

PUBLIC GOODS AND EXTERNALITIES

I. PRIVATE GOODS

- a. PRIVATE GOODS are produced through the competitive market system. They encompass the full range of goods available to the consumer in stores and shops
 - i. Two characteristics: RIVALRY and EXCLUDABILITY
 1. RIVALRY – when one person buys and consumes a product, it is NOT available for another consumer to buy and consume.
 2. EXCLUDABILITY – sellers can keep people who do not pay for a product from obtaining its benefits.
- b. PROFITABLE PROVISION
 - i. Consumers fully express their personal demands for private goods in the market.
 - ii. The MARKET demand for a private good is the horizontal summation of the individual demand schedules; refer back to figure 3.2 on page 61.
 - iii. Because firms can profitably “tap market demand” for private goods, they will produce and offer them for sale.
- c. EFFICIENT ALLOCATION
 - i. A competitive market not only makes private goods available to consumers but also ALLOCATES society’s resources EFFICIENTLY to the particular product.
 - ii. Competition among producers focuses them to use the best technology and right mix of productive resources. The result is PRODUCTIVE EFFICIENCY: THE

PRODUCTION OF ANY PARTICULAR GOOD IN THE LEAST COSTLY WAY.

- iii. Smallest amount of resources to produce the good.
- iv. ALLOCATIVE EFFICIENCY – The PARTICULAR MIX of goods and services MOST highly valued by society (minimum-cost production assumed)
 - 1. Competitive markets make proper assignment of resources.
 - 2. Equilibrium price and quantity in competitive markets usually produce an assignment of resources that is “right” from an economic perspective
 - a. Demand reflects the MARGINAL BENEFIT (MB) and supply reflects the MARGINAL COST (MC)

II. PUBLIC GOODS

- a. Public goods have the OPPOSITE characteristics of private goods.
 - i. NONRIVALRY – one person’s consumption of a good does not preclude consumption of the good by others. Everyone can simultaneously obtain the benefit from a public good such as national defense.
 - ii. NONEXCLUDABILITY- no effective way of excluding individuals from the benefit of a public good once it comes into existence.

- iii. These two characteristics create a FREE-RIDER PROBLEM. Everyone including nonpayers can obtain the benefit
 - 1. No market demand, so no chance to “tap the demand” for revenues and profits.
 - 2. Significant example is HOMELAND DEFENSE: benefits exceed the costs
 - a. Benefits accrue to all Americans (nonrivalry)
 - b. No practical way to exclude any American from receiving benefits (nonexcludability)
 - 3. Like national defense, homeland defense is a public good
- b. OPTIMAL QUANTITY OF A PUBLIC GOOD
 - i. The government has to try to determine demand for the public good via surveys or public votes
 - ii. Adhering to the $MB=MC$ rule, government can provide the “right” amount of the public good.
- c. MEASURING DEMAND AND COMPARING MB AND MC
 - i. Review table 5.1 on page 106
 - 1. The collective willingness to pay for the 3rd unit - \$5 MB – just matches the \$5 MC
 - ii. The table 5.1 and the $MB=MC$ analysis is called COST-BENEFIT ANALYSIS
 - 1. Should the needed resources be shifted from the private to the public sector? The answer is YES

if the BENEFIT from the extra public goods exceed the COST that results from having fewer private goods.

2. Example: COSTS – costs of constructing and maintaining highways; BENEFITS – improved flow of people and goods throughout the nation.
 - a. Stop the activity where $MC=MB$ or as close as possible.
 - b. Review table 5.2 on page 108; $MC=8$; $MB=10$

III. EXTERNALITIES

- a. In some markets, certain costs or benefits may escape the buyer or seller.
 - i. An EXTERNALITY occurs when some of the costs (negative) or benefits (positive) of a good are passed on, or “spill-over” to someone other than the buyer or seller; accrue to a 3rd party that is external to the market transactions.
- b. NEGATIVE EXTERNALITIES (COSTS)
 - i. Production or consumption costs inflicted on a 3rd party
 1. Example: Environmental pollution
 - ii. When producers shift some of their costs onto the community as spill-over costs, producers’ marginal costs are LOWER than otherwise. Supply curves do not include or capture all the costs
 1. Review figure 5.1a on page 109
 2. This is a MARKET FAILURE because resources are

OVERALLOCATED to the
production of the commodity.

c. POSITIVE EXTERNALITIES (BENEFITS)

i. Sometimes spill-overs appear as external
BENEFITS

1. Example: education

ii. When positive externalities occur, the
market demand curve lies to the left (or
inward) of the full-benefits demand curve

1. Review figure 5.1b on page 109

2. Resources are

UNDERALLOCATED to this
product.

d. INDIVIDUAL BARGAINING: COASE
THEOREM

i. COASE THEOREM – Government is
NOT needed to remedy positive or
negative externalities where:

1. Property ownership is clearly
defined.

2. The number of people is small.

3. Bargaining costs are negligible.

Government should confine its role to
encouraging bargaining between
affected groups or individuals

Review: A Forest Tale on page 111

e. LIABILITY RULES AND LAWSUITS

i. The government has erected a framework
of laws that define private property and
protect it from damage done by other
parties.

ii. Permit parties suffering negative
externalities to sue for compensation.

- iii. Clearly defined property rights and government liability laws help remedy some externality problems.
 - iv. Legal fees and major court delays are limitations to lawsuit and liability protection.
- f. GOVERNMENT INTERVENTION
- i. Government intervention might be needed to achieve economic efficiency when LARGE numbers of people or COMMUNITY INTERESTS are at stake.
 - 1. Government can use DIRECT CONTROLS and TAXES to counter negative externalities; it can provide SUBSIDIES or PUBLIC GOODS to deal with positive externalities.
 - 2. DIRECT CONTROLS- pass legislation to limit activity.
 - a. Example: clean-air legislation
 - b. Direct controls raise the marginal cost of production because the firms must operate and maintain pollution control equipment.
 - c. Review figure 5.2b against 5.2a on page 113
 - 3. SPECIFIC TAXES – levy taxes on a specific good
 - a. Figure 5.2b on the vertical axis.
 - 4. SUBSIDIES AND GOVERNMENT PROVISION
 - a. SUBSIDIES TO BUYERS – correcting underallocation of

resources; see figure 5.3a and 5.3b on page 114; subsidizing for inoculations; on the demand side.

- b. SUBSIDIES TO PRODUCERS – specific tax in reverse; see figure 5.3c on the supply side.
- c. GOVERNMENT PROVISION – where positive externalities are extremely large, government may decide to provide the product for free or minimal charge
 - i. QUASI-PUBLIC GOODS- could be delivered in a way that exclusion could be possible; example: education, police and fire
 - ii. See the Lojack example on page 115

g. A MARKET-BASED APPROACH

- i. Creating a market for externality rights for limited government intervention on negative externalities.
- ii. OPERATION OF THE MARKET – cap and trade program
 - 1. Figure out how much pollution is acceptable
 - 2. Create “rights” for the pollution
 - 3. Can buy or sell the rights
 - 4. Review figure 5.4 on page 116

iii. ADVANTAGES – Reduces society’s cost due to buying and selling of pollution rights.

1. Potential polluters have monetary incentive not to pollute.

IV. FINANCING THE PUBLIC SECTOR: TAXATION

a. If resources of the economy are fully employed, government must free up resources from the production of private goods and make them available for producing public and quasi-public goods

i. Reduces the demand for private goods by levying taxes on households and businesses, taking their income out of the circular flow.

b. APPORTIONING THE TAX BURDEN

i. Apportion the TAX BURDEN (total amount of taxes imposed on society) by its citizens.

c. BENEFITS RECEIVED VS. ABILITY TO PAY

i. BENEFITS RECEIVED – households and businesses should purchase the goods and services of government in the same way they buy other commodities; those who benefit most from government supplied goods or services should pay the taxes necessary to finance them.

1. Example: gasoline taxes to pay for highway construction

2. Problems:

a. How to determine the individual benefits from

national defense, education, courts, etc.

b. Government cannot do that to safety net programs; the poor cannot afford it.

ii. ABILITY TO PAY – government should apportion tax burden according to taxpayers' incomes

1. In the U.S. individuals and businesses with higher incomes pay larger share both absolutely and relatively.

2. Dollar taken from a poorer person has higher utility sacrifice than a richer person.

d. PROGRESSIVE, PROPORTIONAL, AND REGRESSIVE TAXES

i. MARGINAL TAX RATE – rate paid on each additional dollar

ii. AVERAGE TAX RATE – total tax paid/ income

iii. PROGRESSIVE – average rate increases as income increases; both larger ABSOLUTE and larger PERCENTAGE as income increases

iv. REGRESSIVE – average tax rate decreases as income increases; smaller proportion of income as income increases

v. PROPORTIONAL – average rate remains the same regardless of size of income.

e. TAX PROGRESSIVITY IN THE U.S.

i. FEDERAL PERSONAL INCOME TAX IS PROGRESSIVE

1. Review table 5.3 on page 120

- ii. GENERAL SALES TAX (example: 5%) IS REGRESSIVE; burden is greater with lesser income
- iii. CORPORATE INCOME TAX IS PROPORTIONAL: straight 35%
- iv. PAYROLL TAXES IS REGRESSIVE; Social security applies to only fixed amount of income
- v. PROPERTY TAXES ARE REGRESSIVE JUST LIKE SALES TAXES
- vi. THE FEDERAL TAX SYSTEM IS PROGRESSIVE
- vii. STATE AND LOCAL TAXES ARE LARGELY REGRESSIVE
- viii. OVERALL U.S. TAX SYSTEM IS SLIGHTLY PROGRESSIVE

V. GOVERNMENT'S ROLE: A QUALIFICATION

- a. Government undertakes its economic role in the context of politics.
- b. At best, the political realities complicate government's role in the economy; at worst, they sometimes produce undesirable economic outcomes.
- c. In the political context, public goods may not be produced because their benefits outweigh their costs but because of political reasons
 - i. Senator Byrd
- d. Economic role of government is not always perfectly carried out