Chapter 4. Public goods

A **pure public good** (example = national security) has both these properties:

1. Consumption is nonrival: the additional resource cost of another person consuming the good is zero.
2. Consumption is nonexcludable: everyone consumes the same amount and it is impossible (or very expensive) to prevent anyone from consuming the good.

A **pure private good** (example = pizza) is in contrast rival and excludable.
Several aspects of our definition of a public good are worth noting:

- Even though everyone consumes the same quantity, it needs not to be valued equally by all. This depends on the preferences of the consumers. Everyone consumes the same quantity, even those who don’t want it.
- Classification as a public good is not an absolute. It depends on market conditions and the state of technology. Consumption of a public good can be rival or excludable to some extent; this is called an impure public good.
- A commodity can satisfy one part of a public good and not the other. Nonexcludability and nonrivalness do not have to go together.
- Some things that are not thought of as commodities have public good characteristic. An example is honesty. If all people would be honest, business costs would be lower. This cost reduction is nonexcludable and nonrival.
- The terms private and public don’t tell anything about which sector provides the item. Private goods are not necessarily provided exclusively by the private sector. Some private commodities are provided by governments, these are called publicly provided private goods. Examples are medical services and housing. On the other hand public goods can be provided privately, an example is fireworks.
- Public provision of a good does not necessarily mean that it is also produced by the public sector.

Efficient provision of public goods
The equilibrium in the market is found where supply and demand are equal. The demand curve of Andy shows the quantity of Food that he would be willing to consume at each price, other things being the same. To find the market demand curve of Food, we simply add together the units of Food each person demands at every price. This involves summing the horizontal distance between each of the private demand curves and the vertical axes at that price. This process is called horizontal summation. With a private good, there is no reason to expect all consumers to consume the same amounts. This is because of different tastes, incomes and other characteristics. A competitive market results in Pareto efficient allocation (first fundamental theorem of welfare economics):

$$MRS_A = MRS_B = MRT$$

However, a public good must be consumed in equal amounts. It makes no sense to derive the market demand by summing up the quantities of a public good that the individuals would consume at a given price. Because the prices can differ, we add the prices that each would be willing to pay for a given quantity.
For a public good, then, the group willingness to pay is found by vertical summation of the individual demand curves. Hence, the market equilibrium requires that the total valuation consumers place on the last unit provided (sum of MRS’s) equal the incremental cost to society of providing it (MRT):

$$MRS_A + MRS_B = MRT$$

The difference in equilibrium can be explained by the prices for both private and public good. For standard private goods, everyone sees the same price and then people decide what quantity they want. For public goods, everyone sees the same quantity and people decide what price they are willing to pay.

In case of a private good, individuals will have no incentive to lie about their preferences (competition assures efficiency). However, in case of a public good people may hide their preferences because people who do not pay cannot be excluded. Each individual has the incentive to understate his or her willingness to pay. Hence, the market may fall short of providing the efficient amount of the public good. This problem is called the free rider (someone who lets other people pay while enjoying the benefits himself) problem.
Free ridership is not a given fact. It is an implication of the fact that people maximize utility depending on their own consumption of goods.
Market mechanisms are unlikely to provide nonrival goods efficiently, even if they are excludable.
The only possible solution seems to be *perfect price discrimination*. If:

- The entrepreneur knows each person's demand curve for the public good.
- It is not possible to transfer the good from one person to another.

Then you can charge each person an individual price based on the willingness to pay.

<u>Privatization Debate</u>

Privatization: Taking services that are supplied by the government and turning them over to the private sector for provision and/or protection.

Sometimes the services provided by publicly provided goods can be obtained privately. The mix between public and private provision has changed substantially over time. But what is the right mix? Publicly and privately provided goods should be seen as inputs into the production of some output that people desire.

What ultimately matters to people is the level of output, not the particular inputs used to produce it. In selecting the amount of inputs, there are several considerations:

1. *Relative wage and material costs*
   The less expensive sector is to be preferred on efficiency grounds.
2. *Administrative costs*
   The larger the community, the more one is able to spread these costs.
3. *Diversity of tastes*
   When there is diversity of tastes, private provision is more efficient because people can adapt their consumption to their own tastes.
4. *Distributional issues*
   When a community is based on fairness, it can decide that some commodities should be available to everybody. This is called **commodity egalitarianism**.

Even in cases where public provision of a good is selected, a choice between public and private production must be made. There a two key factors in determining whether public or private production will be more efficient:

- Market environment
- Incomplete contracts – the extent to which complete contracts can be written with private sector service providers.