a positive production externality. And if because of somebody's consumption of something and it brings benefit, it results into benefit to somebody, then it is the positive consumption externality. We will learn about all of these in a, taking examples.

(Refer Slide Time: 07:32)



Let us say 1 is negative production externality. Negative production externality, what can be the easiest example is a polluting industry. It can be an industry, it can be a polluting firm, yes, a particular firm which is causing air pollution in a certain locality. They are manufacturing, say it is a paper industry, it is a cement industry, highly polluting industries. So they are manufacturing their paper or cement or say if paint industry, then it causes different kinds of water pollution mainly.

So in terms of air pollution let us say. So what is happening is that because of their production, they are earning their profit. They are selling their products, earning profit, investing the capital or the profit and continuing their business group. What is happening because of their production or production process? It actually degrading or deteriorating the condition in the nearby areas. And even if those who are staying nearby, they do not use the papers manufactured in that particular industry or they do not use the cements manufactured in that particular industry but they are consuming or inhaling that poor air because of that production, yes.

So the production and production itself has a cost, right. Production itself has a cost, that is the firms cost, production cost, whatever. Production itself has a benefit because of that products, of the products output. So this is all private benefit and private cost, right. Now there is no social benefit as such because they are not consuming their products, nothing good is happening. On the contrary, the quality of air is going down because of which maybe many people around that factory are falling sick with acute respiratory infections, asthmatic problems, bronchitis, this and that, lung infection.

So they have to go to a doctor, they have to treat themselves. So eventually what is happening? Their cost is increasing, right. And this cost is external cost, right. So because of this polluting industry or that particular firm, there is some external is being incurred by somebody else or a group of people and that is external cost. It basically happens when that there is an unregulated market because an unregulated market will not generally have, we know their profit motif will be very high.

And then they really will not have an intention to really bother about the causes they are, cost they are bringing into, towards the society or any negative adversities because of their products. And because it is unregulated, they have a market power and that leads to an inefficiency to that market. Eventually this negative externality is very very common. So the second one is negative consumption externality.

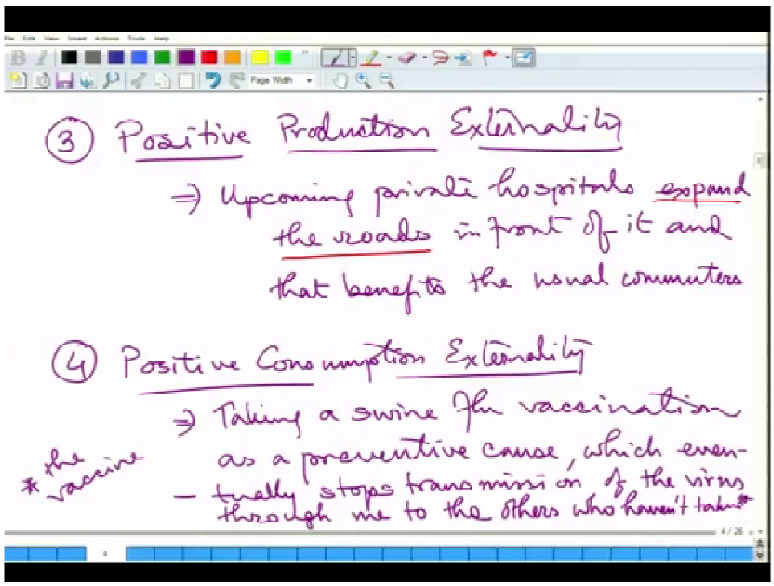
Now what is the best example of negative consumption externality is basically smoking cigarette and the causes, and which causes harm for the passive smokers, right. I smoke a cigarette, I pay for it, so that is my private cost. I pay for a cigarette, I smoke that and that is my benefit, private benefit, my own benefit. But the child who is standing beside me, yes or the people who is standing beside me or if I smoke within, there are these advertisement now days, right against this smoking causes cancer and all this.

And they show that father is smoking and then the child is coughing within the room, inside the room he is smoking and then it has after being exposed for a long long time towards this passive smoking, it has a serious negative impact on their, the other health, passive smoker's health. Therefore, 1my consumption or because of that person's consumption of cigarette, it is causing a health problem to those who did not want to consume, did not want to inhale the smoke, but incurring a cost, health cost eventually.

It can be anything. It can be well this, externality can well be accommodated into an environmental energy economics, natural resource economics and all, anyways. So this negative consumption externality therefore the cost to somebody else because of somebody, the consumer's own private consumption.

So it is like smoking a cigarette causes respiratory infection to the passive smokers and this polluting industry or firm which pollutes air causing lung infection among the closer by residents, yes. So these are the most prominent examples maybe in terms of negative production externality and negative consumption externality.

(Refer Slide Time: 14:47)



When we move towards the positive production externality and positive consumption externality, first let us take the positive production externality. So in positive externality, it causes benefit, right, positive. Production externality means the benefit is being is caused out of production of something. Externality means the benefit for somebody else. Now let us say there is a hospital coming up in our locality.

And because of that hospital, the city civic body, they have rule or regulation that in front of the hospital, the road it should be both way lane and then the road breadth will be something around 40 feet or something like that, minimum 40 feet, something like that. So if it is like that, then the hospital has to, let us take the hospital has to take the initiative because it is a private hospital and they can only get the sanction from the government if they expand the road on their own cost in front of them, at least 100 meters both the sides.

So upcoming hospital, private hospital expands the roads in front of it. But those who are using those roads or those who stay closer by, take that road towards their office or back or towards the children's school or back, they do not probably visit that particular hospital. Many of them can go to a clinic, many of them have other alternative options. But then they are taking, they are using the road and they are being benefitted because of that expansion of the road, right.

So the hospital expanded the road for its own functioning, for its own production, production of healthcare services. And it incurred its own private cost, right, that is its infrastructural cost to start their business. Eventually what happens is this expansion of roads causes benefit, roads in front of it and that benefits the usual commuters or maybe those who are staying nearby, right. Maybe they are just, they are not taking their vehicle, they are just walking down the street, they have not paid a single penny.

But because there is no traffic congestion and at the same time, they are also enjoying the hospital, at least the security of having the hospital, that is the satisfaction (()) (18:00). So then they have a benefit of course and that is that positive production externality. What can be the positive consumption externality? Is say there is a high prevalence of a particular flu or say swine flu or something which was very prevalent in Bangalore sometimes back, maybe last year.

And this is infectious, contagious, the swine flu. And many of the people, they were taking the swine flu vaccinations voluntarily. Now if I take that vaccination, I paid for that, yes, some 800 rupees or something, I paid for that. I paid for the doctor and all and then I got the flu. It is completely preventive measure. I even do not know that whether I would have even affected by the swine flu or not.

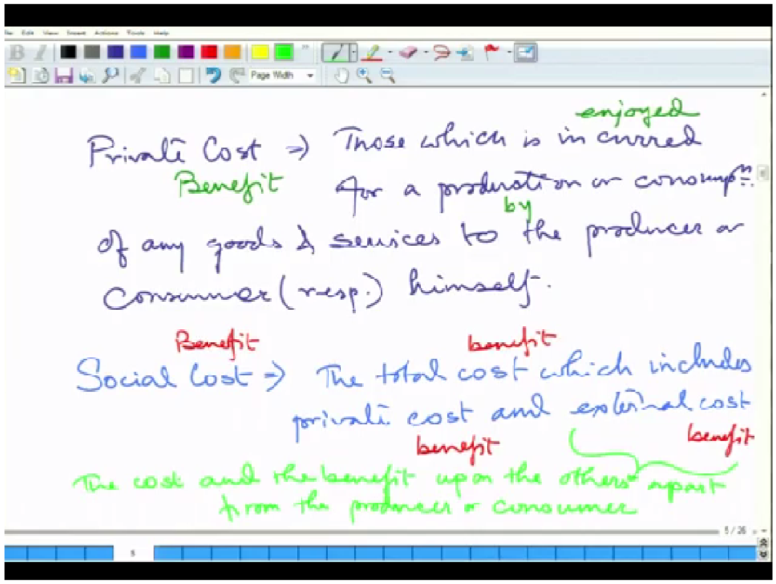
It is just a preventive measure, right. Maybe I got exposed to a swine flu person and then the swine flu vaccine enters my body and then because I have that flu, I have that vaccination, the flu never becomes positive, right. And that eventually saves the health for those who are coming in touch to me or those who are staying around me. Maybe they have not taken the flu, right. So I have consumed the flu and because of that, I am stopping the transmission of the problem at least through me.

Therefore, it has a positive consumption externality. So that example is taking a swine flu vaccine and eventually as a preventive cause, so if I am not falling sick with swine flu, that is my private benefit, as a preventive cause which eventually stops transmission of the virus through me to those, to the others who may not, who have not taken the vaccine, right. So this is my positive consumption externality.

Now generally whenever we talk about these, positive externality, negative externality, we say that in one case, the cost is more, in other case, the benefit is more. It is positive externality, then we talk about the benefit. When it is negative externality, we talk about the cost. But every single thing has its own private cost, its own private benefit. Maybe it can have both the social cost and social benefit.

So what happens that when we estimate these, the cost and benefit, it is not basically a cost benefit analysis but of course, yes. When we estimate the cost and benefit, we will break it in 2 components, yes. So as we have said that it has always a private cost and private benefit, apart from that, it has another component that is that externality, right. We call that external cost or external benefit, right.

(Refer Slide Time: 22:33)

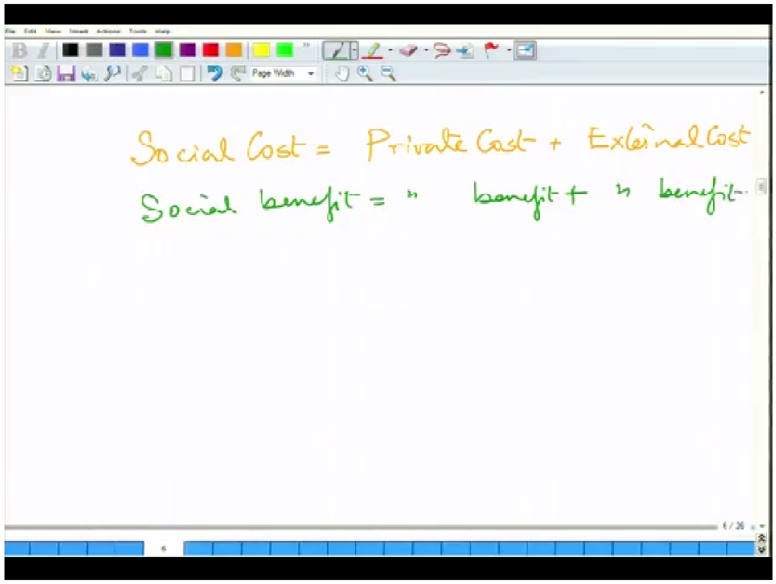


So private cost are those which is incurred for a production or consumption of any goods and services to the producer or consumer, of course respectively themselves or himself, yes. So the private cost is that cost which is incurred for a production or consumption of any particular goods and services to the producer or consumer himself.

Now similarly private benefit is those or those benefit which is incurred or which is enjoyed, instead of incurred, while we are talking about benefit which is enjoyed for a production or consumption of a particular good by the over here in case of to the, it should be by the producer or consumer themselves. This is about private cost and private benefit. What about social cost and social benefit?

Social cost is simply the total cost which includes private cost and external cost. Similarly, social benefit is the one which includes total benefit, which is total benefit includes the private benefit and external benefit. Now what is external cost and external benefit? It is very simple. External cost and external benefit are the cost and the benefit upon the others apart from the producer or consumer, yes.

(Refer Slide Time: 25:54)



So together, we estimate the social cost. So the social cost can be a summation of private cost+external cost. Similarly, social benefit is private benefit+external benefit and the challenge to estimate these external benefit and external cost is the information asymmetry. Because often people do not know that whether a particular industry, they are polluting my environment or not or even if they are polluting my environment, how badly it is affecting me, yes.

So and therefore, attaching the cost to this is very difficult, yes, because of this unawareness. Eventually in an unregulated market, because the government does not really come forward or has not yet come forward to take a decision or to work upon those polluting or socially undesirable or inefficient producer or consumer, then certainly it is difficult again to measure by a single individual that okay I think that they are doing something wrong but I cannot really do anything, right.

So the estimate of this external cost and external benefit has often been challenging and thus the estimation, a perfect estimation of social cost and social benefit. Thank you.