

Negative externalities and the coase theorem essay



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As Adam Smith explained, selfishness leads markets to produce whatever people want. To get rich, you have to sell what the public wants to buy. Voluntary exchange will only take place if both parties perceive that they are better off. Positive externalities result in beneficial outcomes for others, whereas negative externalities impose costs on others. The Coase Theorem is most easily explained via an example. This paper addresses a classic example of a negative externality (pollution), and describes three possible solutions for the problem: government regulation, taxation and property right – a better solution to overcome the externality as described by economist Ronald Coase.

Imagine being a corn farmer and growing corn. What are the private costs that you face that help you determine production? Things like fuel, seed, fertilizer; these are your private costs. But it turns out that every spring and summer when you lay down the fertilizer some of this flows into the stream nearby and flows into a lake downstream, oftentimes resulting in large fish kills. All those downstream, the fisherman, the recreationist, and the landowners all incur a negative externality.

There are three ways in which we can address these externalities:

1- Government Regulation:

a) First, direct regulation is applied through technology-specific methods. This is where the government requires producers to use a certain technology to reduce pollution or emissions. The benefit is that monitoring costs are quite low. You don't need to have somebody out there constantly monitoring the amount of emissions because you know that technology is present and

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working. The downside is that it reduces the incentive for firms to find innovative ways to further reduce their emissions.

b) Restricting the quantity produced, either of the output or of the pollution being produced through production. The benefit of this, of course, is that now firms have reason to find innovative ways to reduce the pollution. The difficulty is that the monitoring costs are quite high.

2- Taxation: Economist Arthur Cecil Pigou suggested that we could impose a tax on the producer that would reduce the amount of production of whatever good is producing the negative externality. The benefit of this, of course, is that you would reduce the amount of negative externality (fertilizer) being imposed downstream.

Under a system of Pigouvian taxes, the government charges the corn company for the damage done by its pollution (\$10 per pound for example). By doing so it converts the external cost into an internal cost – internalizes the externality. In deciding how much corn to produce and what price to sell it at, the company will now include the cost of its pollution (paid as an emission fee) along with other costs. In deciding how much pollution control equipment to buy, the company balances the cost of control against its benefits, and buys the optimal amount. So a system of emission fees can produce both an efficient amount of corn and an efficient amount of pollution control.

In order to achieve that result, the government imposing the fees must be able to measure the cost imposed by pollution. But, unlike direct regulation, the use of emission fees does not require the government to measure the
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cost of preventing pollution—whether by installing air filters or by producing less steel. That will be done by the steel company, acting in its own interest.

3- Property rights solution suggested by economist Ronald Coase. We have just described the theory of externalities, as it existed before Coase. Its conclusion is that, as long as externalities exist and are not internalized via Pigouvian taxes, the result is inefficient. Charging the polluter an emission fee equal to the damage done by his pollution eliminates the inefficiency. In some real world cases it may be difficult to measure the amount of the damage, but, provided that that problem can be solved, using Pigouvian taxes to internalize externalities produces the efficient outcome.

Coase said if property is well defined, divisible, and defendable, and negotiation costs or transaction costs are low, simply by assigning the property right, we could overcome the externality:

– Well defined: what is the object over which the owner has rights; in what manner may this owner exercise his rights? – Divisible: are these rights separable and can they be traded? – Defendable: are these rights enforceable? Does law recognize these rights?

Let's assign the property rights of the lake to the farmer. You may first imagine that the farmer doesn't change his or her behavior. However, now the fisherman and recreationist downstream can negotiate with the farmer to reduce the amount of fertilizer that he or she lays on the field. This reduces the amount of fish death downstream.

We could also, conversely, assign the property rights to the fisherman, whom you may initially think would require the farmer to stop using fertilizer on the land and may decide to take the farmer to court (sue him legally). However, now the farmer has the incentive and the knowledge to negotiate with the fisherman downstream. The fisherman will allow some positive amount of fertilizer, but not as much as before.

In each scenario, we come to a solution that internalizes the externality or overcomes it. The fisherman and the farmer now know the cost of the externality and are able to negotiate in order to overcome it. The benefit of this to other regulations is that the monitoring costs are very small. Not only that, there is incentive for either the farmer or the fisherman to find ways to reduce the negative impact on social welfare. Coase's theorem overcomes these monitoring costs by using local information that is not available to an agent determining the taxation or regulation. He won the Nobel Prize in Economics in 1991 for his work