Sections 7
Consumer and Producer Surplus & Government Policies

Reference:

N. Gregory Mankiw and Mark P. Taylor (2023), “Microeconomics”, Cengage Learning, Chapter 7, 8

The slides of this section are mainly based on the 6th edition of the book by Mankiw and Taylor (2023). In some slides we reproduce figures, sentences and definitions given in the book.

Contents

Introductory video: The Gotthard base tunnel

https://www.youtube.com/watch?v=3qI1xQX7Cg8#t=97

Use of consumer and producer surplus

- the impact of an economic policy measure or a public investment (cost-benefit analysis is a technique which is based on welfare economics).

- Use of consumer and producer surplus to measure the change in welfare due to a change of a market condition

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Consumer Surplus

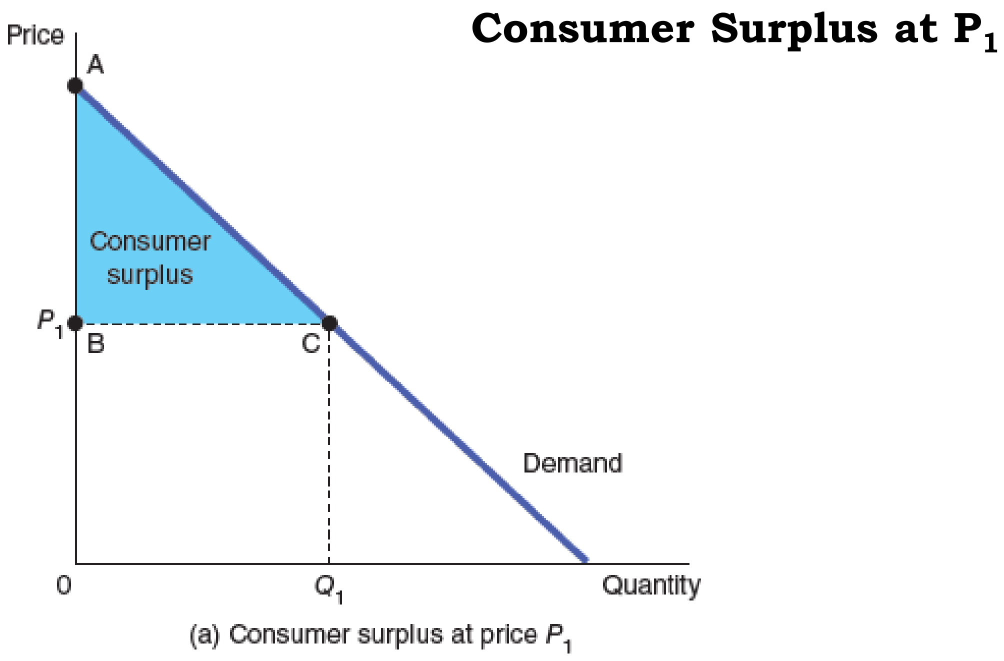
Willingness to pay:

- is the maximum amount that a buyer will pay for a good.

Consumer surplus:

- buyer's willingness to pay minus the amount the buyer actually pays
- measures the extra value in $ that consumers receive above what they pay for a commodity

Consumer Surplus and the Demand Curve



Source: Mankiw & Taylor (2023), "Microeconomics"

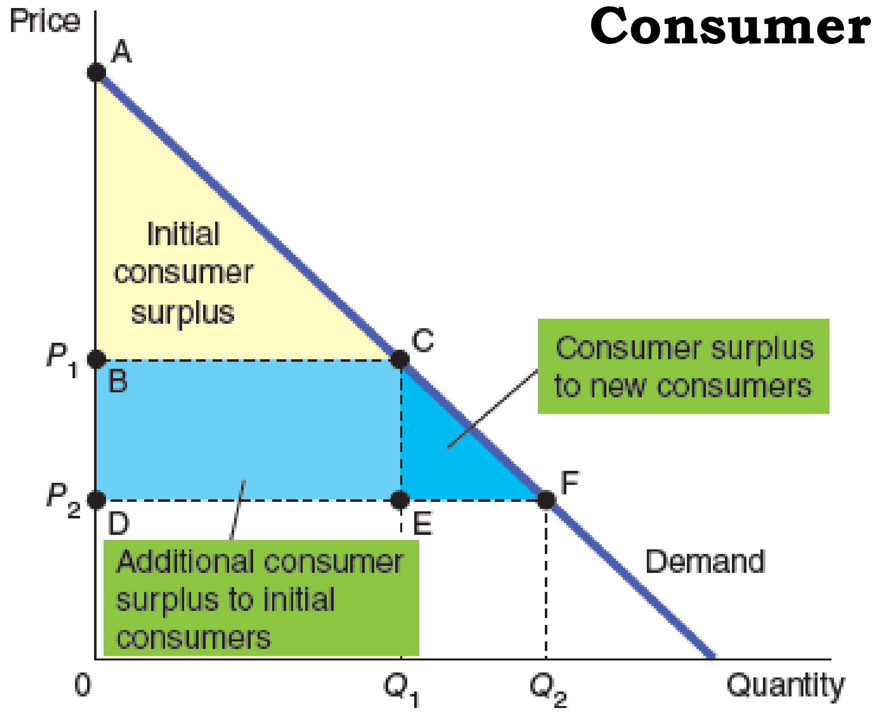
The area below the demand curve and above the price is the consumer surplus.

Marshall: "excess of the price which a consumer would be willing to pay rather than go without a thing over that which he actually does pay is the economics measure of this surplus satisfaction…"

Consumer surplus: benefit ➔ consumer saves ➔ income gained by the consumer ➔ amount that can be saved or spent further on other goods or services

Application 1: Impact of a Price Reduction

Consumer Surplus at P_2



(b) Consumer surplus at price P_2

An increase in the consumer surplus due to a **price reduction** is actually an increase in real income
→ possibility to buy more of other goods
→ increase in welfare

Source: Mankiw & Taylor (2023), “Microconomics”

Application 2: Paradox of Value

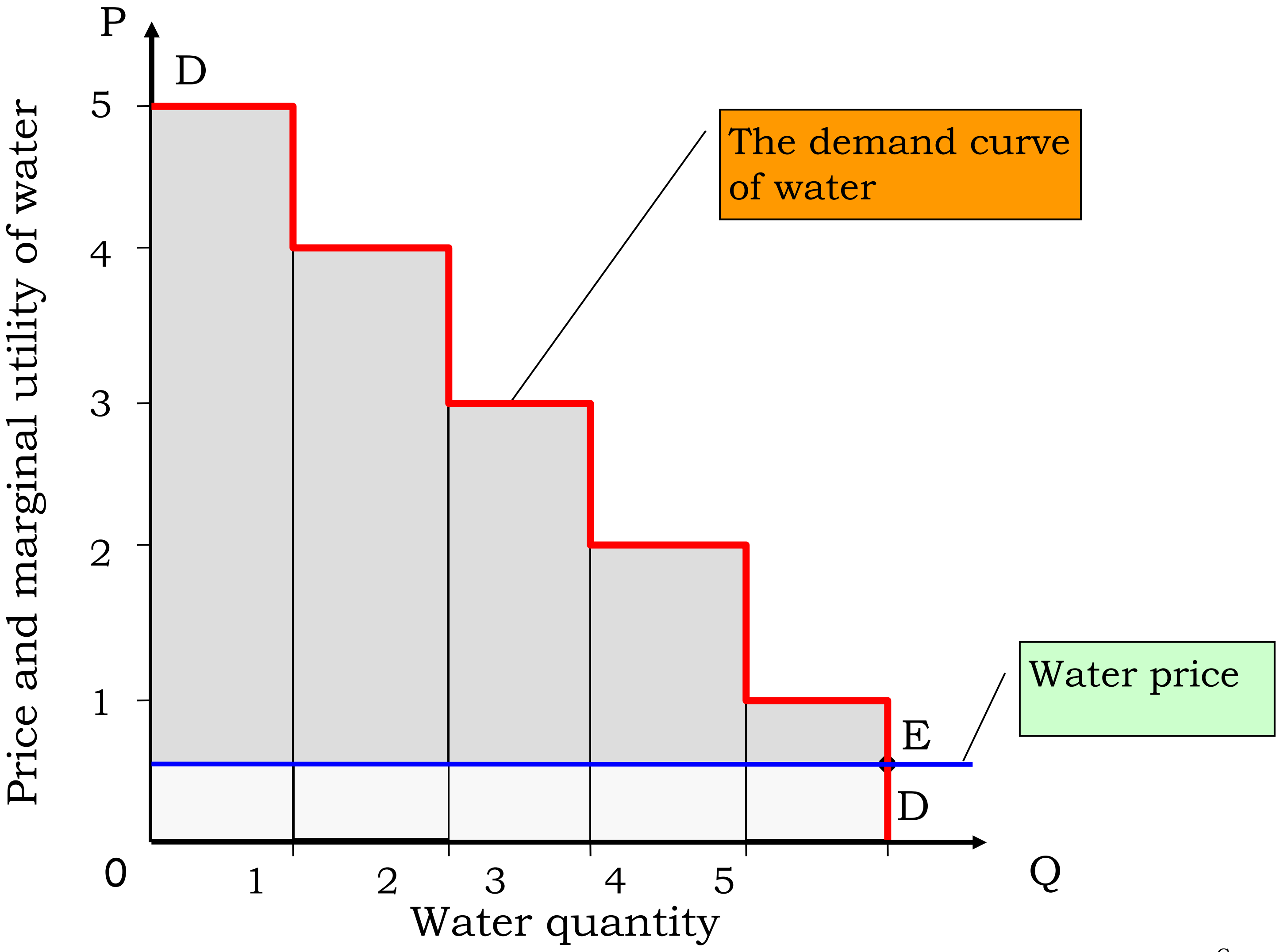
Paradox of value emphasizes that recorded monetary value of a good **(P*Q)** may be a **misleading** indicator of the total economic value of that good.

Example: Price Comparison of Mineral Water and Potable Water

- Bottled spring water:
  - Valser Classic: Fr. 0.87/lt
  - Swiss Alpina: Fr. 0.63/lt
- Potable water:
  - In Zürich a cubic meter (1’000 lts) of potable water (tap water) costs on average Fr. 2.50 → Fr. 0.0025/lt

Sources: www.leshop.ch and Wasserversorgung Zürich (www.stadt-zuerich.ch)

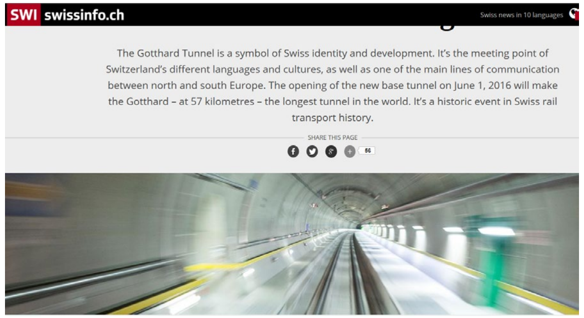
Individual Consumer Surplus



Application 3: Measure of Benefits in the Evaluation of a Public Investment

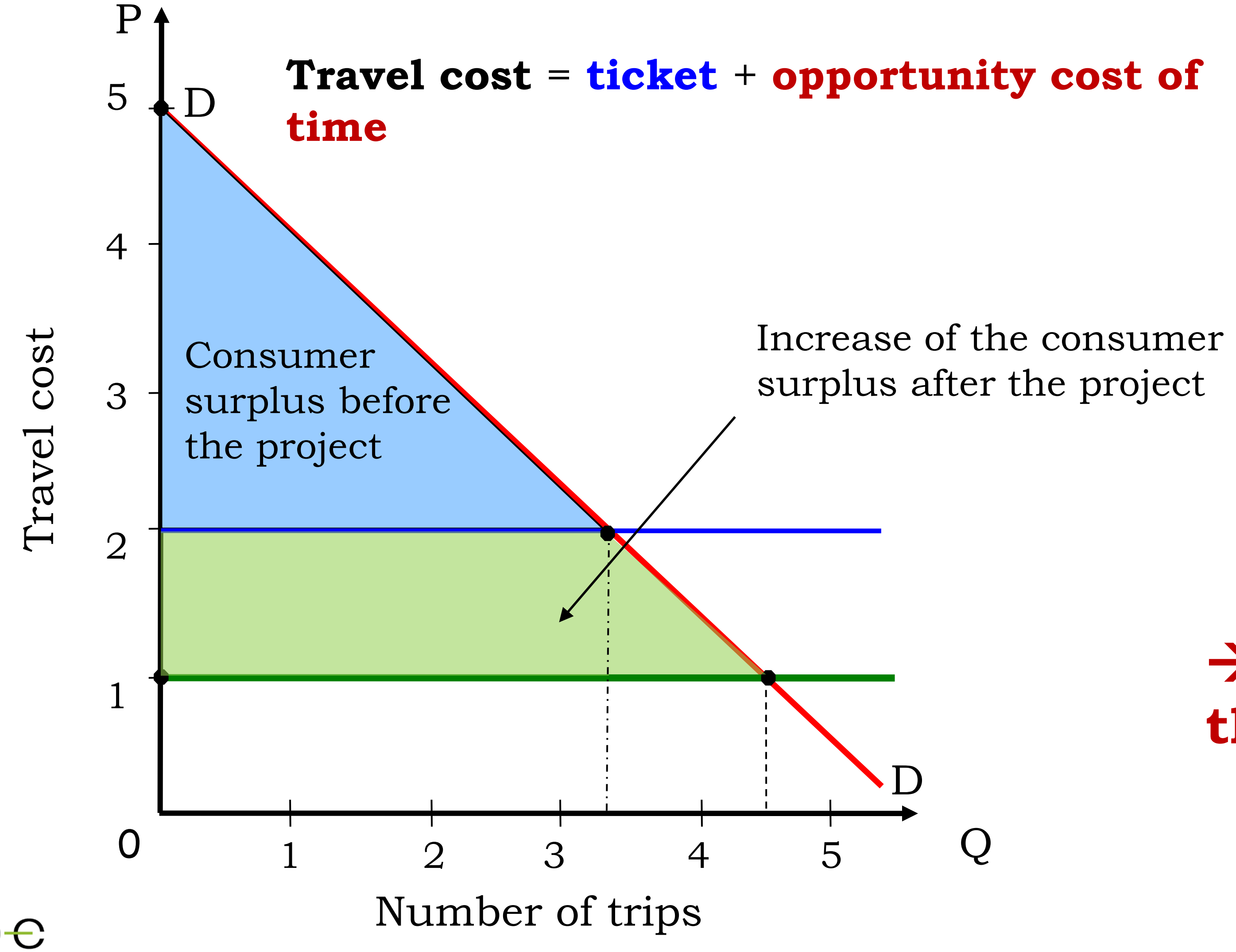
Consumer surplus is useful in the evaluation of the benefits of many government decisions:

- Building a new highway
- Building a new tunnel for a railroad
- Increasing the capacity of a railroad system
- Preserving a recreation site
- Improving the quality of a public good



- Reduction of travel time
- Reduction of the number of accidents
- Reduction of energy usage and pollution

Cost-Benefit Analysis of the Construction of a Tunnel for a Railroad



→ **benefit measured using the change in the CS**

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Producer Surplus

Producer surplus:

- is the amount a seller is paid for a good minus the seller's **cost** (excess of revenues over long run cost of production).
- Includes the rents and economic profits (extra-profits) to firms and owners of specialized inputs in the industry.

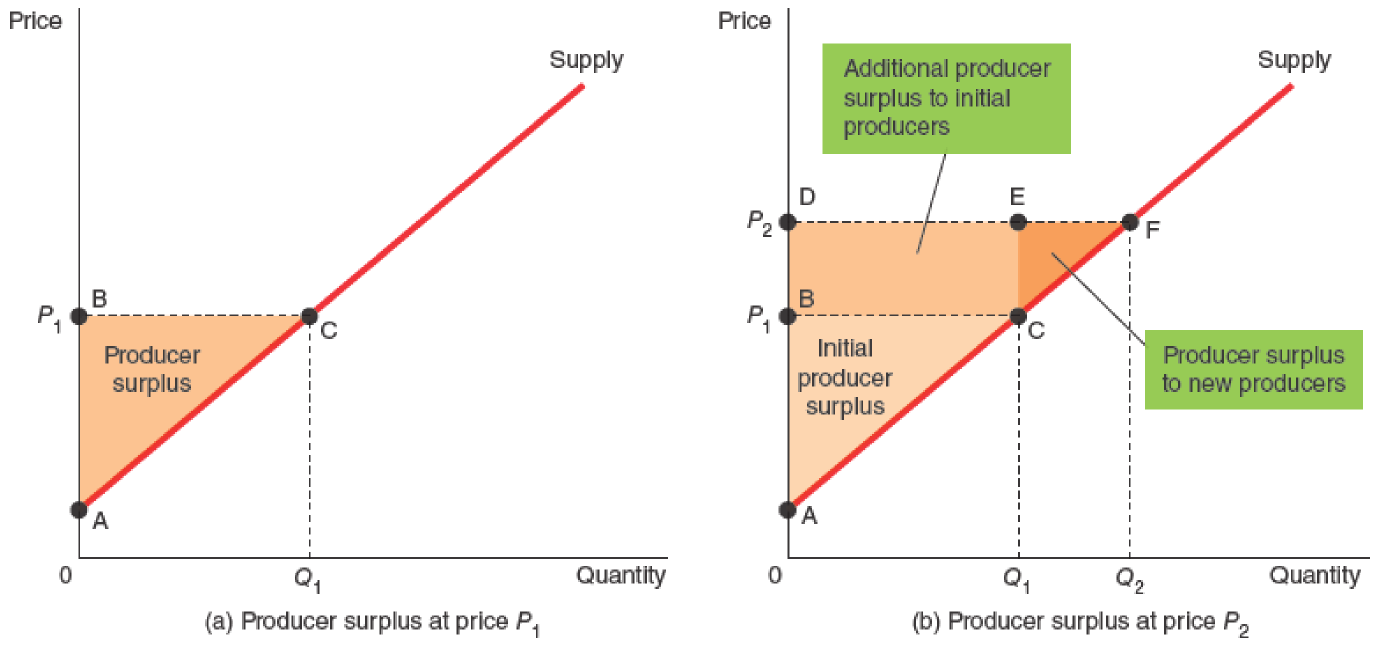
Cost: The value of everything a seller must give up to produce a good.

Willingness to sell: Minimum amount for which a seller will do a service.

Source: www.psa-peugeot-citroen-press.co.uk

Producer Surplus and the Supply Curve

- The total area above the supply curve and below the price is the sum of the producer surplus of all sellers in the market for a good or service.
- Producer surplus decreases as price decreases!



Source: Mankiw & Taylor (2023), "Microeconomics"

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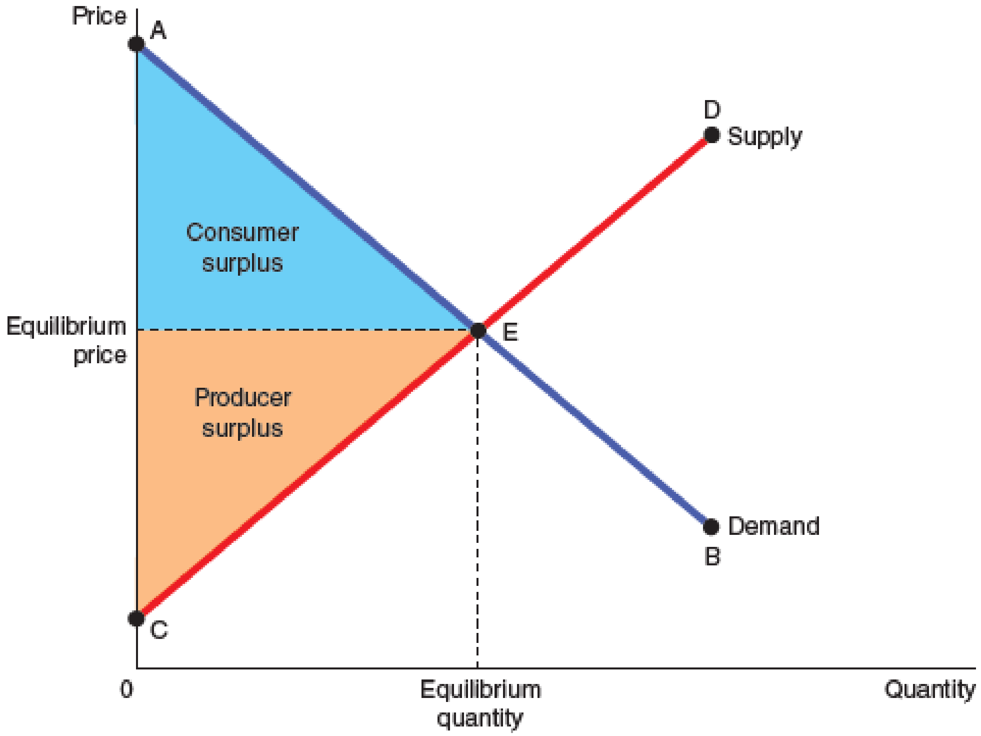
Total Surplus in a competitive market



Source: Mankiw & Taylor (2023), "Microeconomics"

Total Surplus (TS)

TS = **Consumer Surplus** + **Producer Surplus**

TS = Value to buyers – Cost to sellers

Market Efficiency and Market Failure

In the previous slides we assumed the market to work perfectly and that consumers and firms are rational. However, there are some possibilities of market failure and anomalies:

- **Market power**
- **Externalities**
- **Public goods**
- **Asymmetric information**
- **Bounded rationality**

- **In the presence of market failure we don’t reach efficiency in the use of resources (sections 8 and 9)**

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Introductory Video: Introduction of Minimum unit Price

Minimum alcohol unit price in Scotland

https://www.standard.co.uk/news/uk/scotland-becomes-first-country-to-introduce-minimum-alcohol-unit-price-a3827686.html

Minimum Cigarette Price in New York

https://www.youtube.com/watch?v=ezvCOmtb1v8

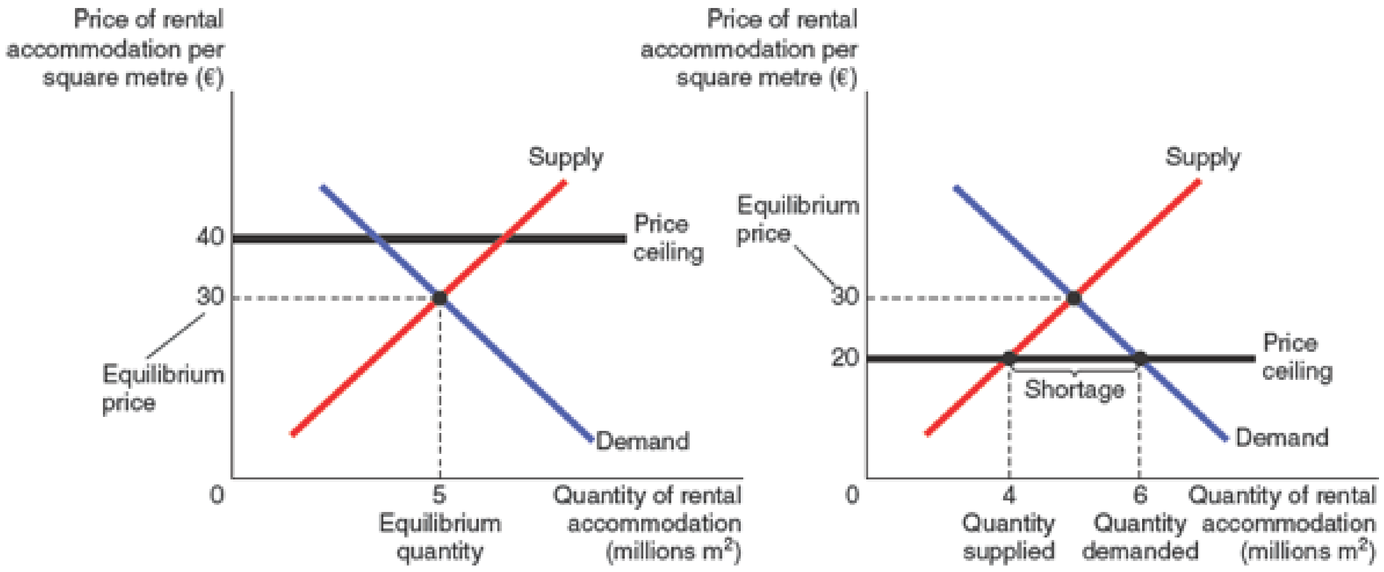
Economic Effects: Controls on Prices in a Competitive Market

- **Controls on Prices:**
  - Are usually enacted when policymakers believe the market price is unfair to buyers or sellers.
  - Result in government-created price ceilings and floors.

- **Price Ceiling: A legal maximum on the price at which a good can be sold.**
- **Price Floor: A legal minimum on the price at which a good can be sold.**

Price Ceiling

Not Binding **Binding**



(a) A price ceiling that is not binding

(b) A price ceiling that is binding

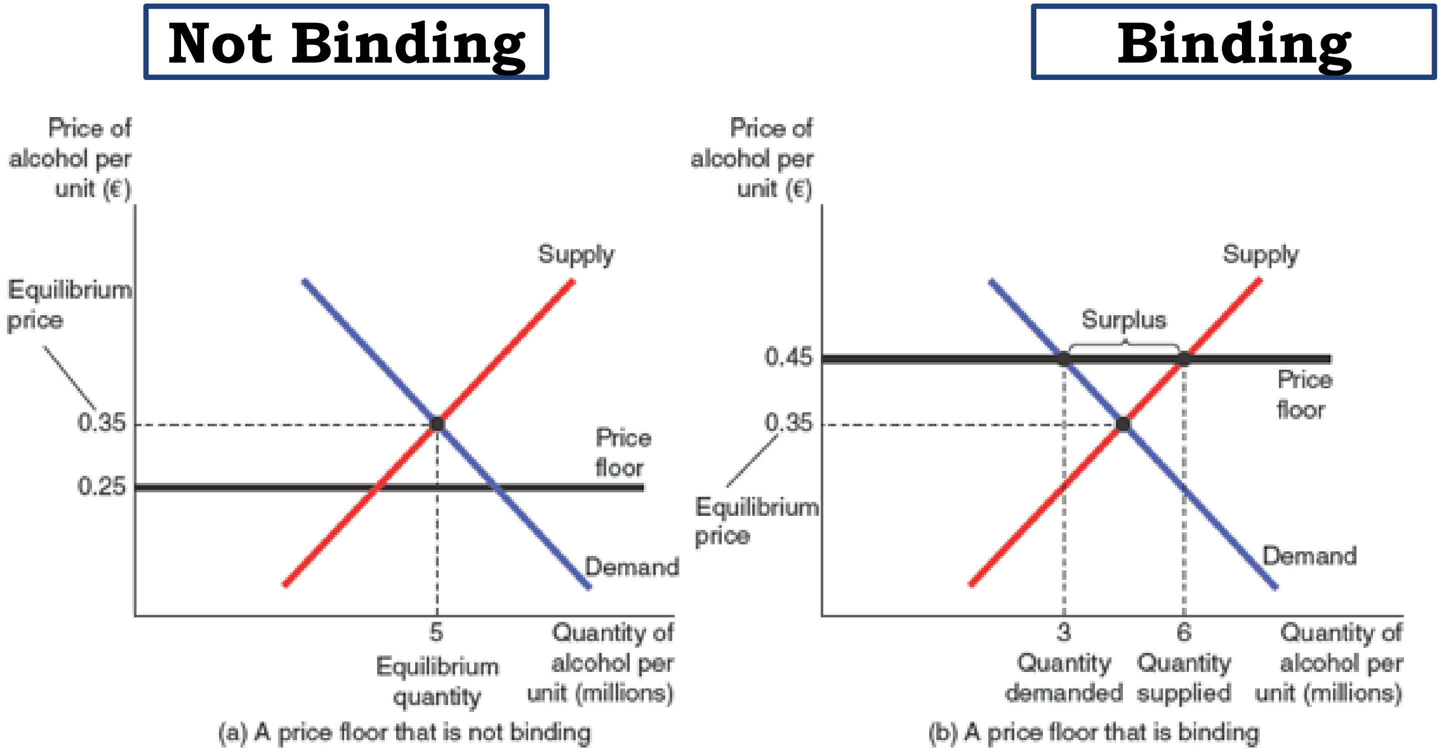
Ex: Rent control

Source: Mankiw & Taylor (2023), "Economics"

Two outcomes are possible when the government imposes a price ceiling:

- The price ceiling is **not binding** if set above the equilibrium price.
- The price ceiling is **binding** if set below the equilibrium price, leading to a shortage.

Price Floor



Ex: alcohol price

Source: Mankiw & Taylor (2023), "Microeconomics"

When a government imposes a price floor, two outcomes are possible:

- The price floor is **not binding** if set below the equilibrium price.
- The price floor is **binding** if set above the equilibrium price, leading to a surplus.