

ECNS 432

Ch. 4

Ch. 4: Valuing Benefits and Costs in Primary Markets

- Check out problem #3 from Ch. 4 exercises.
- Primary Markets: Those markets that are directly affected by a policy or a project.
 - Ex. Suppose a city builds a new subway system
 - Primary markets
 - Market for public transportation
 - Market for materials used to build the subway
 - Secondary markets
 - Market for gasoline if some commuters switch from driving to riding subway

Ch. 4: Valuing Benefits and Costs in Primary Markets

- What we want to cover
 - Why conceptually correct measures of benefits and costs are often not used in CBA
 - Examine how effects of policies in primary markets can be valued
 - Describe the valuation of resources purchased in primary markets as inputs, stressing opportunity cost

Ch. 4: Valuing Benefits and Costs in Primary Markets

- Q. Why might conceptually correct measures of benefits differ from the measures used in CBA?
 - Consider first that the true MV for a good is reflected in the mkt. price
 - The conceptually correct measure
 - But, why might observing this price in practice be difficult?
 - Examples
 - When gov't policy involves producing a public good
 - When an externality exists
 - Monopoly pricing
 - Non-market goods
 - For most of the first half of the class we will focus on the conceptually correct measures of benefits and assume the necessary demand curves are known.

Valuing Benefits in Efficient Markets

- Relatively straightforward when a policy impacts supply curves of goods in *efficient* mkts.
 - Rule: Gross social benefits of a policy equal the net gov't revenue generated by the policy plus the resulting changes in CS and PS
- Two cases to consider:
 - (i) Policies that directly affect the quantity of a good available to consumers
 - (ii) Policies that shift the supply curve down by altering the price or availability of some input used to produce the good in question

Case (1a): Direct Increases in Supply Available to Consumers

- Suppose a gov't project increases the supply of a good in a well-functioning market, but the increase is so small the price is unaffected.
- If gov't sells additional units at mkt. price, then this may be treated like added producers in an efficient market.
 - Q. What does the demand curve look like in this example?
 - Q. What happens to supply?

[show graphically]

- Q. Are CS and PS affected?
- Ans. No, because demand is horizontal, P is unaffected and, thus, CS and PS are unaffected (PS is unaffected because pvt sector continues to operate on original supply curve)
- Q. How much does the government collect in revenue?
- Ans. q_0abq_1 (this also represents a cost to consumers (taxes) that is offset by benefits that those persons enjoy in consuming the good.)
- So, revenues received by the government are the only gross benefits from the project...but, what have we ignored???
 - Costs of project inputs to the government.

Case (1b): Direct Increases in Supply Available to Consumers

- Suppose gov't adds a sufficiently large quantity of a good to a mkt. such that the price decreases.
[show graph]
- Q. What is the gain/loss to consumers?
- Ans. B/c price falls there is a gain to consumers = P_0abP_1
- Q. What is the gain/loss to producers?
 - Q. What happens to output they sell? Why?
 - Ans. Falls from q_0 to q_2 because they now only receive P_1
- Ans. B/c they continue to operate on original supply curve, they lose PS = P_0acP_1
- Q. What is the net surplus among pvt actors?
- Ans. abc
- Q. What is the gov't surplus?
- Ans. q_2cbq_1
- Q. Social surplus?
- Ans. q_2cabq_1
- Q. Again, what have we ignored?
- Ans. Costs of project inputs to the government.

Case (2): Reductions in Costs to Producers

- Similar figure as the last one, but now the supply curve shifts because decreases in MC allow pvt-sector producers to offer q' additional units profitably at each price.
- Q. What is the gain/loss to consumers?
- Ans. Same as last time
- Q. What is the gain/loss to producers?
- Ans. Difference b/w areas of triangle P_0ae and P_1bd .
- Q. What is the net gain to producer and consumers?
- Ans. $abde$
 - B/c no project revenue is generated, $abde$ is the *gross* benefit of the project
 - This is gross benefits and not net benefits b/c we have ignored gov't expenditures in purchasing inputs needed to undertake the project.

Valuing Benefits in Distorted Mkts

- If market or government failures distort the relevant product mkt, then project benefits should continue to be measured as changes in CS, PS, and net gov't revenues
- Will consider
 - Monopoly
 - Info Asymmetry
 - Externalities
 - Public Goods (may not get to)
 - Addictive Goods (may not get to)

Monopoly

- In contrast to competitive firms, monopolistic firms are not price takers.
- Monopolies decide, on the basis of how much output they choose to produce, what the price of the product will be.
- To better illustrate, consider the following demand schedule

Monopoly

- See that total expenditure is total revenue received by the monopolist
- Q. If a firm was the sole supplier of a good and faced this demand schedule, how would it max rents from its monopoly position?
- Ans. If it could, it would perfectly price discriminate and charge \$10 for first unit, \$9 for 2nd, \$8 for 3rd, etc.
 - Q. But, why is this rare in practice?
 - Ans. Must have perfect info on how much consumers are WTP for each succeeding unit.

Schedule of prices	Quantity	Total Revenue	Marginal Revenue
10	1	10	10
9	2	18	8
8	3	24	6
7	4	28	4
6	5	30	2
5	6	30	0
4	7	28	-2
3	8	24	-4
2	9	18	-6
1	10	10	-8
0	11	0	-10

Monopoly

- Suppose MC of production are constant at \$4.
- Q. What is the monopoly outcome?

[insert standard monopoly graph]

- Q. what is the DWL?
- Ans. abc
- If it were possible to break up monopoly into a large # of competitive firms, then we would reach the competitive equilibrium (i.e. point c)
 - \Rightarrow social surplus would increase by abc
 - In CBA, this would count as a benefit of the government's actions
 - Also, b/c the competitive price is less than the monopoly price, consumers would capture the monopoly producer surplus
 - Q. Is this a benefit we count?
 - Ans. No, just a transfer.

Information Asymmetry

- Ex. Sellers may have more info about the safety of a product than buyers
- Ex. Doctors may know more about medical care than patients
- Lets consider the case where sellers of a product have more info than buyers

[show graph]

- Q. What is the implication for PS under imperfect info?
- Ans. Increases by $P_u \Delta P_i$
- Q. Is there a DWL?
- Ans. Yes, abc
 - Suggests a rationale for gov't intervention to provide info and reduce DWL
 - Will also transfer surplus back from sellers to buyers

Information Asymmetry

- Q. Why is this situation not so clear cut?
- Ans. There are costs associated with the gov't obtaining and disseminating information
 - These costs do not explicitly appear in our diagram and could be large
- The circumstances under which info asymmetry is sufficiently important such that gov't intervention may improve social welfare vary greatly
 - Case 1: **Search goods**
 - Products w/ characteristics that consumers can learn about through pre-purchase examination. Here, information asymmetry is unlikely to be serious
 - Q. What would be a good example?
 - Ans. Student who needs a notebook for class can go to bookstore and easily learn about alternative notebooks

Information Asymmetry

- Case 2: Experience goods:

- Consumers can obtain full knowledge...but only after purchase

- Q. Some examples?

- Ans. Tickets to a movie

- Meal at a new restaurant

- House

- Q. But, does the market mitigate these types of info asymmetry to an extent?

- Ans. Yes! Online movie and restaurant reviews, warranties for durable goods, etc.

- The market demand for information provides incentives for 3rd parties to provide info for a fee (e.g. Consumer Reports)

Information Asymmetry

- Case 3: **Post-experience goods**

- Situation where intervention may be most likely to enhance welfare
- Learning through individual action likely to not occur
- Ex. Adverse health effects from prescription drug use

Employee exposure to unhealthy chemicals at work

- Here, the required info is expensive to obtain and individuals may be unwilling to pay for it, and 3rd parties may not provide the necessary info.

Externalities

- Can be positive or negative
- Can result from
 - A particular type of manufacturing technology (e.g. air pollution caused by a smokestack industry)
 - Interdependencies b/w consumers and producers or different groups of producers
 - E.g. beekeepers who unintentionally provide pollination services for nearby fruit growers
 - Caused by networks
 - E.g. the larger the number of persons who purchase a particular type of car, the greater the number of qualified service garages available to each owner.

Externalities

- Lets consider the case of a negative externality

[show graph]

- The vertical distance between the two curves is the amount those subjected to the neg. externality would be WTP to avoid it.
 - i.e. it represents the costs imposed by the externality on 3rd parties
 - This distance also depends on how well the mkt. compensates 3rd parties for the negative externality
 - Ex. Q. how might the mkt. compensate homeowners who live next to a pollution source?
 - Ans. With lower house prices

Externalities

- Q. What is the standard technique for decrease DWL due to a neg. externality
- Ans. Impose taxes
 - E.g. the supplier of the good could be required to pay t on each unit they sell...effectively shifting the supply curve of sellers to reflect the marginal social cost

[show welfare analysis on board]

Work through another externality
problem

Work through quiz