# Chapter 10

# External Costs and Benefits

- private cost - Sum of costs borne by the decision maker
- social cost - Sum of all costs
- externality - cost or benefit imposed on others

## 10.1 Costs Imposed on Others

1. Measuring the externality
    - The rectangular region between the social and private marginal costs
    - In practice, difficult to estimate
2. Welfare Analsis
    - see exhibit 3.2 for an illustration
3. Pigou Taxes
    - A tax equal to the amount of an externality
    - see exhibit 13.3

- Why does this kind of tax work?
  - firms typically overproduce when producing with a negative externality
  - Tax forces firm to internalize the entire cost on the firm

4. Cap-and-trade
   - A system of tradable permits to produce goods that create externalities
   - Provides incentive for some firms to produce lower level of externatlities if cost of transition is low
   - See exhibit 13.4 for a comparison between Pigou Tax versus Cap-and-Trade
   - Both can have similiar effects on outside entities

## 10.2 The Coase Theorem

- Transaction cost - Cost of negotiating or enforcing a contract
- In the absence of transactions costs, all externalities are internalized and social gain is maximized
- see exhibit 13.5 for two examples

1. Implications from the Coase Theorem
   - In the absence of transactions costs, social gain is always maximized
   - In the absence of transactions costs, all externalities are internalized
   - In the absence of transactions costs, the assignment of properaty rights does not matter

- In the absence of transactions costs, the choice of liability rule does not matter
- Example: Smoking Bans in Bars
  - non-smokers can bribe smokers to stop smoking
  - Do costs from second-hand smoke equal benefits from smoking
  - transaction costs would probably apply (could approach the wrong person and get attacked)
  - should bar owner charge higher rate to smokers?

2. Why is a Pigou Tax harmful when transaction costs exist (based on Coase Theorem)?
   - see exhibit 13.6