

MICROECONOMICS AND POLICY ANALYSIS - U8213

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Class Notes - Spring 2001

Dealing with Externalities - Coase

Wednesday, April 4th

Reading: Coase, Medema

Coase: "The Problem of Social Cost"

Claim: The institution of a market won't achieve an efficient allocation when externalities are present, therefore you need optimal taxation, subsidies and corrections.

Coase claims that an efficient allocation will always be achieved through bargaining among individuals. If afflicted individuals can bargain and **there are no transaction costs** then bargaining will achieve a socially optimal allocation. Individuals will achieve the socially optimal allocation no matter how the initial legal rights are allocated. In other words, under the assumption of no transaction costs, the legal rights will have no impact on the outcome.

Socially Optimal Allocation: The allocation will be achieved by the person who values it the most.

Reciprocal Nature of the Problem (Coase, p 96)

His insight is that externalities in general are reciprocal nature. Often it is thought if A is inflicting harm on B, how should we restrain A? However, if we restrain A, then we are inflicting harm on B. The real question is: should A be allowed to harm B or should B be allowed to harm A?

He uses the example of a doctor who extended his office to meet the wall of a confectioner. Then the doctor complained that the confectioner's noise disturbed his work. "To avoid harming the doctor would be to inflict harm on the confectioner." (Coase, p96)

The Example of the Cattleman - Using a Pricing System(Coase, p. 96)

A pricing system may be used to help solve the problem – the damagin business has to pay for the damage caused (Assuming the pricing system is without cost).

The example that Coase uses is that a cattleman grazes his cattle next to crops owned by a farmer on neighboring land. Using this pricing system, any damage to the crops would be paid by the cattle owner. Specifically, costs could be represented as follows:

Number in Herd (Steers)	Annual Crop Loss (Tons)	Crop Loss per Additional Steer (Tons)
1	1	1
2	3	2
3	6	3
4	10	4

Also, the cost of fencing the farmer's property is \$9 and the price of the crop is \$1 per ton.

The options that can happen if the cattle owner is held liable for property damage are the following:

1. Add or remove steers from his herd

If the cattle owner chooses to increase his herd from 2 to 3 steers, then the cost imposed would be \$3 to pay for the additional crops damaged. The cattle owner will not add additional steers unless the return for that steer is more than \$3.

2. Pay for the fencing around the farmer's crops

If the cattle owner would like to have a herd of 4 steers, it would be cheaper (than the total of \$10 for crop loss) for him to pay for fencing the farmer's field.

3. Pay farmer not to grow crops

Coase argues that if the presence of the cattle owner has any effect on the amount of crops planted, it would be that the farmer would plant less. It may get to a point that the receipts from the undamaged crops would be less than the cost of planting. Therefore, it may be profitable for both the cattle owner and the farmer to make a bargain that the cattle owner would pay for the land to remain uncultivated.

However, Coase shows in his example that the same outcome would occur if the cattle owner was not held liable for crop damage. Therefore, the *farmer would have to pay the cattle owner* for not adding steers (or having less steers) to his herd, pay for the fencing, or quit planting crops. He states "it is necessary to know whether the damaging business is liable or not for the damage caused, since without the establishment of this initial delimitation of rights there can be no market transactions to transfer and recombine them. But the ultimate result (which maximizes the value of production) is independent of the legal position if the pricing system is assumed to work without cost" (Coase, p.104).

Medema Article

The assumption of zero transaction costs is important although not necessarily a reality. Information is limited and finding the optimal tax or amount of pollution is difficult. In an alternative solution this framework is important because the legal framework establishes property rights and forces an outcome among people. Different kinds of intervention lead to different requirements for success. If you desire a socially desirable outcome than the method of property rights is better and you don't need to know the socially desirable outcome because individuals figure it out and there are less information requirements.

Participants probably know best. Maybe it should tell us something about the imposition of property rights that are established and what kind of legal framework we want. We want institutions that allow bargaining.

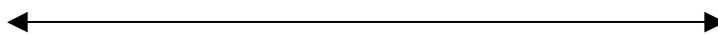
Two ends of the spectrum:

No transaction costs

high transaction costs

No intervention

third party interventions (no bargaining)



What is implied by the Coase Theorem? Medema states (p.213):

1. efficiency thesis – the outcome of the bargaining process will be efficient regardless to who is initially assigned the right.
2. invariance thesis – the outcome of the bargaining process – the allocation of rights and resources (although not necessarily the distribution of income) – will be the same regardless of who is initially assigned the right.” The final allocation will be at the same point on the contract curve regardless of the initial assignment of rights.

Medema concludes (p. 230) “If coordination is costless, both markets and government function optimally; if coordination is costly, both markets and government can be expected to function sub-optimally...the task for legal-economic policy, is, at least in part, to assess the magnitude and influence of these relative coordination costs and the resulting implications for alternative institutional-policy arrangements.”