Notes on Cost-Benefit Analysis

Cost-Benefit Analysis simply implies that buyers should pay for the good/service if its benefit exceeds the cost. When faced with difficulties to price the good/service (such as clean air), we use Hedonic Pricing. Hedonic Pricing incorporates the different components or inputs that are associated with the good. That same good is then priced according to these components. For instance, two identical houses in different locations may be priced differently since the location is a component that changes the value of the house. The air quality, safety, and aesthetics of the location can play a role in the pricing.

Notes on Transaction Costs

Transaction Costs are the costs of making and enforcing the exchange of entitlements. High transaction costs can be prohibitive. This means that with high transaction costs, an exchange may not occur since it will be more costly than necessary. However, if the transaction costs are low, then more negotiations and exchanges may occur. An example would be a neighbor who just purchased a drum set. Your neighbor is aspiring to become a great drummer, but is making a lot of noise in the process. The noise is disruptive especially when you are trying to go through the materials for your favorite class. If you are friends with that neighbor and are comfortable enough to discuss the situation (low transaction costs), you will do so since you know that your friend would understand. He may limit the amount of time he practices when you're around and you may even come up with some optimal arrangement. However, if you barely know the individual, then it may be a much bigger ordeal to communicate with the person. The individual may be less inclined to suit your needs since being a drummer demands a hefty amount of practice. Hence, you may need to get an outside agent (could be the landlord) to talk to the neighbor. This form of negotiations, alone, can cause more effort on your part as well as more awkwardness after the incident. Even worse, an optimal amount of allocation is not achieved since either the drummer becomes agitated and makes even louder, more frequent noises, or the drummer just stops completely.

Monopoly Hold-out Problem and Eminent Domain Notes

Each person involved in the negotiations are analogous to monopolies who possess their lands as their good. Their true valuation of the house is private information and they can easily place a very high markup on their property when asked how much they are willing to receive for the land. Now, the state valuation of the highway is public information so everyone knows it. Each selfish individual has an incentive to try to take most of the money in the pie, leading to very high costs of purchasing the house. This cost is prohibitive and the state may not end up selling. To resolve this situation, the government uses the eminent domain law. They purchase the properties based on the valuations of some real estate agents. This structure has its own flaws, too, but is undeniable much better than letting the monopoly hold-out problem persist.

Notes on the Free-Riders:

Free-riders may be present when there are more than two parties involved in the transaction and the benefit of a certain good or service outweighs the cost. This occurs because everyone has an incentive to depend on someone else to pay. It causes an independent market to fail to monitor itself. An example would be if you are on a car trip and you initially ask everyone to "chip in." However, there may be an individual or two who will pass the bucket of contributions along because they are "broke" or forgot to bring some cash. They then would have others carry on the cost of the car trip (mileage, gas) while enjoying the benefit.

Monitoring, Enforcement, and Avoidance Costs

These can make transaction costs high and make private negotiations prohibitive. This is because transaction costs are the costs of making and enforcing the transaction or exchange of entitlements. However, you may ask why we need it. This is because people may not be willing to uphold their promises of a service or compensation. Therefore, we need some monitoring or enforcement method to make sure that the agreement holds.

Notes on the Coase Theorem:

It is first important to remember the two criteria that need to hold for the Coase Theorem:

(i) There must be zero transaction costs
(ii) Mutually beneficial trades are always made when transaction costs are low

Having these hold, what's the relevance of this idea? Well, it says that however the entitlements are initially allocated

(1) The outcome will be efficient
(2) The outcome will be the same when the changes in the distribution of wealth do not affect consumption patterns

An interesting example would be an auction of a painting. Let's assume that some reincarnation of Leonardo da Vinci and Picasso attended the auction. Leonardo values the painting at $7 million while Picasso values it at $8 million. After the bidding occurs, it is found that Picasso valued the painting the most. Recognizing his prestige and admiring his work, the original owner of the painting decided to just give the painting to Picasso at no cost. We know that no one else in the room would try to purchase the painting from Picasso since no one's bid is higher. This implies that their valuation of the good is less than Picasso's.

Let's now explore a different scenario. Before the auction, the original owner saw the attendees of the event and instead of holding the auction, decided to give the painting to Leonardo since he is the favorite artist of the owner of the painting and would be honored if a well-renowned artist owned the painting. Given that Picasso values the painting more, he might try to purchase the painting from Leonardo. He is then able to obtain the painting at the right price.

What are the problems with this setup? First, transaction costs are, at times, very high. This makes the private transactions under the Coase Theorem not feasible. Moreover, how about if Leonardo had a huge surprise inheritance that he received from a relative (some form of a redistribution of wealth)? Then, due to the wealth effect (in other words, Leonardo feels very wealthy) his valuation of the painting increases to $10 million. He may then refuse to sell the painting to Picasso because under this scenario, he values the painting much more than Picasso. This situation can also break down the Coase Theorem since the consumption pattern would then be different with changes in wealth.

Cost-Benefit Analysis Notes:

In this analysis, we consider the costs of the negotiation/activity and weigh them against the benefits reaped from the efficient outcome. If the benefits outweigh the costs, the negotiation should occur if the Transaction costs are zero, under the Coase Theorem. If the transaction costs are low, it is still possible to have private negotiations as long as the benefits outweigh the sum of all of the costs. However, it is not always guaranteed that when transaction costs are low a high-value situation occurs. This is because information may be asymmetric, meaning that some information is not public information so there are parties in the negotiation that could downplay their benefits and exaggerate their costs (think of the free-rider and monopoly hold-out problems).

Fencing in and Fencing out (application of the cost-benefit analysis) Notes

Just like in the lecture and the book, take the example of a farmer whose products are trampled over by the cattle of the rancher. In theory, if it is cheaper for the farmer to make the fence than for the cattle owner (rancher) to do so, and the cost is less than the benefit that he gets from having the fence, he should build it to reach an efficient outcome. If it is cheaper for the rancher to build the fence and that cost is less than the benefit to the farmer, the farmer can pay the rancher to build the fence. The answer really comes down to how the outcome looks after the cost-benefit analysis.

Now, once liability is decided and is placed on the rancher, he has to make a cost-benefit analysis when making a decision to invest on another cow. When deciding whether to purchase the additional cow, he must weigh in whether the cost of having that cow is less than the additional profits he derives from it. If the benefit is less than the cost, he should not buy the cow. On the other hand, if the farmer is liable and the cost to her of having an extra cow roaming around is more than the profit that the rancher gets from it, she should “bribe” the rancher not to buy that extra cow.