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**Lecture 15: Externalities and Solutions**

1. Recall externalities
   1. Normally, when a buyer and seller make an exchange, only they are affected by the exchange.
   2. But an *externality* is a good where there is a cost or benefit imposed on a third party.
      1. That a third party is involved is why donations or other altruistic acts don’t count as an externality.
   3. A negative externality is a cost imposed on others; we have too many things with negative externalities because the costs are not fully reflected in the price.
   4. A positive externality is a benefit imposed on others; we have too few things with positive externalities because the benefits are not fully reflected in the price.
2. Internalization
   1. Externalities are undesirable because the acting agent isn’t considering the full costs or benefits of his/her actions.
   2. If we *internalize* the externality (somehow force the agent to consider the full or benefits), we can solve the market failure.
   3. The easiest way to internalize is to establish private property; after all, externalities exist because of a lack of private property. There are many real and potential examples but the basic theme involves people owning, and thus profiting, from the resource.
      1. Hunters, campers, hikers, fisherman, etc. are all willing to pay for the right to use the land which generates the incentive to not only protect the immediate things these consumers care about (birds, fish, deer) but also the environmental support for these things (trees, bugs, air quality, rainfall). The revenue can be quite large; in 1998, International Paper Company’s 1.2 million Mid-South Region wooded land brought in $5.5 million.
      2. Small communities in Namibia own roaming elephant populations and are allowed to harvest the elephants for their ivory. Tourists also pay to see them in the wild. Hunters come, too. This not only generates the incentive to make sure you don’t kill all the elephants, but that you police against poachers. With ivory prices on the rise, elephant populations where no one owns them are threatened; but when people do own them, there is *greater* incentive to preserve them.
      3. Nowhere is the example of how endangered African wildlife can thrive when placed under private property than in…Texas? <http://www.youtube.com/watch?v=4r9-WeNXzTQ&feature=youtu.be>
3. Pigou
   1. Another way to solve the externality issue is with a Pigouvian tax or subsidy:
      1. Tax the behavior until MCp equals MCs.
      2. Subsidize the behavior until MBp equals MBs.
   2. Recall from earlier how subsidies and taxes created deadweight loss. Now they *reduce* deadweight loss by correcting an externality.
   3. Pigouvian corrections are great correcting problems since they don’t require a specific action and allow people to adapt as they’d like. This is particularly important from a national policy perspective since making a rule for many millions will likely not be the best choice for a significant number of individuals.
      1. For example by taxing gasoline instead requiring everyone to carpool, some people will carpool in a response to the change in price but for others, where carpooling’s not a good option, they are free to adapt in other ways.
      2. Remember, prices solve problems.
   4. The problem with Pigou is the difficulty of calculation. These curves are nearly impossible to determine so how do we know how big the tax or subsidy should be? What happens when the curves shift? What if they are shifting all the time?
      1. One solution is to low-ball the correction to make sure you don’t make a bad situation worse and since something is better than nothing, you can still reduce deadweight loss.
4. Tradable Allowances
   1. In tradable allowances, the government caps pollution (or fishing, or whatever) at a certain level and then allows private individuals to purchase the ability to pollute (or fish, or whatever).
      1. Note how this is a form of private property.
   2. These allowances are private property: you can buy or sell them.
   3. Thus you must pay to externalize a cost, which, notably, is the same as a tax. The difference is you have direct control over how much negative externality there is, rather than having direct control over how much more the negative externality will cost.
   4. The Clean Air Act of 1990 tried this with SO2
      1. Each allowance grants the right to emit one ton of SO2
      2. By 2005, SO2 emissions fell to 60% of 1990 levels even as electrical generation increased by 40%.
      3. An interesting effect is that environmental groups can buy emission rights from industry and then retire the rights to create more clean air.
5. Of Taxes and Allowances
   1. The government’s role in taxes and allowance are effectively one of setting the right price and of setting the right quantity.
   2. If information isn’t a problem, there is no economic difference between the two.
   3. But sometimes you have a pretty good idea what the right quantity will be (X amount of sulfur will kill the fish in the lake) and other times you have a good idea on the right price (because we know the cost of pollution but with demand and supply shifting, setting a quantity doesn’t make sense).