Session #5

Chapter 2: Public expenditure: theory and practice

2.1. Some normative arguments about the role of the public sector

2.1.1. Market failures

2.1.2. Market injustices

2.2. Public expenditure and efficiency: public goods and externalities

2.2.1. Public goods *versus* private goods

2.2.2. The optimal provision of public goods

Economics and Public Finance – Readings

- Readings
  - STIGLITZ, Joseph, 2000; ***Economics of the Public Sector***; 3rd Edition, W.W. Norton & Company, pp. 77-92; 127-155.

Economics and Public Finance – Core topics

- *Market failures*
- Pure public good
  - Definition
  - Marginal willingness to pay
  - The optimal (efficient) provision of public goods: The "**Samuelson condition**”
- Tax prices

Economics and Public Finance – The normative arguments (1/3)

- Markets play a central role in the economy particularly in the production of private goods:
  - Under **ideal circumstances** markets ensure an efficient resource allocation (**Pareto Optimality**).

- However, there are four reasons that explain **market failures**
  - **Non-competitive markets**
  - **Public goods**
  - **Externalities**
  - **Asymmetric information**

Economics and Public Finance – The normative arguments (2/3)

- **The notion of market failure**
  - Situation where a good or service
    - that affects **the well-being of individuals** (argument of the utility function) or the **costs of a company** (the argument of the production function),
      - for which **there is at least a price**, at which **some agents are willing to sell and others are willing to buy**, *but*…

a) ….there is no market for that good. (**Total market failure)…**

b) ….or there is a market but the quantity exchanged (in market equilibrium) is less than the optimal quantity. (**Partial market failure)**

Economics and Public Finance – The normative arguments (3/3)

- Market failures are **inefficiencies**.

- **First justification for some form of state intervention in a mixed economy** (to be developed in the following lectures) is to improve the efficiency in resource allocation.

Economics and Public Finance – The normative arguments (4/4)

- **<u>But</u>**
  - Even though markets provide an efficient allocation of resources, **markets can be unfair.**
    - The levels of well-being resulting from free markets **depend on the initial distribution** of property rights.

- **Second justification for some form of state intervention in a mixed economy** is
    - to attain a fairer society (more discussion about the several definitions of the concept of **equity** in further lecture)

Economics and Public Finance – Types of goods (1/8)

- It is important to distinguish between different types of goods:
  - Public goods
  - Private goods
  - Mixed goods
- This classification is based on two distinct characteristics:
  - **Rivalry in consumption**
  - **Exclusion**

- **To summarize: Public Goods have no rivalry, Private Goods have total rivalry and Mixed Goods partial rivalry.**

Economics and Public Finance – Types of goods (2/8)

- **<u>Rivalry in consumption</u>**
- When the consumption of a good by an individual prevents the consumption of that good by another individual, the good is said to be **rival in consumption**.
  - Example: Eating a custard pie.
- If two individuals (1 and 2) wish to consume a rival good X, total consumption is the sum of the individual consumptions.
  - **X1+X2=X.**
- **The consumption of private goods is rival.**

Economics and Public Finance – Types of goods (3/8)

- **Non-rivalry in consumption**
- When the consumption of a good by an individual in no way diminishes the available good for other individuals, the good is said to be **non-rival in consumption**.
  - Example: a lighthouse.
- If 2 individuals (1 and 2) wish to consume a non-rival good Y, total consumption equals the individual consumptions:
  - **$Y1=Y2=Y$.**
- **The consumption of pure public goods is non-rival.**
- **Note:** Some collective goods have, up to a point, non rivalry in consumption, but after some level of use, they present congestion (partial rivalry) They are **mixed goods. Examples?.............**

Economics and Public Finance – Types of goods (4/8)

- **<u>Exclusion</u>**

- A good is subject to **exclusion** whenever it is possible to exclude individuals from its consumption.

- There is the possibility of exclusion in **private goods**
  - The exclusion mechanism is the market itself through the pricing system.

Economics and Public Finance – Types of goods (5/8)

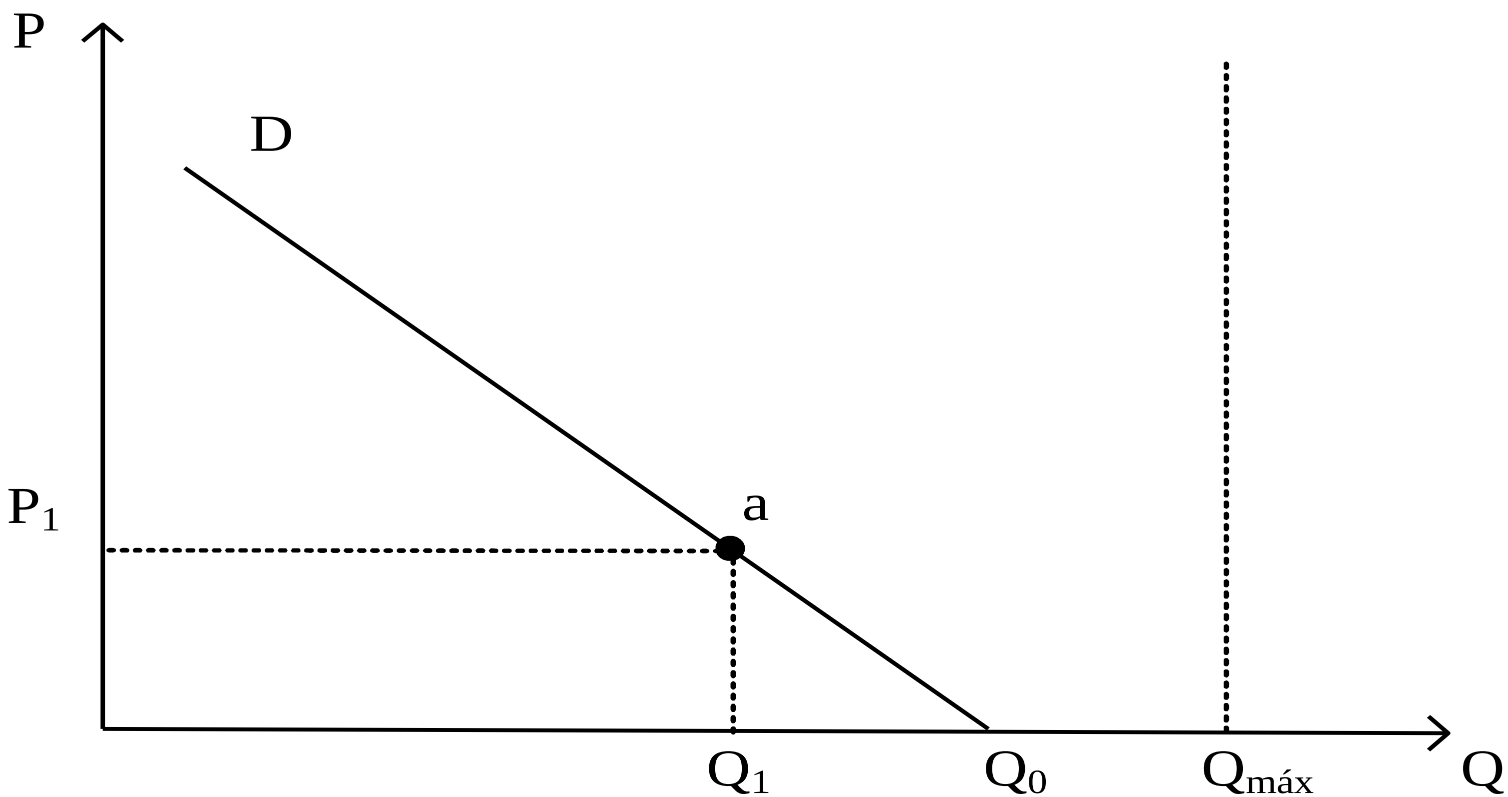
- **<u>Conditions to enforce exclusion</u>**

  - **Legal possibility**: property rights
    - Example of a legal impossibility: the Portuguese beaches.
  - **Technological viability**:
    - Example of a technological impossibility: public lighting.
  - **Economic reasonability**:
    - Example of an economic non-reasonability: a non-congested bridge.

Economics and Public Finance – Types of goods (6/8)

- <u>**The notion of pure public good**</u>

  - A **pure public good** is one that for all individuals
    - **is non-rival in its consumption,**
    - **exclusion is either not possible, or not desirable (if possible).**
  - A pure public good being non-rival in its consumption means that the **additional cost** of having other individuals consuming the good is **zero.**
    - <u>Rationing non-congested goods is inefficient</u>.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Economics and Public Finance – Types of goods (7/8)

- **<u>Public goods and market failures</u>**
  - Competitive markets (with voluntary provision)
    - either fail to provide any amount of public goods,
    - or fail to provide **efficient** quantities of public goods.
  - **The main reason is that**
    - **Non-rivalry in consumption** and **free-riding behaviour** of individuals,
      - that can benefit without paying or contributing.

Economics and Public Finance – Types of goods (8/8)

- **Examples of public goods**:
  - National defence
  - Public lighting
  - Non-congested bridge

- **Why exclusion is not desirable?**
  - There are no benefits and (huge) costs are at stake.

- **Topics to grasp**
  - **Marginal willingness to pay for a public good** equals how much an individual is willing to pay for an additional unit.
  - **Optimal or efficient provision**
    - is the quantity, for which the sum of all marginal dispositions to pay for the public good, equals the marginal cost of production (the “Samuelson condition”),
    - The efficient provision can be determined theroretically but not empirically.

Economics and Public Finance – Provision of public goods (2/2)

- **Problem**:
  - Disclosure of individual preferences and free-riding behaviour;
  - No easy (possible) to determine the marginal willingness to pay.

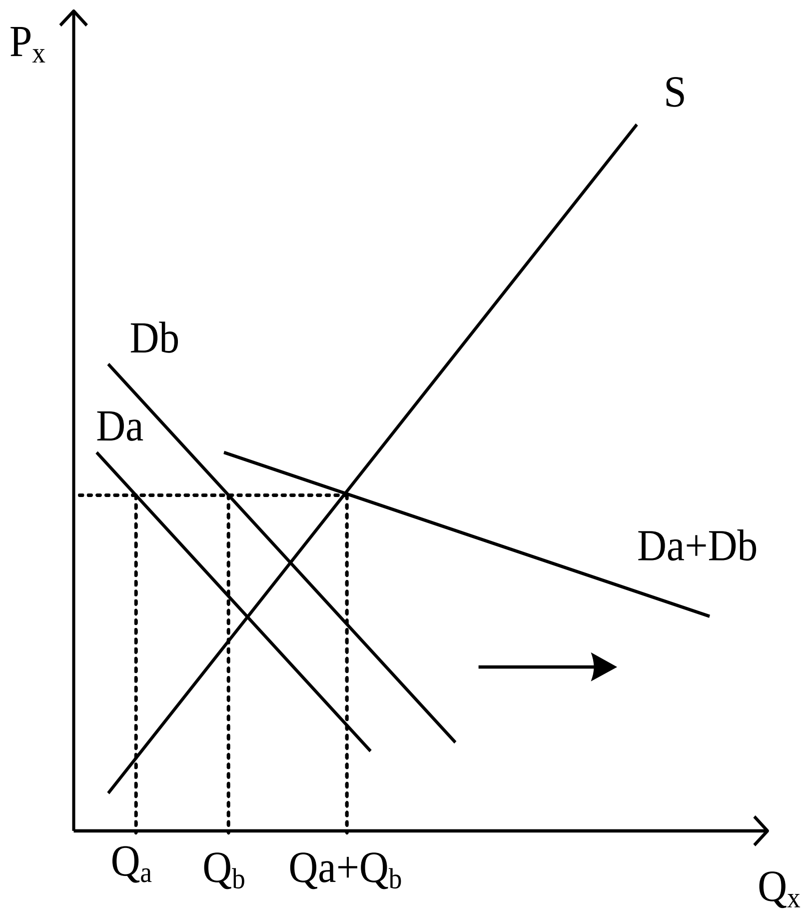
- **Consequence**:
  - There is no market (there are no *real* prices nor demand, however it can be mentioned something about "***tax prices***")
    - **Individual tax price** is the price formulated in terms of additional taxes to pay for each additional unit of the public good (please refer to graphic in slide 20).

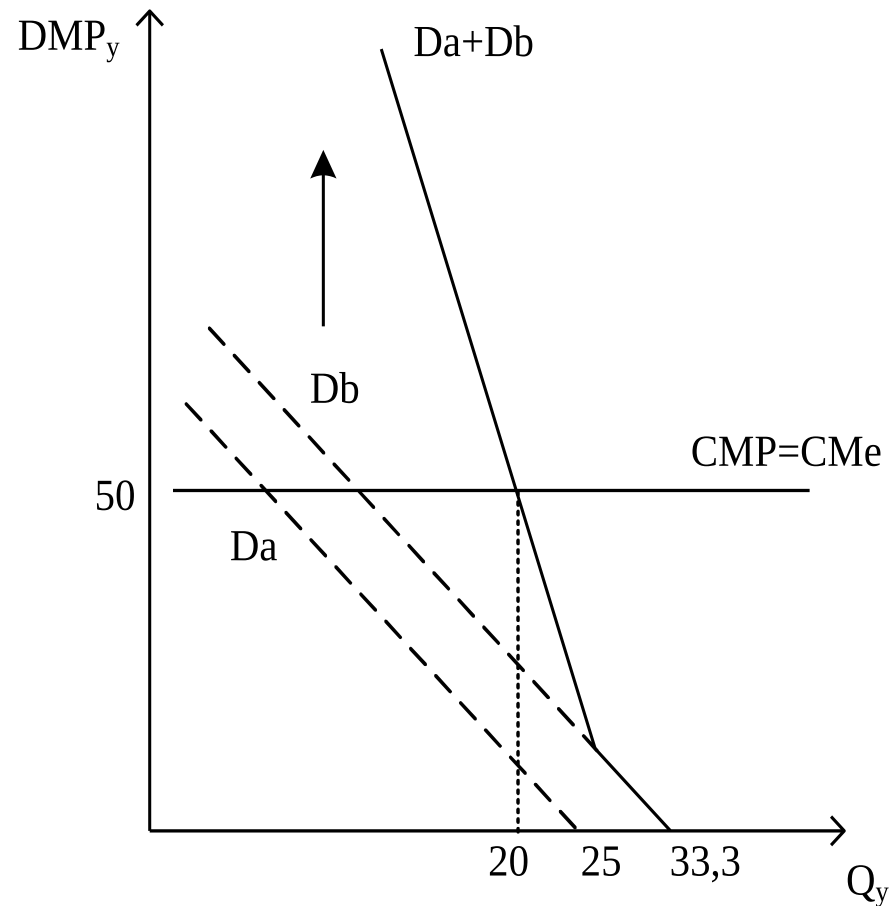
Economics and Public Finance – Graphical analysis (1/2)

- **The provision of a private good (x) and a public good (Y)**
  - **Private good** (X)
    - Total demand equals the horizontal sum of all individual demands.
  - **Public good** (Y)
    - Total demand equals the vertical sum of all (“pseudo”) individual demands (marginal willingness to pay).
- In both cases: efficiency is given by
  - **D = S (Price = MC).**
- **In competitive markets** (under some assumptions)

Economics and Public Finance – Graphical analysis (2/2)

Private good (X) ***versus*** **Public good (Y)**





Economics and Public Finance – Graphical analysis (2/2)

Public good *versus* Private good: differences

In a private market for an homogeneous good, consumers adjust quantities to the market price.

In public goods, there are no markets, consumers consume the same quantity (even valuing differently the public good) and tax prices are different.

In competitive markets for private goods (under some assumptions) the *equilibrium* is *efficient.* In public goods, market equilibrium (if there are markets) is inefficient.