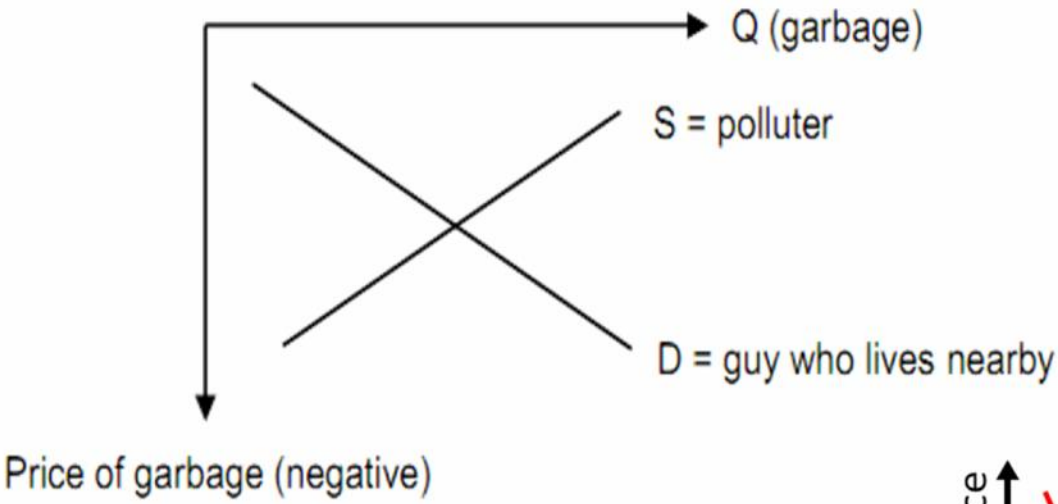
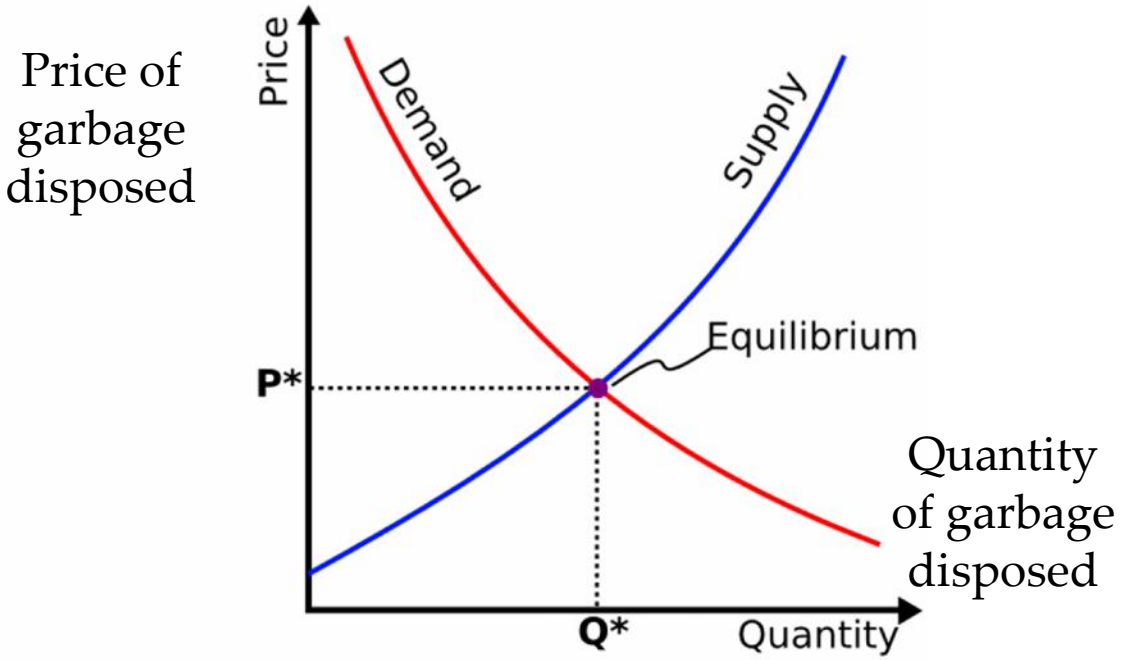
Part 2-2

Economic Concepts as Analytical Tools

Surplus measures for bads





THE DIFFERENT KINDS OF GOODS

- Characteristics of Goods
  - Useful to group various types of goods according to two characteristics
  - 1. Excludability
    - Is the good excludable?
    - Can people be prevented from using the good?
    - *The property of a good whereby a person can be prevented from using it*

THE DIFFERENT KINDS OF GOODS

- Characteristics of Goods
  - 2. Rivalry
    - Is the good rival?
    - Does one person's use of the good diminish another person's ability to use it?
    - *The property of a good whereby a person can be prevented from using it.*
    - Also called non-depletable
    - Consumption by one individual does not affect supply available for other individuals
    - Non-rivalry implies that marginal social cost of supply the good to an additional individual is zero

THE DIFFERENT KINDS OF GOODS

- Characteristics of Goods
- Goods differ by the amount of these two characteristics and can be grouped accordingly into four categories
    1. Private goods
    2. Public goods
    3. Common goods
    4. Collective goods

Public goods and bads

- **Excludability** in consumption or production:
  - A *good* is excludable if it is feasible and practical to selectively allow consumers to consume the good,
  - A *bad* is excludable if it is feasible to allow consumers to avoid the consumption of the bad.
  - In short: agents can be prevented from using the good/service

- **Rivalry**:
  - A *bad* (good) is rival if one person's consumption of a unit of the bad (good) diminishes the amount of the bad (good) available for others to consume, i.e. there is a negative (positive) social opportunity cost to others associated with consumption.
  - In short: one agent's use is at the expense of another's

THE DIFFERENT KINDS OF GOODS

- Four Types of Goods

Excludable? \ Rival?	High	Low
High	**Private Goods**	**Collective Goods/Club goods /Toll Goods**
Low	**Common Goods**	**Public Goods**

PRIVATE GOODS

- *Private goods are goods that are both excludable and rival*
- An ice-cream cone is excludable because it is possible to prevent someone from eating it and it is rival because if one person eats it another person cannot eat the same cone
- Most goods in economy are private
- Analysis of supply and demand and efficiency of markets implicitly assumed that goods were both excludable and rival – private goods

PUBLIC GOODS

- *Public goods are goods that are neither excludable nor rival*
- People cannot be prevented (nonexcludable) from using a public good and one person's use of a public good does not reduce another person's ability to use it (nonrivalrous)
- Allows for simultaneous consumption

PUBLIC GOODS

- Examples of Public Goods
  - Ecosystem
    - Provide public services given their ability to underpin and buffer the market economy against external shocks of production and consumption
  - Wetlands
    - Act as local public good by buffering economy from natural and man-made shocks by providing water purification and habitat services

PUBLIC GOODS

- Examples of Public Goods
  - Oceans
    - Act as local public good by providing public services to local economy, given its capacity to provide recreational services, habitat services, accepting terrestrial water flows, accepting wastes, etc.
    - Also provide public goods to global economy, given non-rival benefits of biodiversity, ecosystem linkages, carbon sequestration, provision of oxygen

PUBLIC GOODS

- Pure public goods
- Local public goods
  - In some circumstances, a public good has a spatial dimension
  - Provides benefits only to those living in a particular geographic region
  - Examples: trafic lights, parks, ports, marine reserves

THE DIFFERENT KINDS OF GOODS

- Pure and Impure Goods
  - Distinguish goods by degree of excludability and rivalry
  - Goods display varying degrees
  - Leads to distinction of pure and impure

PUBLIC GOODS

- Club goods
  - Sometimes possible to divide population into two or more consumption groups or clubs
  - Each club consumes its own public good
  - Examples:
    - Swimming pools, golf courses,movie houses

COLLECTIVE GOODS

- *Collective goods are goods that are nonrival but excludable*
- Sometimes provided by government, sometimes by private goods
- Pay-per-view cable television
- Often are natural monopolies

COMMON GOODS

- *Common goods are goods that are rival but not excludable*
- Fish in the ocean are rivalrous, because when person catches the fish, there are fewer fish for the next person to catch.
- Fish in the ocean are not excludable, because it is difficult to stop fishers from taking fish out of the ocean

PUBLIC AND COMMON GOODS AND EXTERNALITIES

- Public goods and common goods are both not excludable, and therefore available to everyone free of charge
- Both are closely related to externalities
- For both, externalities arise because something of value has no price attached to it
- If one person provides public good, other people better off, and yet they could not be charged for this benefit

PUBLIC AND COMMON GOODS AND EXTERNALITIES

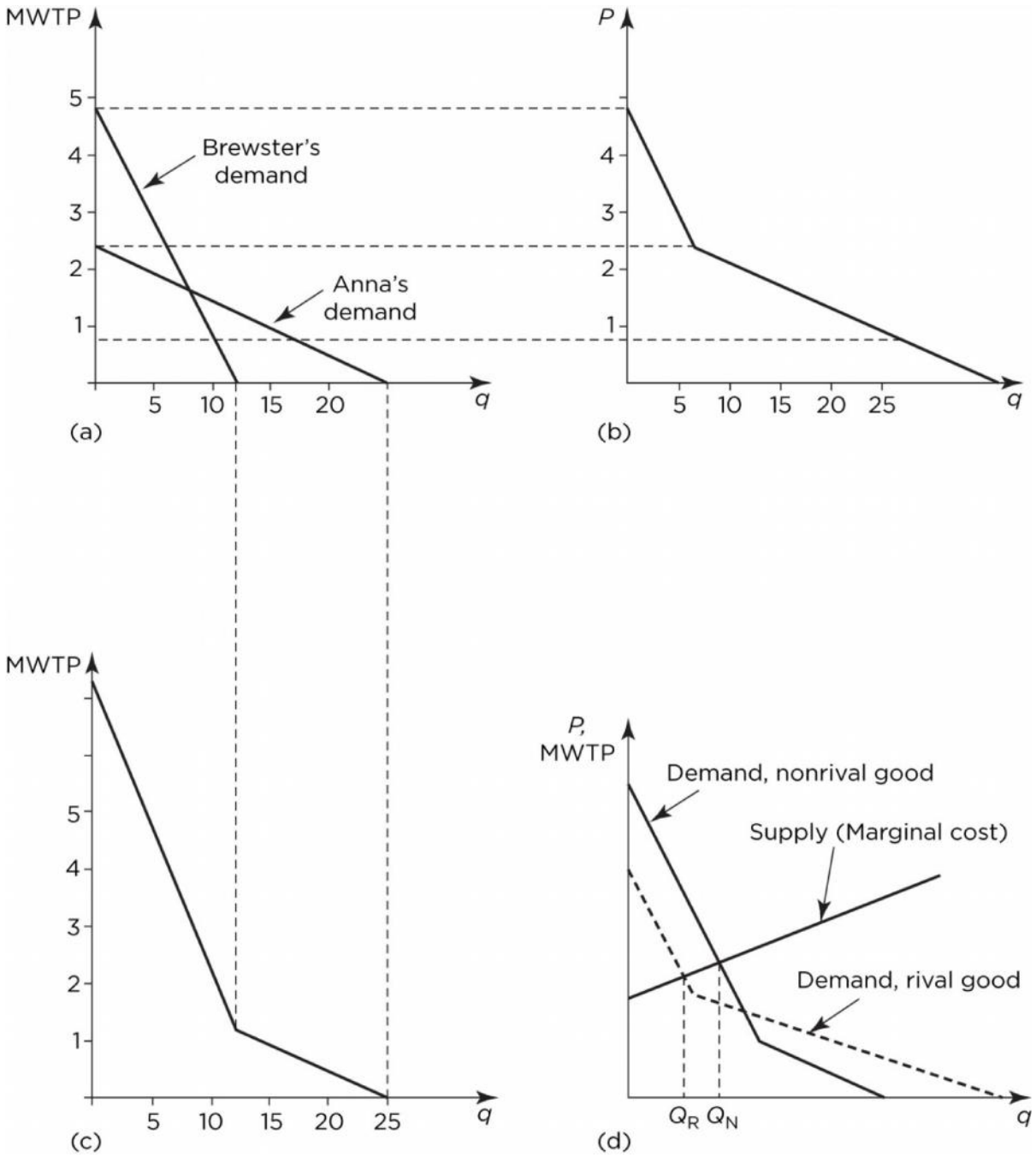
- If one person uses a common good, such as fish in the ocean, other people are worse off, and yet they are not compensated for this loss
- Because of these external effects, private decisions about consumption and production can lead to inefficient allocation of resources and public intervention can potentially raise economic welfare

PUBLIC AND COMMON GOODS AND EXTERNALITIES

- Private provision of public goods creates Pareto inefficiency
  - Leads to insufficient level of a desirable public good
  - Market failure and externality
- Due to non-rivalry, marginal social cost of supplying good to an additional individual is zero
- Pareto efficiency occurs when marginal social benefit equals marginal social cost, implying price for usage should be zero

PUBLIC AND COMMON GOODS AND EXTERNALITIES

- But private firm cannot profit by providing pure public good for free
- Due to non-rival and non-excludable consumption
- Each firm ignores impact of its private contribution to public on other firms and vice versa
- No firm accounts for the extra benefit passed on to other firms as each firm increases its contribution to the supply of the public good


MWTP
5
4
3
2
1
Brewster's demand
Anna's demand
5 10 15 20
q
(a)
P
4
3
2
1
5 10 15 20 25
q
(b)
MWTP
5
4
3
2
1
5 10 15 20 25
q
(c)
P,
MWTP
Demand, nonrival good
Supply (Marginal cost)
Demand, rival good
Q_R Q_N
q
(d)

PUBLIC BADS

- An undesirable public good
- Reduces consumer utility or firm profits
- Examples: pollution, noise
- Loss suffered by one person from pollution of air, for example, does not reduce loss suffered by another
- Public bads are oversupplied

PUBLIC AND COMMON GOODS AND EXTERNALITIES

- More advanced discussion
  - Externality
    - Cause of this inefficiency due to externality
    - Each consumer's purchase of the public good provides direct benefit not only to the purchasing consumer, but also to every other consumer
    - Hence, private provision of public good creates situation with externality
    - Free-rider situation created

PUBLIC GOODS AND THE FREE-RIDER PROBLEM

- *A free-rider is a person who receives the benefit of a good but avoids paying for it*
- Most often associated with public goods
- Arises due to non-excludability
- Implies that market will provide less of public good than is socially optimal
  - Misallocates resources away from environmental assets to private goods where conditions of rivalry and exclusive use hold

MIXED GOODS

- Enviornmental Assets as Mixed Goods
  - Environmental assets which provide both private and public good services are mixed goods
  - Biodiversity is an example
    - Species provide public good services in the generation of ecological services that are themselves of value to human society
    - Species provide private good services of direct economic value in both human consumption and production

MIXED GOODS

- Characteristics of Mixed Goods
  - Main characteristic of a mixed good is that consumption of mixed good as private good is unaffected by consumption of same good as public good
    - Because of non-rivalrous characteristic when public good
  - Whereas consumption of mixed good as public good is affected by consumption of same mixed good as a private good
    - Because of rivalrous nature of private goods

MIXED GOODS

- Environmental Assets as Mixed Goods
  - Many ecological services are neither purely rival nor purely exclusive in consumption, and hence are mixed goods
    - Consumption of such services by one user or group does not diminish their availability to others
    - Consumption does not preclude consumption by others
    - In nature of local public good

MIXED GOODS AND MARKET FAILURE

- Characteristics of Mixed Goods
  - Often overexploitation of the mixed good and underinvestment and under-supply in public good aspect of mixed good
  - Market only values private good uses
  - As with many public goods, underinvestment in environmental services or biodiversity in favor of specific populations whose benefits can be captured by individuals or groups

Positive and Negative Externalities

- The effects of a decision by consumers and producers that has an impact on a third party
  - **Positive Externalities** – beneficial effects on third parties
  - **Negative Externalities** – costs incurred by third parties

Positive and Negative Externalities

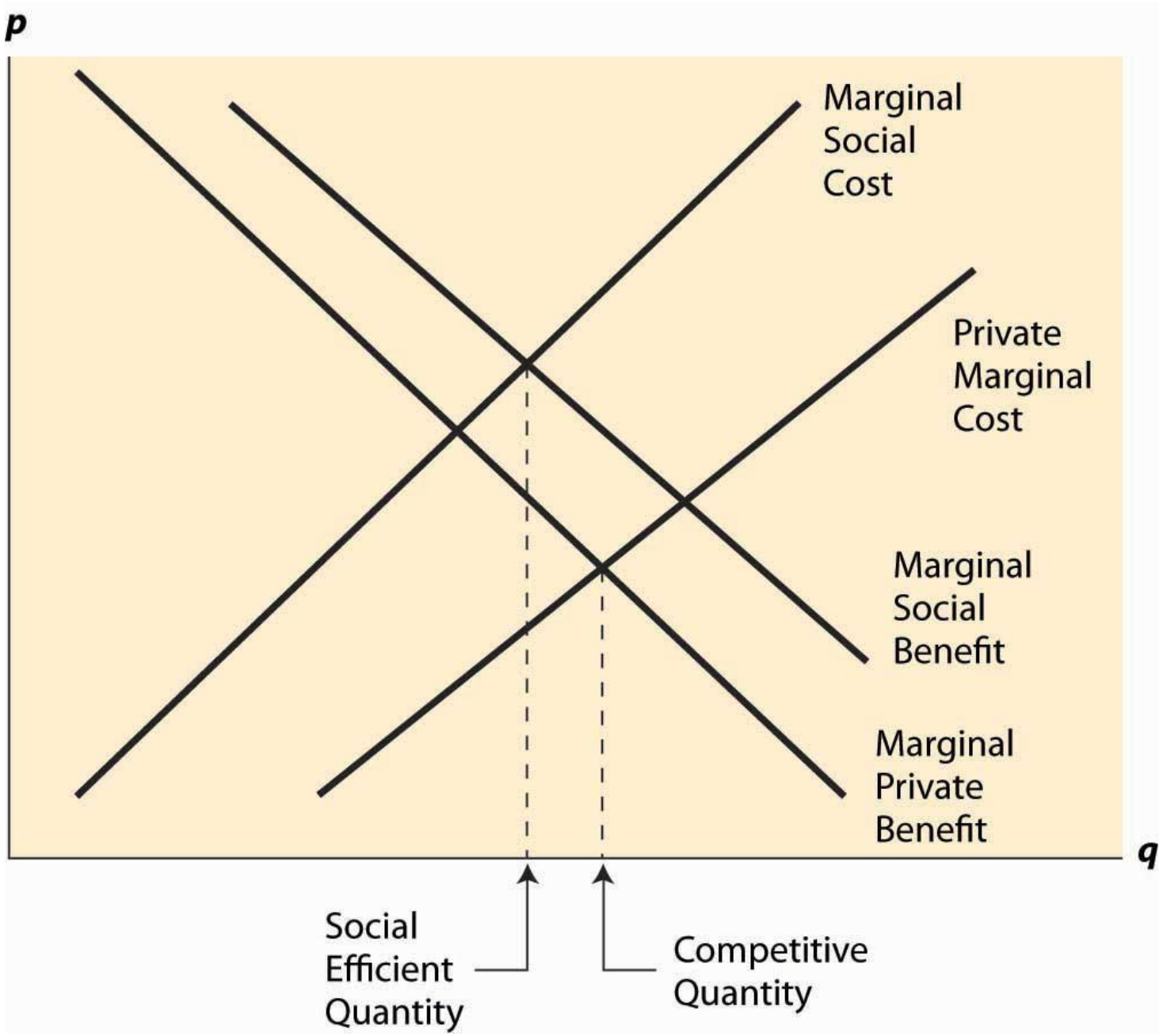
- **Costs and benefits in production**:
- External costs in production – where MSC > MPC
  - e.g. air and water pollution, congestion, housing development on green belt areas, destruction of hedgerows and wildlife, noise, pollution, anti-social behaviour, crime
- External benefits in production – where MSC < MPC
  - e.g. human resource development, research and development in industry

Positive and Negative Externalities

- **Costs and benefits in consumption:**
- External costs in consumption – where MSB < MPB
  - e.g. passive smoking, litter, noise, anti-social behaviour
- External benefits in consumption – where MSB > MPB
  - e.g. preventative health care – vaccinations, public transport, attractive gardens, bathing regularly!

Positive and Negative Externalities

- **External costs** – socially efficient output is less than current output
- **External benefits** – socially efficient output is greater than current output
- Socially efficient output is where **MSC + MPC = MSB + MPB**


p
Marginal
Social
Cost
Private
Marginal
Cost
Marginal
Social
Benefit
Marginal
Private
Benefit
q
Social
Efficient
Quantity
Competitive
Quantity