

While the short-run damages associated with bankruptcy can seem to loom large, it is quite possible that going out of business is optimal from society's perspective. In countries with high environmental values, a pollution tax or other environmental control options might be quite large—hence, it is possible that profitable production for many goods might only be in locations that are less concerned about environmental damages, usually lower-income countries. This is almost certainly efficient...equity, as always, is in the eye of the beholder. But, if those in rich countries work to prevent this from happening on the grounds that the poor in other countries are going to suffer environmental damages, they will be making those poor people worse off, as they themselves see it. One dimension of the bankruptcy issue deserves a bit more discussion. If bankruptcy is *a priori* seen as an option in the face of a future environmental disaster, the firms in question may under-control the prevention of that disaster. The firm could go bankrupt eliminating their environmental liabilities and later sell their assets to another firm, the net effect of which could be more profitable than employing socially optimal controls all along. A similar issue relates to whether those damaged by, for example, noise from airports anticipate *a priori* that at a later point—when population surrounding the airport reaches a critical political mass—the can impose noise limitations or limitations on how late in the evening planes can operate. If this political “fix” is anticipated, too many households will move near to the airport, resulting in non-optimally high noise exposure over the short-term and non-optimally costly noise abatement efforts in the long term.

6) The appendix examples were mostly of a discrete nature (the player goes to one team or another and the pollution is either eliminated or it is not). How would the Eurosteel/Healthspa example be modified if the steel company had an increasing marginal cost of cleanup? (Hint: the water allocation example is instructive here, because at A^* the marginal values of water are equated).

The numbers chosen in the examples were used primarily to make the Coase point as clearly and simply as possible. In the case of continuously variable damages and costs, one would generally expect a mixture of some cleanup effort undertaken and some compensation, regardless of property rights assignment. As with the water case, the result with the air pollution case is that the optimal cleanup level would occur (where $MB = MC$) regardless of whether Eurosteel or Healthspa have property rights in pollution. A useful example might be to specify the equations in the water example algebraically and solve for the optimum—and then noting that those marginal benefits equations could represent two users of the air as well as two users of the water.

Chapter 2. Discussion Questions

1) In this chapter, households are assumed to be interested in “maximizing their utility.” Do you think that households are cognitively able to perform such maximizations? Is it possible that, even if “errors” are made, that the aggregate implications of individual behavior might be robust to such errors? Why or why not?

This question is foreshadowing concerns of perceptions that turn out to be critical to environmental valuation later in the book. It is somewhat controversial to argue that individuals have the cognitive ability to optimize in the way discussed in this chapter (failings of this type are the bread-and-butter of behavioral economists). Particularly in the environmental context, though, can a small improvement in air quality be evaluated as precisely as goods that have been purchased many times (e.g. a can of noodle soup, a tomato, or a hamburger)? It is possible that individuals might make errors but the market prices might still appropriately represent marginal cost and marginal benefit, if the random errors across individuals were to “wash out,” canceling each other.

2) We have assumed “self-interest” on the part of households in this chapter. Self-interest is not, however, necessarily the same thing as “selfishness.” What are the implications for the level of household residuals and resulting level of environmental quality if households cared about the welfare of their fellow humans (i.e. had a “social conscience”)? Do you feel that it is likely that household concerns for others’ welfare will result in optimal levels of residuals and environmental quality? Why or why not?

Self-interest and competition are critical to the welfare conclusions economists like to draw. Self-interest is not necessarily the same as selfishness however—a Good Samaritan would still want more resources to pursue his or her goals. However, it is dangerous to go down this path too far, because if literally anything can enter the utility function, then economics becomes a non-science; there would be no behavior that would be inconsistent with some utility function that would lead to that behavior. Hence, economics would cease to have predictive content. It does, however, seem that some people have more of a social conscience than others and this could be viewed as raising the subjective benefits of doing things that enhance environmental quality. It is unlikely that having a social conscience would be sufficiently widespread among people (or that those with social consciences would be optimally concerned) to result in optimal levels of residuals hence environmental quality.

3) Firms are taken here to be profit-maximizers. What other goals might firms be pursuing? What role might advertising, something ignored in discussions of competitive interactions among households and firms, take in the context of our interest in the environment? Would you expect “green behavior” to be advertised by firms if they engaged in environmentally friendly production methods? Do you feel that it is likely that the differences in costs of production with “green behavior” could be completely offset by higher prices that households might pay to consume goods produced in more environmentally friendly ways? Why or why not?

Firms are likely to be primarily interested in profit maximization, especially for smaller family-owned enterprises for which that is equivalent to utility maximization. The stockholders (owners) of large corporations attempt to provide incentives for their managers to profit maximize. Advertising presents a difficulty for economists—if it can “move” preferences, then the notion of “consumer sovereignty” evaporates along with the long-run welfare conclusions. Usually people think that “other people” are swayed by advertising but not time, and of course much advertising is informative in nature,

providing information to better allow individual utility maximization. If people care about environmental quality as discussed in Question 2, then “green advertising” might be profitable—some would be willing to pay higher prices for goods that are produced in more pro-environment ways. Again, in the absence of regulation it is unlikely that the proper amount of green behavior would occur if relying exclusively on this behavior. An individual in, say, selecting between two otherwise identical packages of coffee (with one grown sustainably without pesticides, etc.) would have a tendency to free ride, buying the cheaper coffee, since that individual would—correctly—know that he or she is too small to make a difference.

Chapter 3. Discussion Questions

1) Environmental groups have sometimes opposed pollution taxes on the grounds that they “sell the right to pollute,” arguing that by merely paying the taxes polluters can continue to pollute as much as before. What is wrong with this argument from an economist’s perspective?

Well, it is certainly better to sell the right to pollute than to give it away free! What those against economic incentives do not fully understand is that the quantity demanded of any activity depends on its price. Those unacquainted with economics tend to think of demand curves as being vertical (“needing” things). If the tax is set equal to marginal damages, then the right amount of pollution will occur under the tax—and those that are best at cleaning up (low cost of cleanup firms) will be the ones doing it. So we get the right amount of environmental quality and we get it at least cost in terms of foregone other goods.

2) If policy-makers have enough information to accurately calculate P_R , should they not, at least in principle, be able to know what the optimal level of residuals, R^* is? What would be the difference in the short run between having a “cap and trade” system in which R^* amount of emission rights were distributed to firms and households in proportion to their previous R^0 levels of emissions? What would be the difference in the long run? How would the cap and trade system described have to be modified to yield long run results that are identical under the pollution tax and the tradable emission rights schemes?

In the short run, there would be no difference—if the optimal marginal damage tax, P_R , were charged and resulted in R^* amount of emissions, then if R^* amount of emissions were distributed to the firms, the price they would sell for would be P_R . (This abstracts from the “small numbers case,” although the lack of uniqueness in either price or quantity is unlikely in practical settings). In the long run, the tax would result in more costs facing the firms in the polluting industries (because they have to pay the tax or cleanup for each tonne of pollution) than would be the case if emission rights were granted, perhaps in proportion to last year’s pollution. Hence, in the long-run the polluting industry would be non-optimally larger under freely distributed emission rights. If all rights to pollute had to be purchased, then the two approaches would be identical in both the short and long runs. But, equity can matter.