

Microeconomics, Module 19, "Market Power, Collusion, and Oligopoly" (Chapter 14)

(Overview and Concepts)

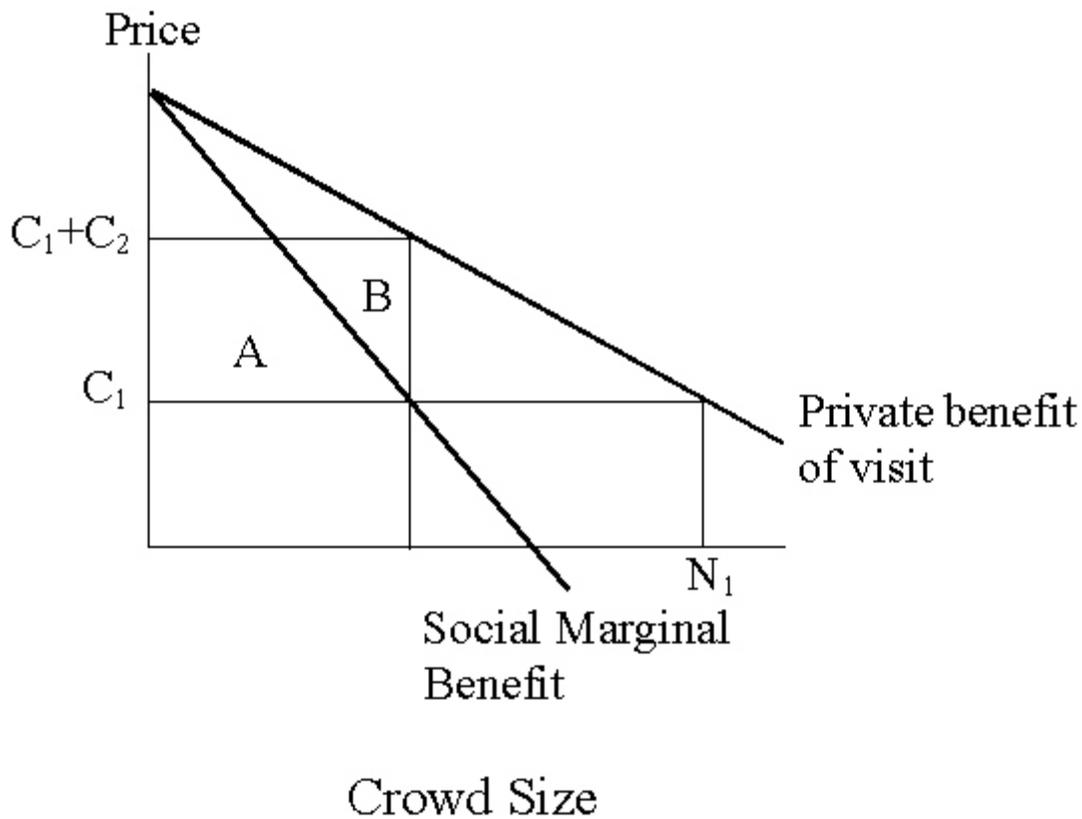
(See the attached PDF file.)

Part 1: Tragedy of the Commons

A property with no owner and no restrictions on its use is overused until it is valueless: its value drops to the value of the next best option.

*Dissipation of rents* means that all consumers' and producers' surplus vanishes.

A free museum becomes so crowded that its value equals the value of staying home. If an entrance fee is charged equal to the *pure social gain*, fewer people use the resource and still get no consumers' surplus. The *optimal* entrance fee *maximizes revenue*.

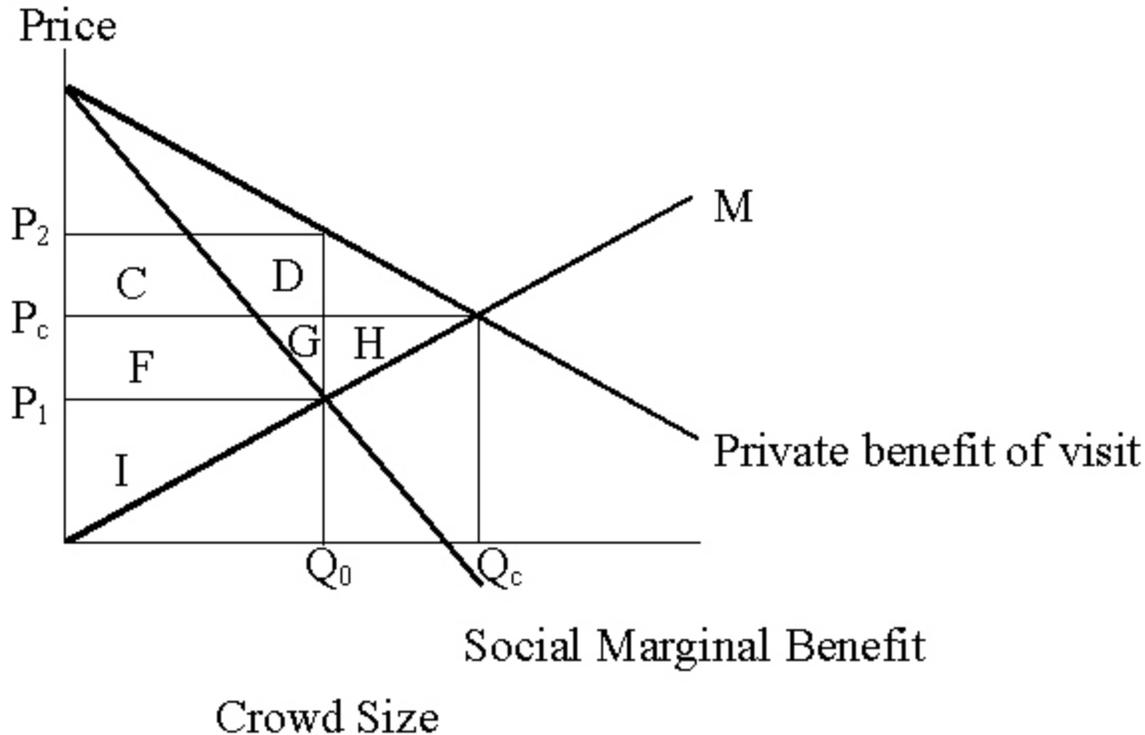


- If  $C_1$  is the opportunity cost,  $N_1$  people come, and the social gain is zero.
- With an entrance fee of  $C_2$ , the total cost is  $C_1 + C_2$  and the social gain is  $A + B$ .

This analysis assumes that crowding *reduces the benefit*. One could also assume that crowding *increases the cost*. If so, the marginal private benefit equals the marginal social benefit, but the *private and social costs* are different.

If consumers' *tastes differ*, those who like museums or don't mind crowds will benefit, so not all social gains are dissipated.

The marginal museum visitor is indifferent. But this is still sub-optimal, since the marginal consumer equates *private* benefits and costs, not *social* benefits and costs.



The marginal cost curve *slopes upward* because *opportunity costs differ among visitors* (the visitors have different tastes for coming to the museum).

- At  $Q_c$ , the total surplus is  $F + G + H + I$ .
- The optimal crowd size is  $Q_0$ , and the surplus is  $C + D + F + G + I$ .
- An admission fee of  $P_2 - P_1$  yields this optimal surplus, with  $I$  going to visitors and  $C + D + F + G$  going to owner as revenue.

#### Common Property

- Overused.
- No incentive to maintain or improve.

An admission fee does not eliminate the problem: The admission fee limits the number of entrants, but it does not limit the activity. A separate charge is needed for every activity.

## Part 2: Public Goods

Three possible definitions:

- *Non-excludable*: if it is consumed by one person, it is available to others.
- *Non-rivalrous*: if it is consumed by one person, it can be provided to others at no additional cost.
- *Both* non-excludable and non-rivalrous.

Examples:

- Common property, such as a pond for fishing (*a fishery*) is non-excludable but *not* non-rivalrous (if one person catches the fish, others can't).
- Movies in uncrowded theaters are non-rivalrous but *not* non-excludable.
- National defense, police, and city parks are non-excludable and non-rivalrous.

## Part 2A: Some Market Failures

Market failure means that a private market doesn't generate socially efficient amounts.

### *Non-excludability*

- Museum crowding comes from the non-excludability problem.
- Free riders create under-supply of goods (e.g., streetlights provided by the town).

### *Nonrivalry*

- Computer software pulled off the web is non-rivalrous because the cost of producing a copy is about zero.
- The efficient price, once the good has been produced is zero, like seats in an uncrowded movie theater.
- But if the price is zero, no one produces.
- If the price is greater than zero, then if the goods are produced at all, they are produced at inefficiently small quantities.

## Part 2B: Provision of Public Goods

- Public goods are often provided by the government.
- The government can assess taxes, build goods, and create social gains.

Example:

- ◆ Suppose two towns are identical, except that one has a factory that emits smoke.
- ◆ Renters move until the rent differential makes the two towns equally attractive.
- ◆ The factory emitting smoke doesn't install filters, because clean air is non-excludable.
  - If the city orders that filters be installed, the rent rises.
  - People are indifferent, if they all have the same tastes; the landlords are the only beneficiaries of the filters.
  - Landlords could convince the factory to stop polluting, making the free-rider elements less severe.

### Part 2C: Role of government

If the government provides the public good, it must decide how much to produce.

Voting by citizens can't express their intensity of want.

Asking people how much they are willing to pay creates incentives to exaggerate.

If people are taxed in proportion to the value they receive, they have incentives to understate the value.

### Part 2D: Schemes for eliciting information

If installing streetlights costs \$300, go to each person and say:

- They must put their value of the street-light in an envelope.
- If their number is more than \$300, the city builds the street-light and charges them the amount in envelope.

If the city builds if and only if the bids are more than \$300, the outcome is socially optimal.

A *Clarke tax* is designed to elicit information about the demand for public goods.

{Note: The final exam will not test the Clarke tax. A Clarke tax is a theoretical entity; we have few or no Clarke taxes in practice.}