OUTLINE — October 3, 2018

- Externalities, continued
  - Coase Theorem
  - The Optimal Subsidy or Tax
- Asymmetric Information
  - Adverse Selection
  - Moral Hazard
- Behavioral Economics

MT#1 reflection due on bCourses by midnight Thursday
PS 2 due October 15/16 in section

Positive Externality

- Benefits accrue to people who are neither the buyer nor the seller
  - *Education !*
- Private Marginal Benefit
- External Benefit (or, marginal external benefit)
- Social Marginal Benefit (or, marginal social benefit)

Positive Externality

Negative Externality

- Marginal Private Cost (or, private marginal cost)
- Marginal Damage Cost (or, external cost)
- Marginal Social Cost (or, social marginal cost)

Negative Externality

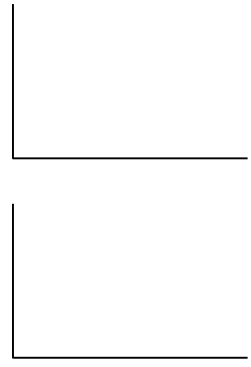
Coase Theorem

- Solution without government possible
- Requires
  - Well-defined property rights
  - No costs to bargaining
  - Only a few people
- Otherwise: government intervention

Encourage behavior with subsidy

- Private market produces too little when there are positive externalities
- Encourage with subsidies
- Example: Prof. Olney buys $48 Bart ticket each month, paid through pre-tax payroll deduction
  - $3 paid by Bart
  - $10 paid by UC Berkeley
  - $10 paid by federal government
  - $3 paid by state government
  - Which means just $22 is paid by Prof. Olney

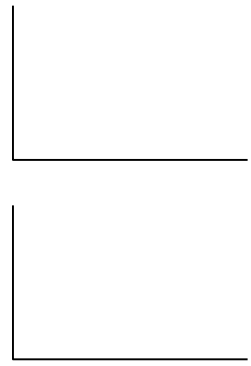
Positive Externality: A Subsidy



Externalities & Taxes or Subsidies

- The challenge: what is the ***right (or, optimal) size*** of tax (negative externality) or subsidy (positive externality)?
  - It's positive (not normative) analysis
  - "Right" or "optimal" means generating socially optimal quantity

Negative Externality: A Tax



Externalities & Taxes or Subsidies

- The challenge: what is the ***right (or, optimal) size*** of tax or subsidy?
  - It's positive (not normative) analysis
  - "Right" or "optimal" means generating socially optimal quantity
- Taxes discourage activity generating negative externalities
  - If Tax > MDC, then
  - If Tax < MDC, then
  - Only if tax = MDC, then
- What should the tax revenue be used for?
  - Offset (or, cover) costs represented by MDC

When q=0 is socially optimal

Cigarettes & cigarette taxes

Market Failure: Asymmetric Info

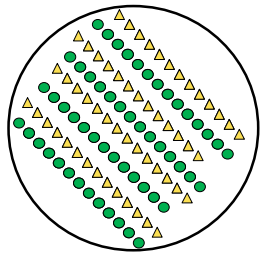
- When one party to a transaction has relevant info but doesn't share it with the other party
- Effect: markets fail . . .
  . . . to produce the quantity where
  p = MC = minimum ATC
- Two examples of asymmetric info
  - Adverse Selection
  - Moral Hazard

Adverse Selection

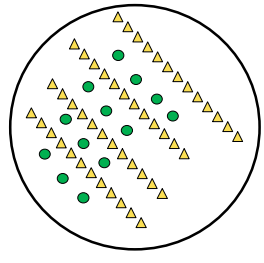
- "Adverse" means harmful or unfavorable
- When the selection of goods offered for sale is not a random selection but is instead an "adverse" (unfavorable) selection
  - Applies also to consumers buying insurance
- Occurs before transaction

Adverse Selection

Random Selection



Adverse Selection



Adverse Selection & Labor Markets

- You are an employer
- Workers are heterogeneous
  - A mix of high- and low-quality workers
- You want to hire high-quality workers
- You can't tell from the application who is & isn't a high-quality worker
- *Do you offer an above-market, at-market, or below-market wage?*
  - *A. Above-market wage*
  - *B. At-market wage*
  - *C. Below-market wage*

Adverse Selection

- Car Insurance
  - Good drivers or bad drivers?
  - State requires everyone to get car insurance
- Health Insurance
  - Healthy people or unhealthy people?
  - Effect on cost of insurance?
  - Affordable Care Act requires everyone to get insurance
- Consumer credit
  - Good credit risk or bad credit risk?
  - Effect on availability of credit?

Solutions: Screening

- Screening: the employer/insurance company (the party with less information) screens applicants
  - Is there a low-cost way to screen applicants?
  - Sort applicants based on characteristics
  - Note: With perfect screening, there is no asymmetry in information . . .

Solutions: Signaling

- Signaling: the employee/insured party (the party with more information) offers a clue
  - Do signals have biased effects on markets?
  - Example: "ban the box"

Solutions: mandatory enrollment

- Mandatory enrollment is another solution
  - Require everyone to buy insurance so that pool of applicants/purchasers remains full random sample

Moral Hazard

- When one party to a contract changes behavior after the contract is signed
  - Part of a transaction that takes time to complete
- Occurs after contract is signed

Moral Hazard

- Insurance
  - More careful or less careful?
  - Effect on cost of insurance?
- Bank Bailouts
  - More careful or less careful with risk?
  - Effect on likelihood of bank failure?
- Mortgage Rescue Plans
  - More careful or less careful with $ commitments?
  - Effect on likelihood of mortgage default?

Solution: Monitoring

- Monitoring is a solution to moral hazard
  - Low-cost way to monitor behavior
  - Cancel contracts that are low-quality high-cost
  - Maintain contracts that are high-quality low-cost
  - Note: With perfect monitoring, there is no asymmetry in information

Behavioral Economics

- Another instance of market failure
  - . . . Failure to reach p=MC at minimum ATC
- Here, challenge assumptions of
  - Utility maximization
  - Profit maximization
- Interested?
  - *Econ 119 (Psych & Econ)*
  - *Econ 138 (Behavioral Econ)*

Example: Risk Aversion

- Two payouts, both with same mean (6.50).

Die roll	Payout A	Payout B
1	0	7
2	4	5
3	8	9
4	15	6
5	3	4
6	9	8

- Which would you prefer? A? B? Click C for "either"

Example: Loss Aversion

- Two payouts, both with same mean (6.17) & SD (10).

Die roll	Payout A	Payout B
1	-5	0
2	10	10
3	15	25
4	-8	0
5	10	1
6	15	1

- Which would you prefer? A? B? Click C for "either"

Example: Loss Aversion

- Do people hate losses more than they like wins?
- If so, implications for risk-taking behavior.
  - You own a stock that you bought for $50 / share and it is now selling for $30 / share. Will you sell?
  - You bought a house for $800,000. If you sold it now, you'll only get $600,000. You've been offered a new job at a good salary that is 1,000 miles away. Will you sell?
  - You declared a major in X and have taken nearly 80% of the classes you need to complete the major. You hate the major. Will you change majors?