Economics

A.A. 2026/2027

Global Law and Transnational Legal Studies

MARKET STRUCTURES:

MONOPOLY

What is a monopoly?

01 One firm supplies the relevant market.

02 Consumers have no close substitutes.

03 Barriers to entry protect the firm from new rivals.

Market power = the ability to influence the market price.

A monopolist **is the only seller of a product without close substitutes**

Production And Pricing Decisions

The key difference between a competitive firm and a monopoly is

the monopoly's ability to control price.

- A monopoly can **increase price** within the limits of the demand curve and **not lose all its sales**.
- A competitive firm does not have any control over the price, and takes it as given

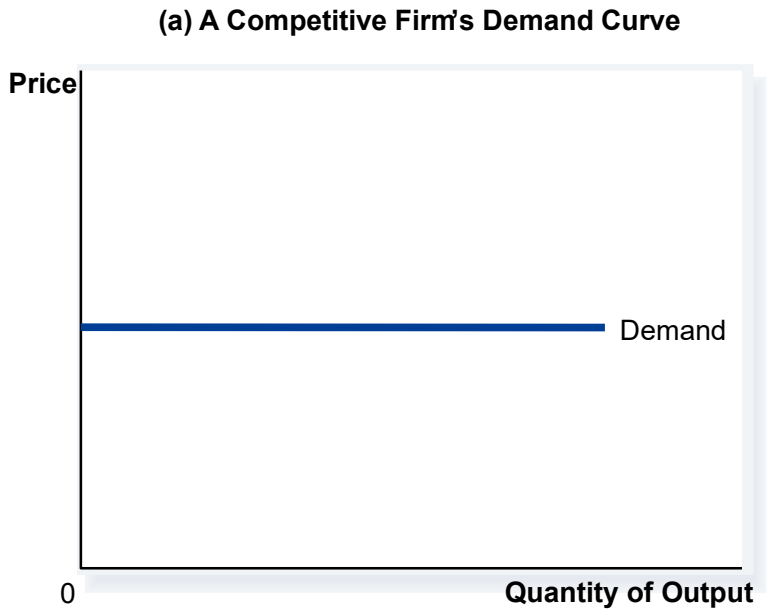
Market power

- *Market power* exists where a firm can raise the price of its product and not lose all its sales to rivals
- **While a competitive firm is a *price taker*, a monopoly firm is a *price maker* – *it has market power***

Demand Curve for Competitive Firm and Monopoly

- This reflects the difference in the **demand curves** that competition and monopoly face
- **The competitive firm** can sell **any quantity** it can produce at the market price (it fixes it at P=MC…)
- **The demand curve the firm faces is horizontal at the level of the market price p**

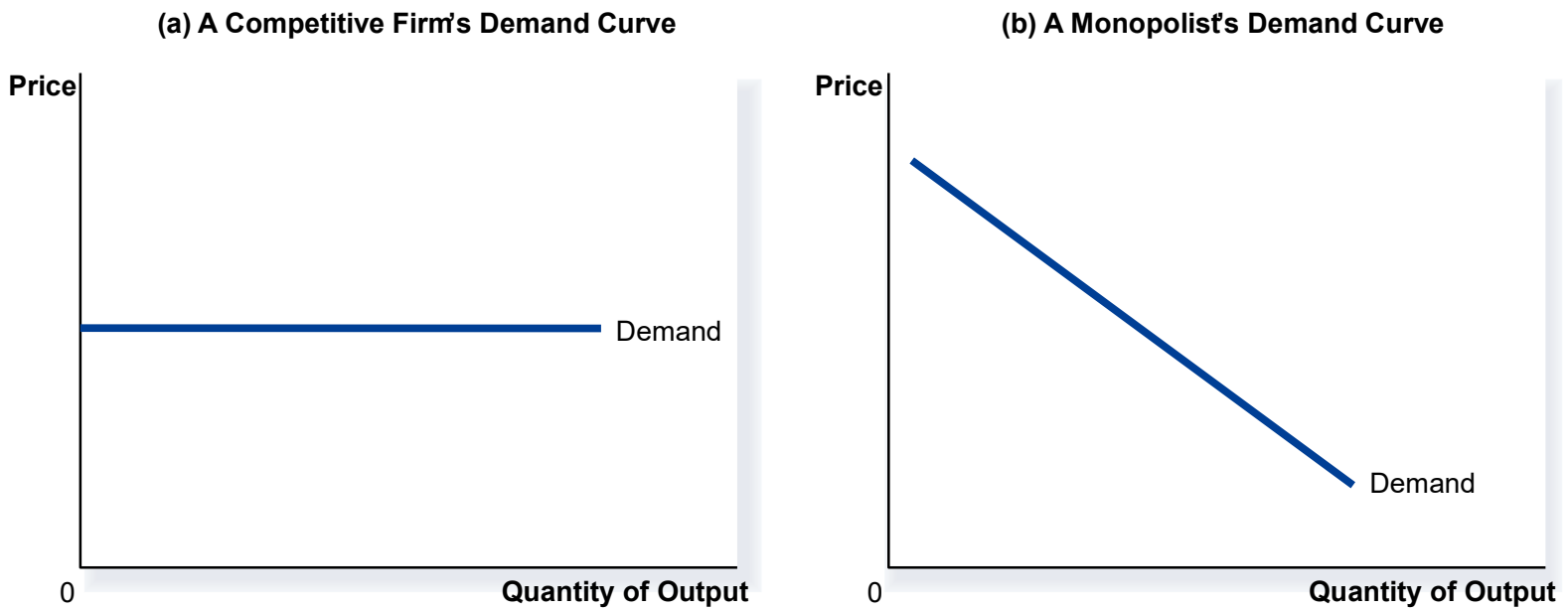
Demand Curve for Competitive Firm



Demand Curve for Monopoly

- A monopoly faces a **downward sloping** demand curve …
- …**the whole market demand curve** – it is the only producer!
- a monopoly must **decrease the price in order to sell more…**

Demand Curves for Competitive Firm and Monopoly



Three revenue concepts

Concept	Formula	Meaning
Total revenue	$TR = P \times Q$	Money from sales
Average revenue	$AR = TR / Q = P$	Revenue per unit
Marginal revenue	$MR = \Delta TR / \Delta Q$	Revenue from extra output

A price maker still faces limits

01 A monopolist chooses a price–quantity combination.

02 A higher price usually means fewer units sold.

03 Demand limits how much the firm can charge.

The firm cannot choose price and quantity independently.

Marginal Revenue and Price

- When a monopoly increases the amount it sells by decreasing price, it has **two effects** on total revenue (***P*** × ***Q***).
  - The **output effect — more** output is sold, so ***Q* is higher**
  - The **price effect — price** falls, so ***P* is lower**.

Marginal Revenue and Price

- Perfect competition does not have the price effect
  - It sells all units at the same price!

Example: one more unit, only €0.80 more revenue

Quantity	Price	Total revenue
20 units	€5.00	€100.00
21 units	€4.80	€100.80

MR = €100.80 − €100.00 = €0.80

Example MR < P

P = 5 Q = 20

In order to sell more, it must decrease the price, e.g.,

P' = 4.80 Q = 21

Its MR on the 21° unit is < P!

In fact

MR = 4.80 – (.20 x 20) =

Output effect **Price effect**

MR = 4.80 – 4 = 0.80

MR< P

Why is marginal revenue below price?

01 Selling one more unit brings extra revenue.

02 But a lower price also reduces revenue on earlier units.

03 With one price for everyone, MR is below P.

Output effect (+) and price effect (−).

Marginal Revenue and Price

- **A monopolist's marginal revenue is always *less* *than* the price of the good**
- **MR < P**

- The demand curve is downward sloping
- When a monopoly **drops the price** to sell one more unit…
  - ***…the revenue received from previously sold units also decreases!***

Profit maximisation: two steps

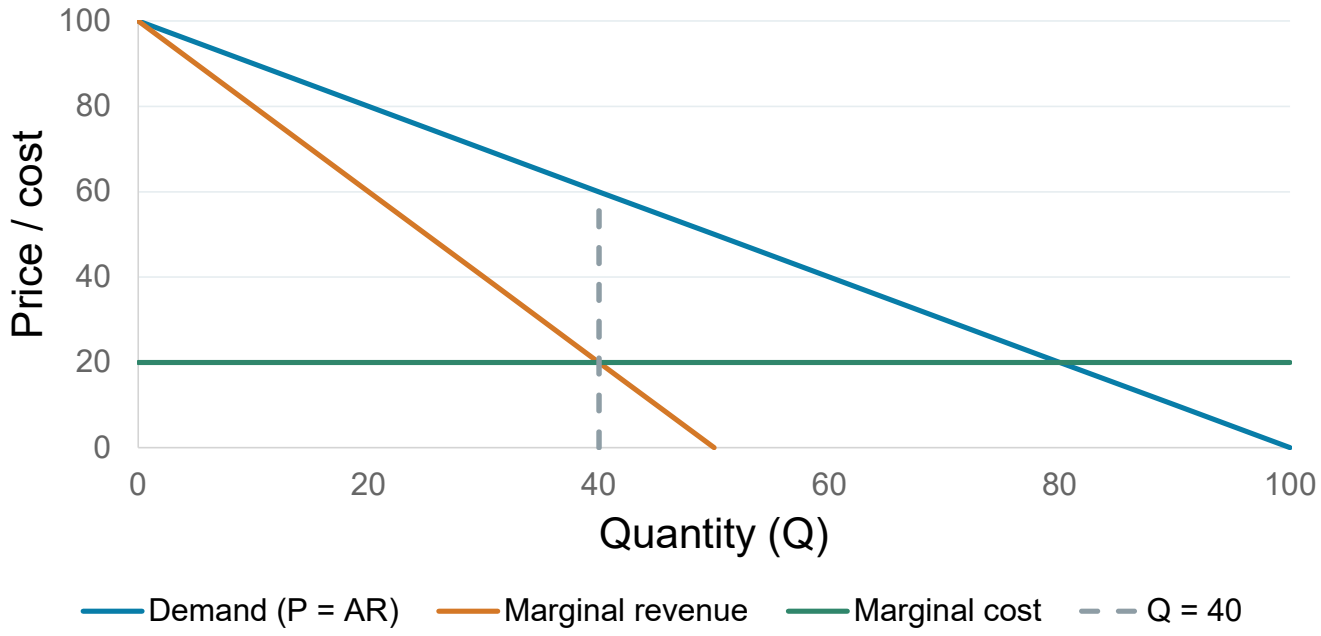
01 Choose output where MR = MC.

02 Then read the price from the demand curve.

03 Use average total cost to calculate profit.

Quantity from MR = MC. Price from demand.

Choose quantity first, then price



1. MR = MC

Q = 40

2. Use demand

P = 60

Do not read the monopoly price from the MR curve.

Market power does not guarantee profit

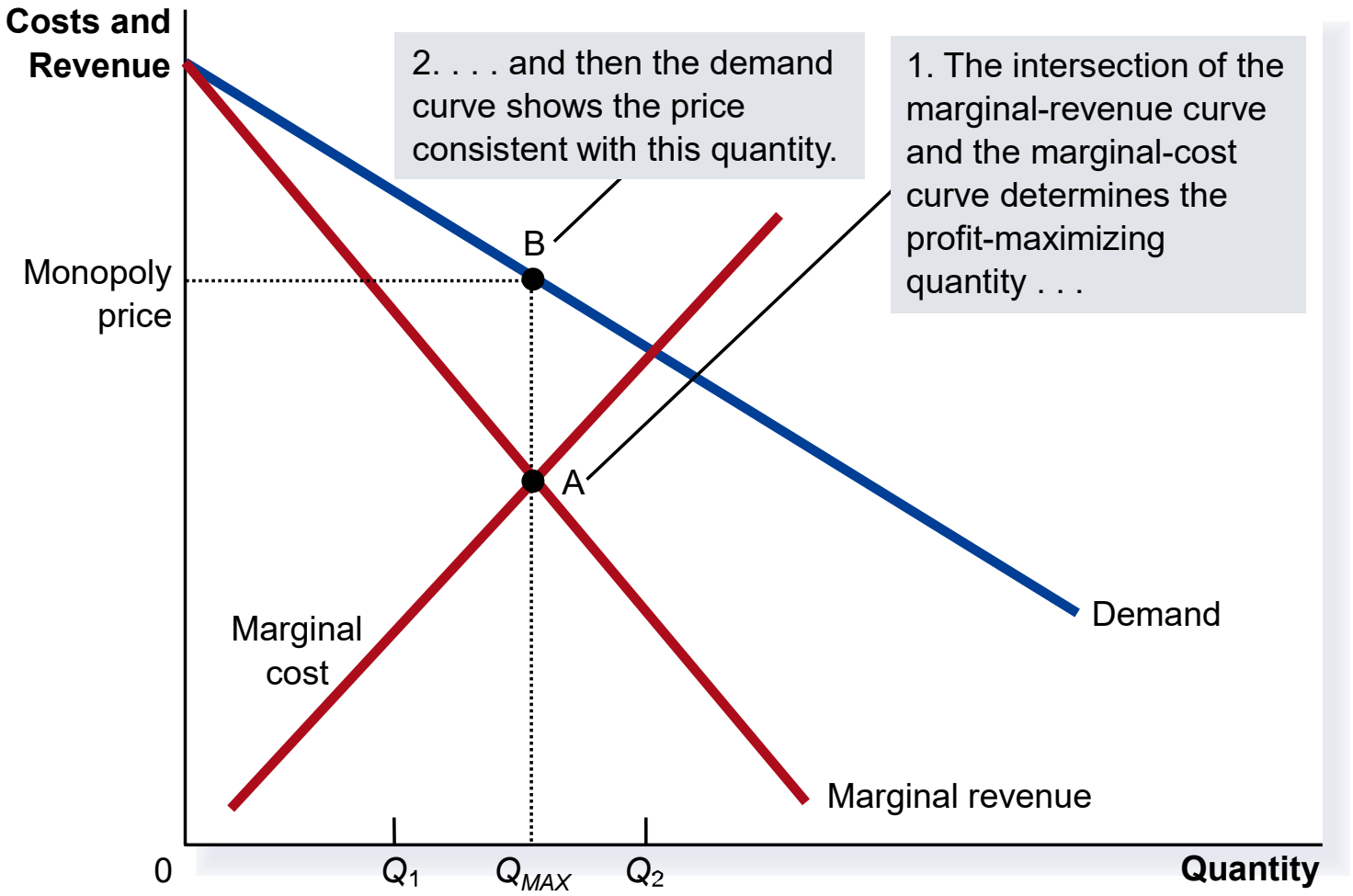
01 Profit = (price − average total cost) × quantity.

02 If P > ATC, the firm earns an economic profit.

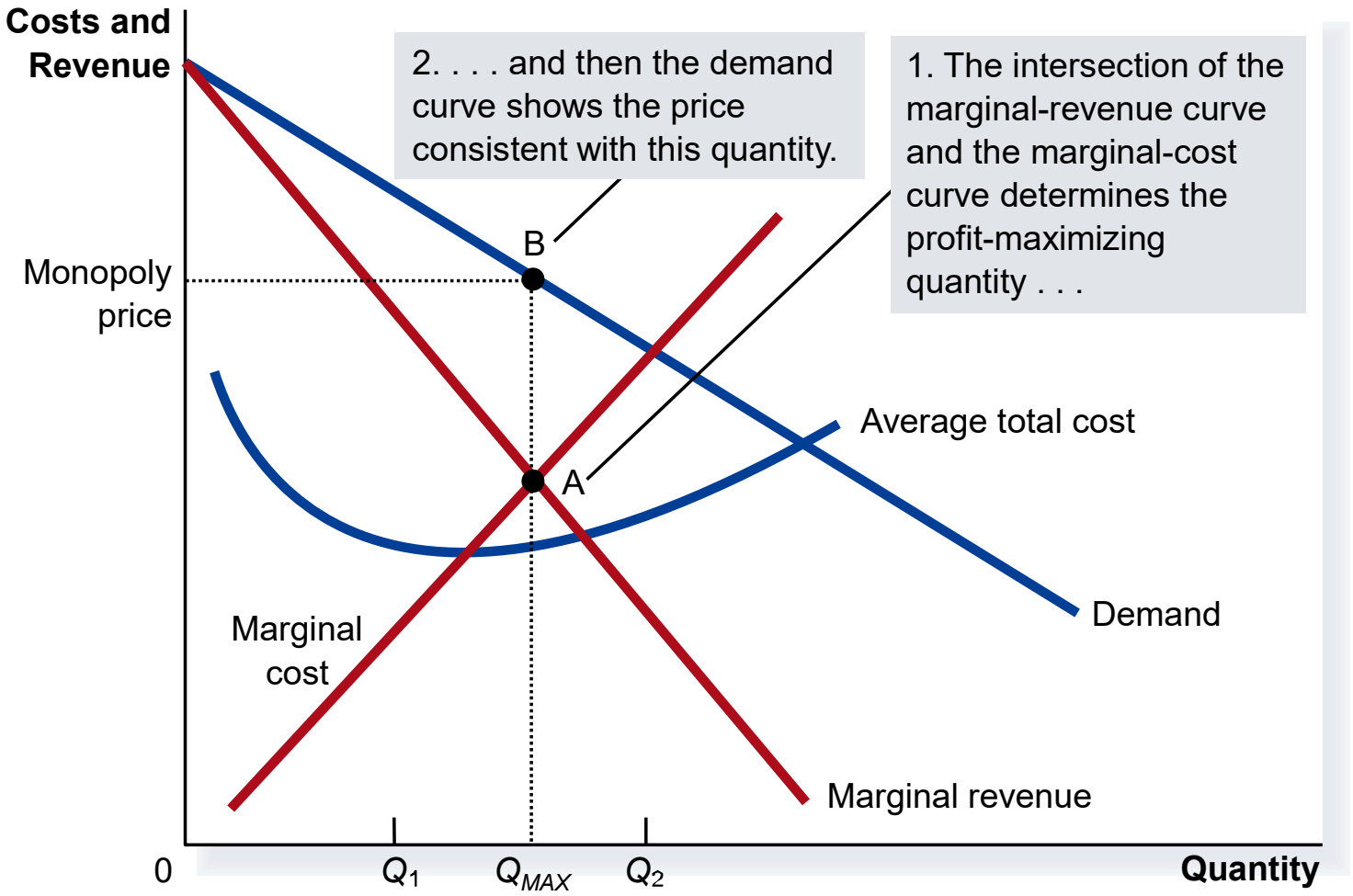
03 If P < ATC, it makes an economic loss.

ATC includes fixed costs and opportunity costs.

Profit Maximization



Profit Maximization

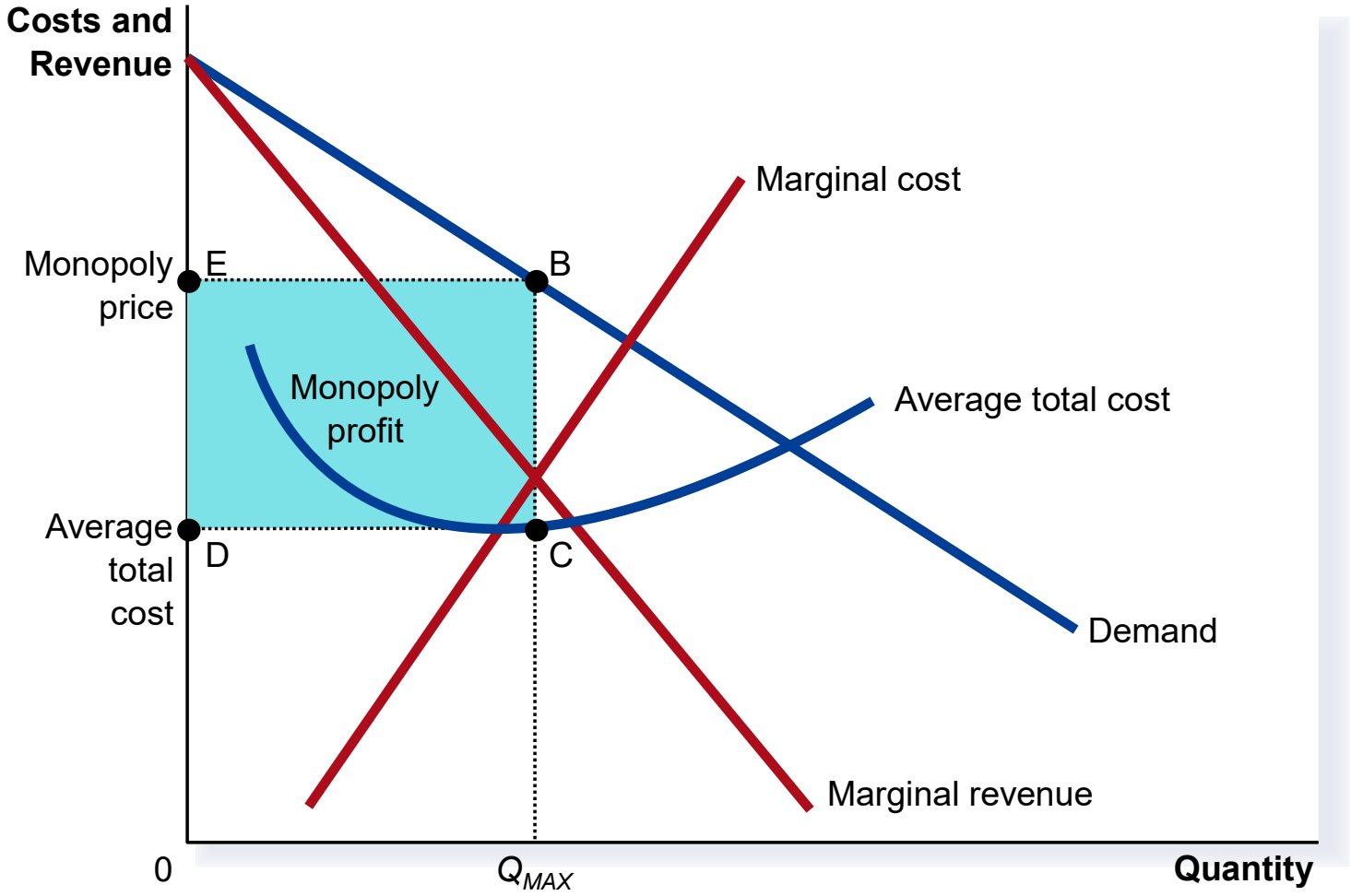


A Monopoly's Profit

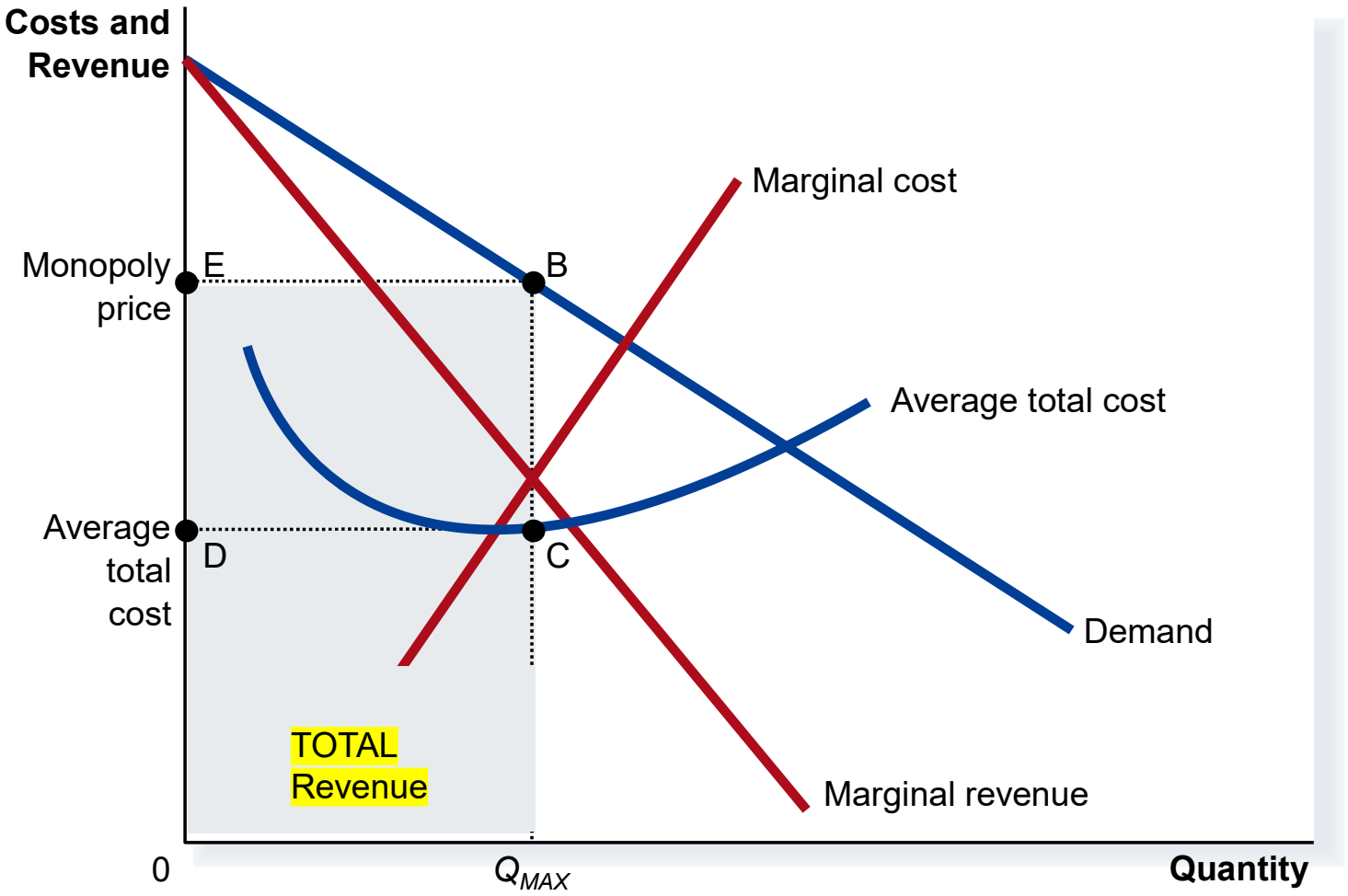
Profit equals total revenue minus total costs.

- Profit = ***TR - TC***
- Profit = $(TR/Q - TC/Q) \times Q$
- Profit = $(AR - ATC) \times Q$
- Profit = $\mathbf{(P - ATC) \times Q}$

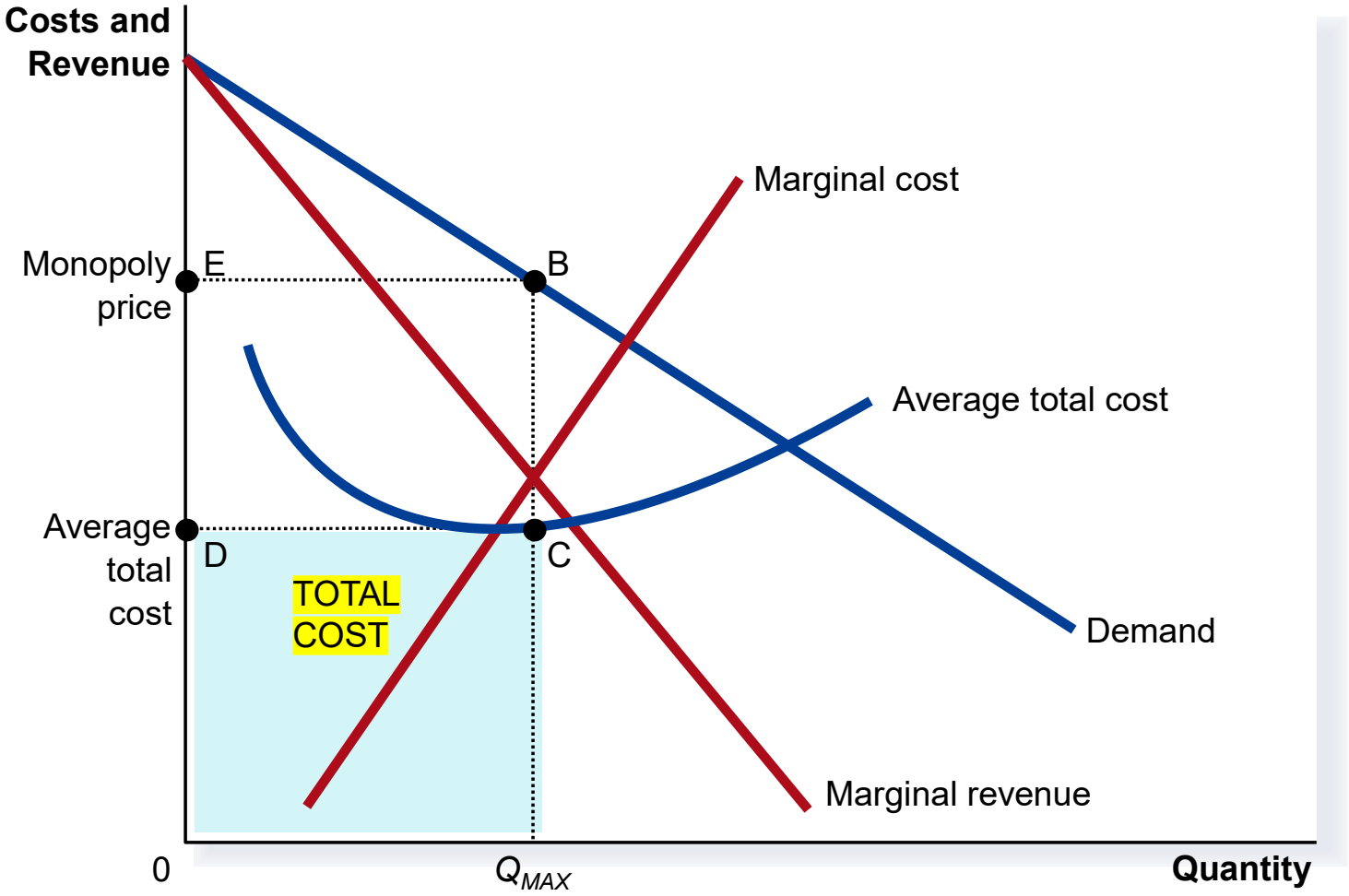
The Monopolist's Profit



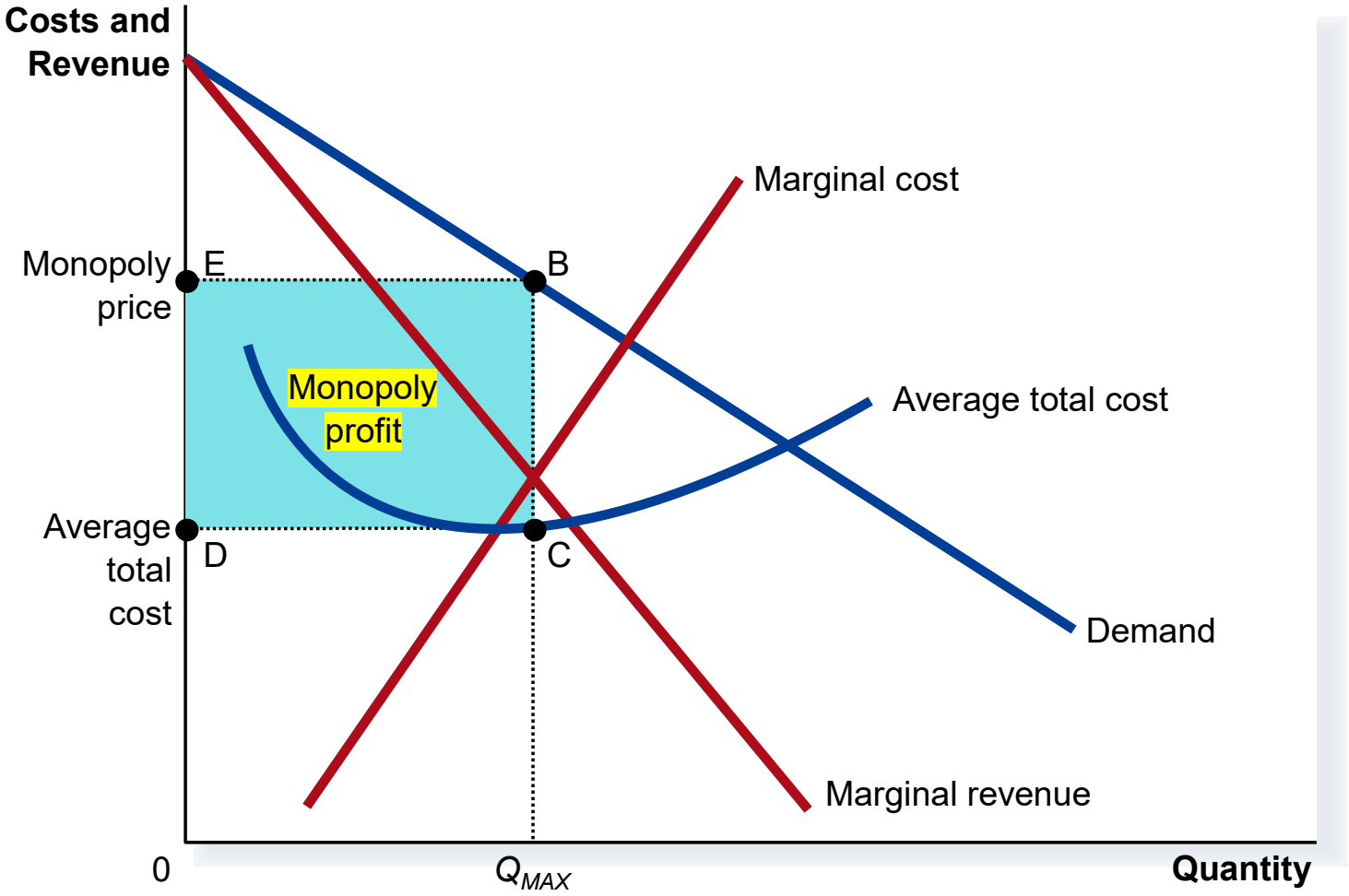
The Monopolist's Profit



The Monopolist's Profit

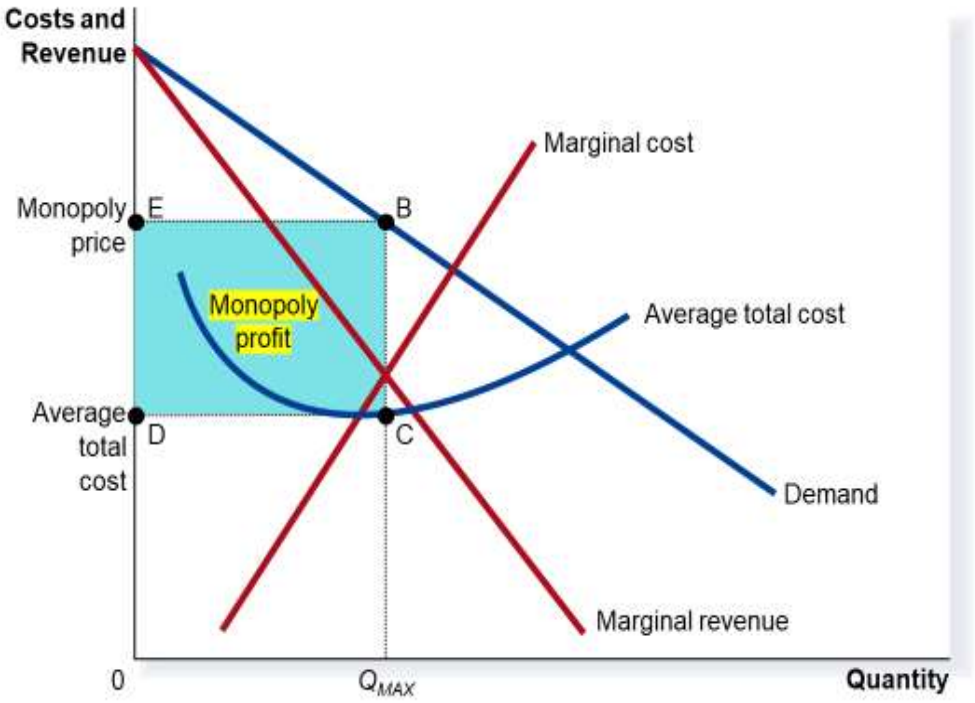


The Monopolist's Profit



A Monopolist's Profit

The monopolist will receive economic profits as long as price is greater than average total cost.



Calculate profit in three lines

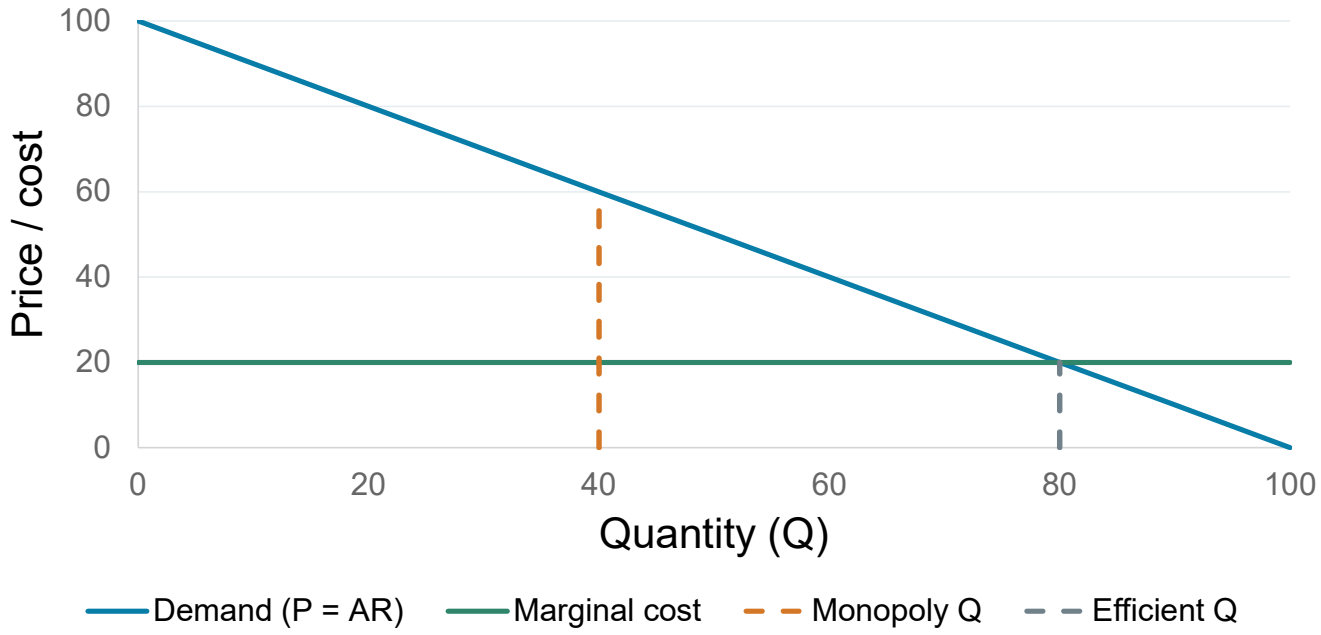
In our example	Calculation
Price = 60; quantity = 40	Total revenue = 60 × 40 = 2,400
ATC at Q = 40 is 30	Total cost = 30 × 40 = 1,200
Profit per unit = 30	Profit = 30 × 40 = 1,200

Competition and monopoly: the key difference

Standard model	Output rule	Price
Perfect competition	P = MR = MC	P = MC
Single-price monopoly	MR = MC	P > MC

A monopolist restricts output relative to the efficient benchmark.

Monopoly leaves beneficial trades unrealised



Monopoly: Q = 40

Efficient: Q = 80

Lost gains on units 40 to 80

Deadweight loss = value of beneficial trades that do not occur.

The Welfare loss of Monopoly

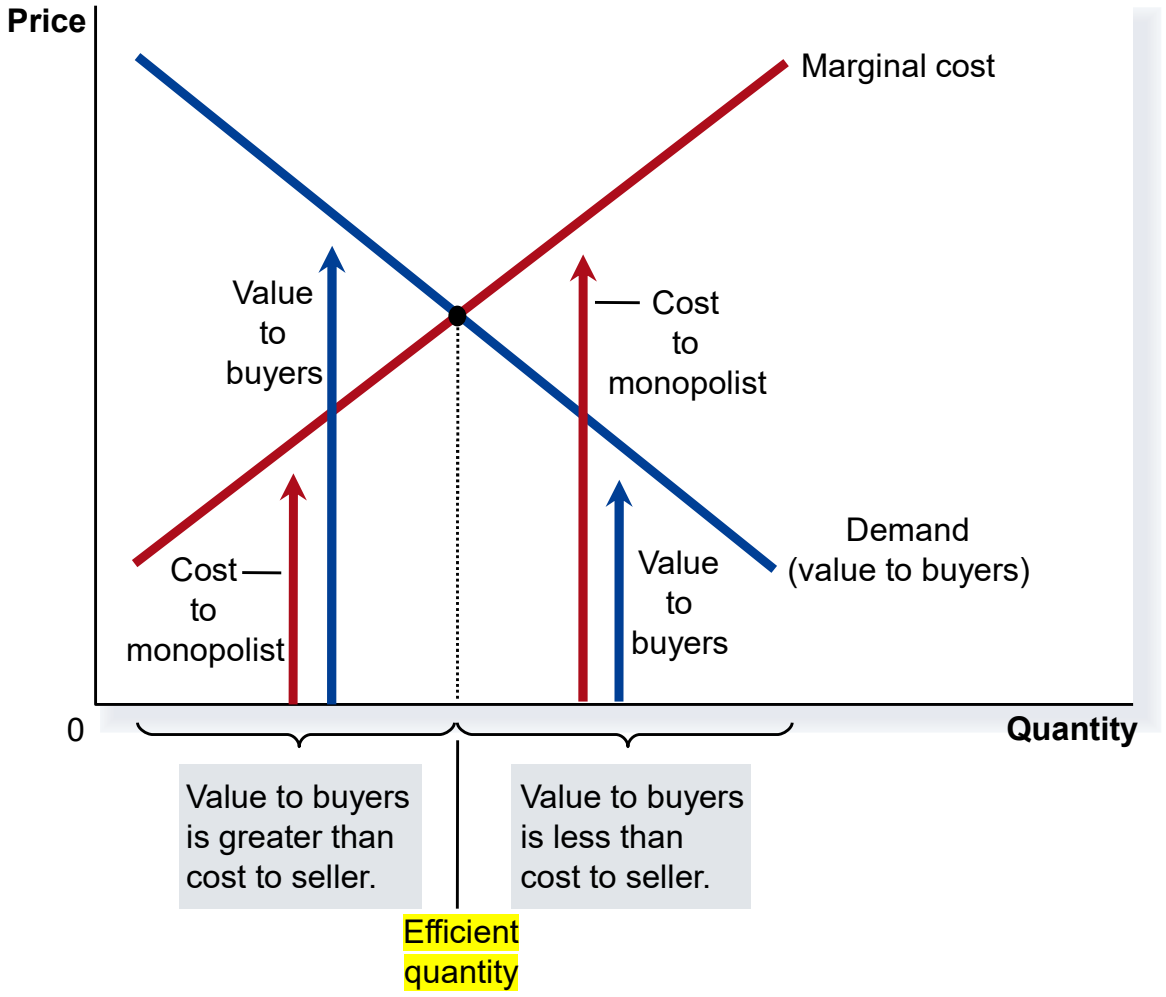
In contrast to a competitive firm, the monopoly charges a **price *above the marginal cost***.

From the standpoint of **consumers**, this high price makes monopoly undesirable.

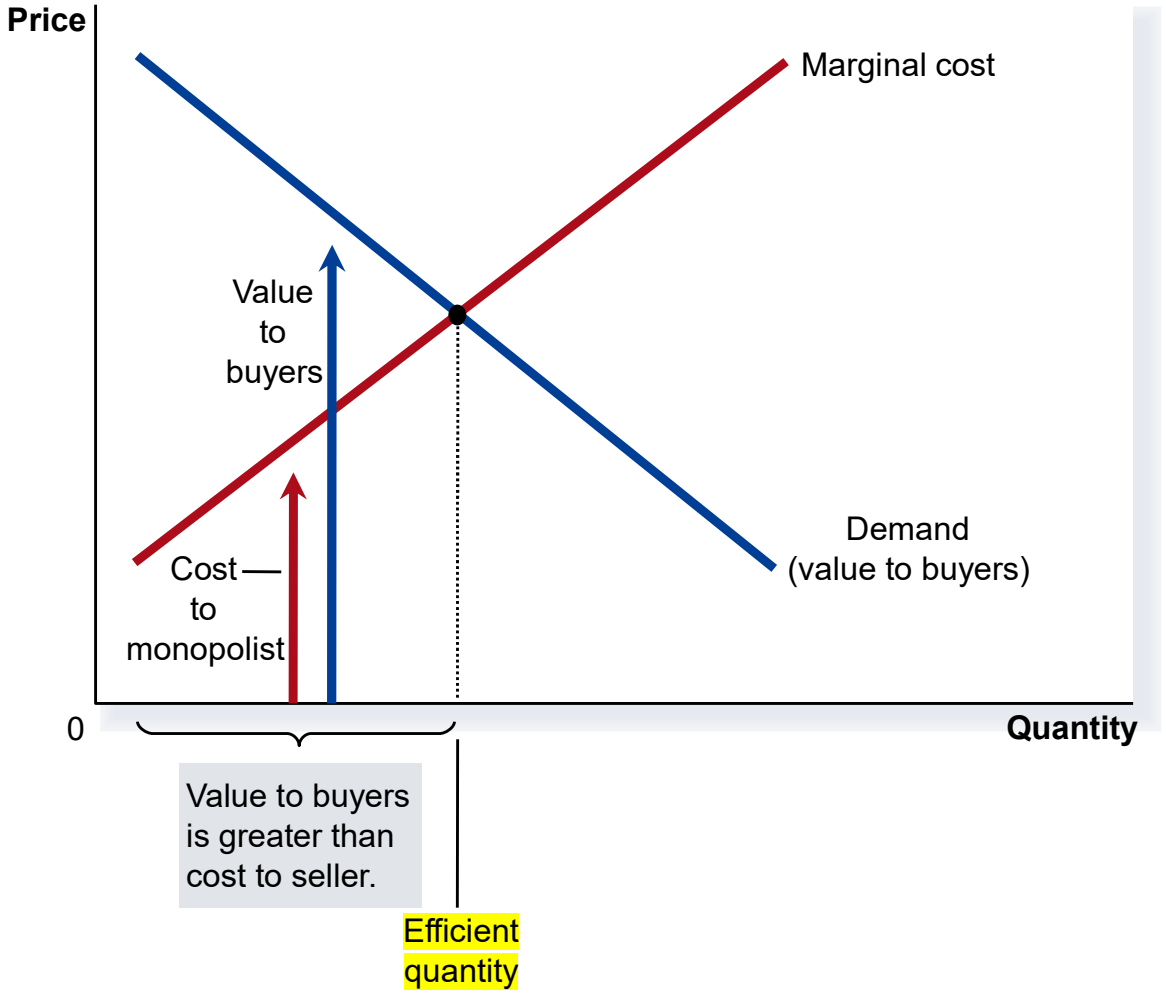
However, from the standpoint of the **owners** of the firm, the high price makes monopoly very desirable…

Then?

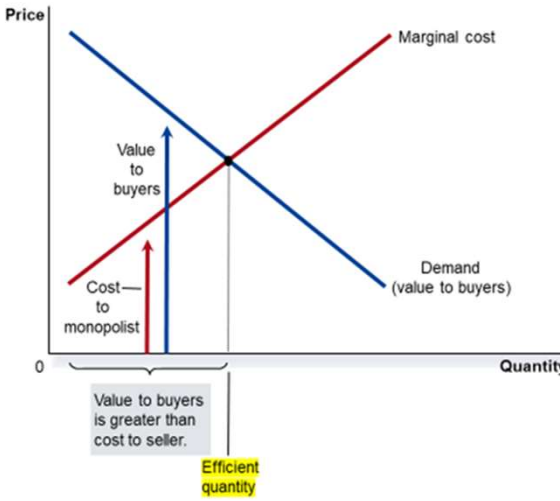
The Efficient Level of Output

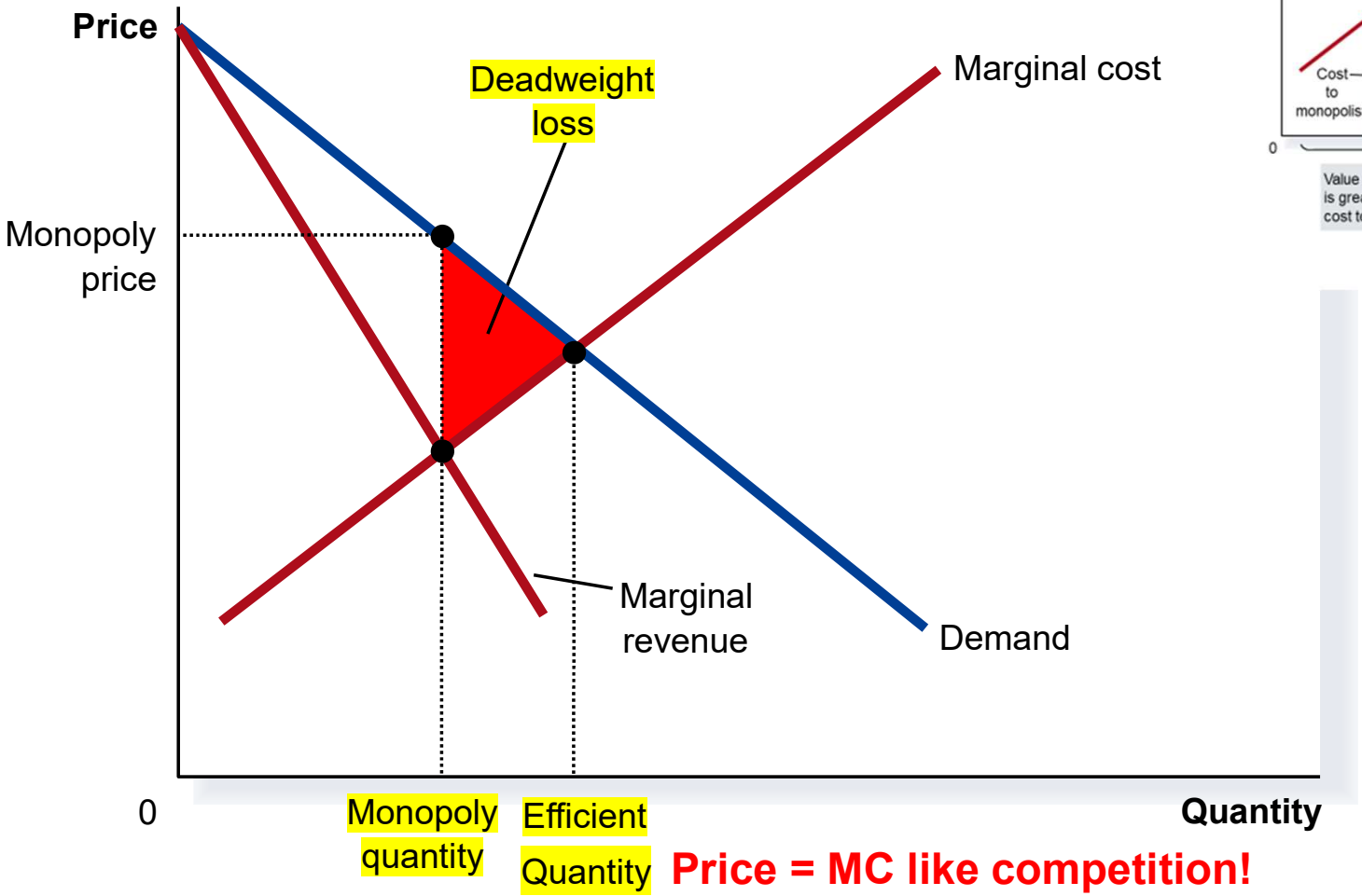


The Efficient Level of Output



The Inefficiency of Monopoly





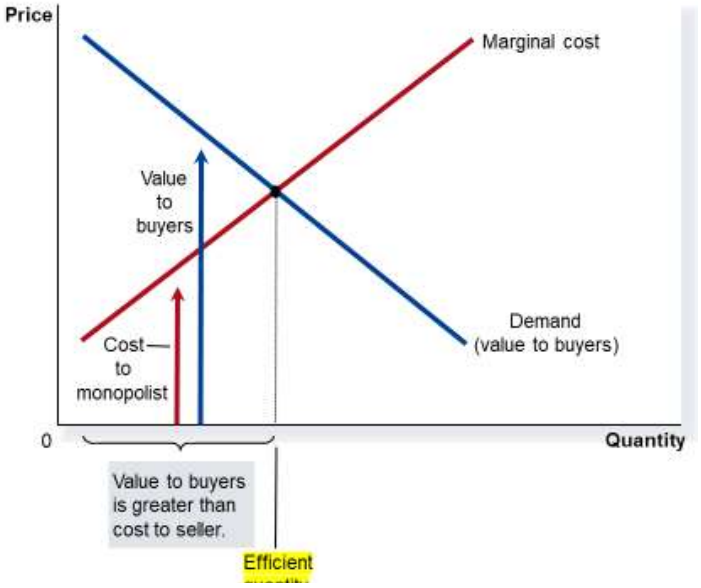
Price = MC like competition!

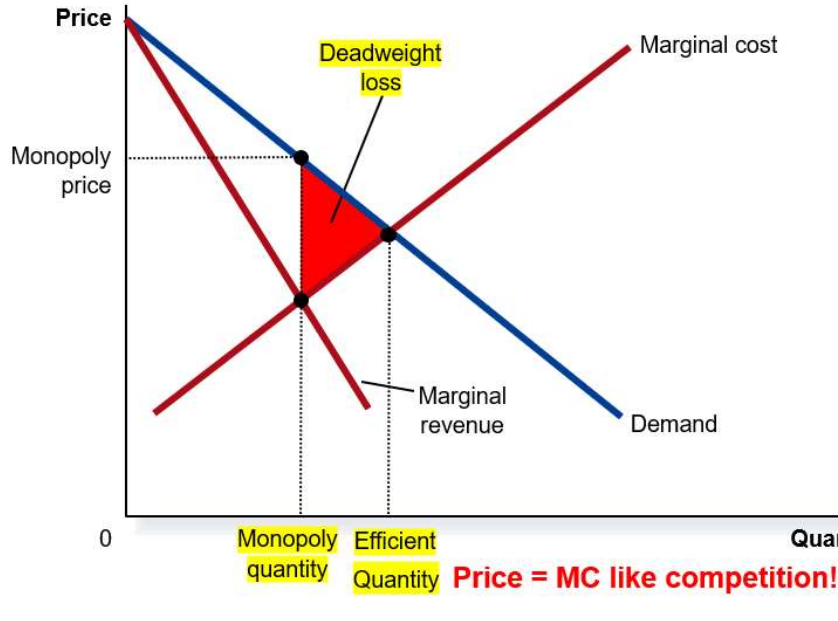
The Deadweight Loss

Because a monopoly sets its **price above marginal cost (= MR)**,

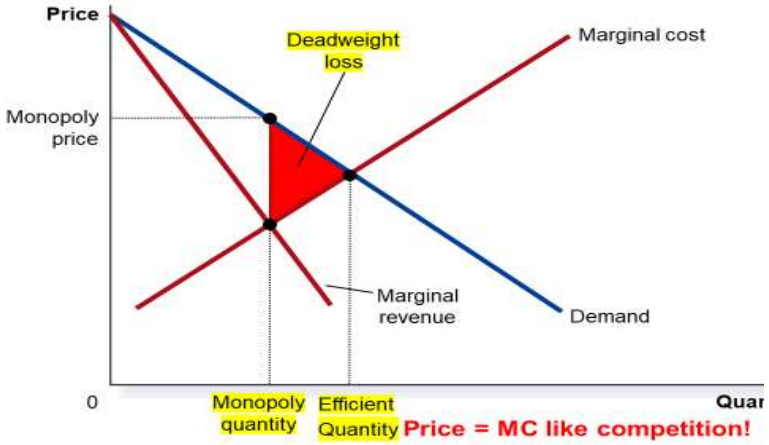
it places **a wedge between the consumer's willingness to pay and the producer's cost**.

- This wedge causes the quantity sold to be socially inefficient





The Deadweight Loss



The Inefficiency of Monopoly

- The monopolist produces *less than* the socially efficient quantity of output.

The deadweight loss caused by a monopoly is **like** the deadweight loss caused by a **tax**.

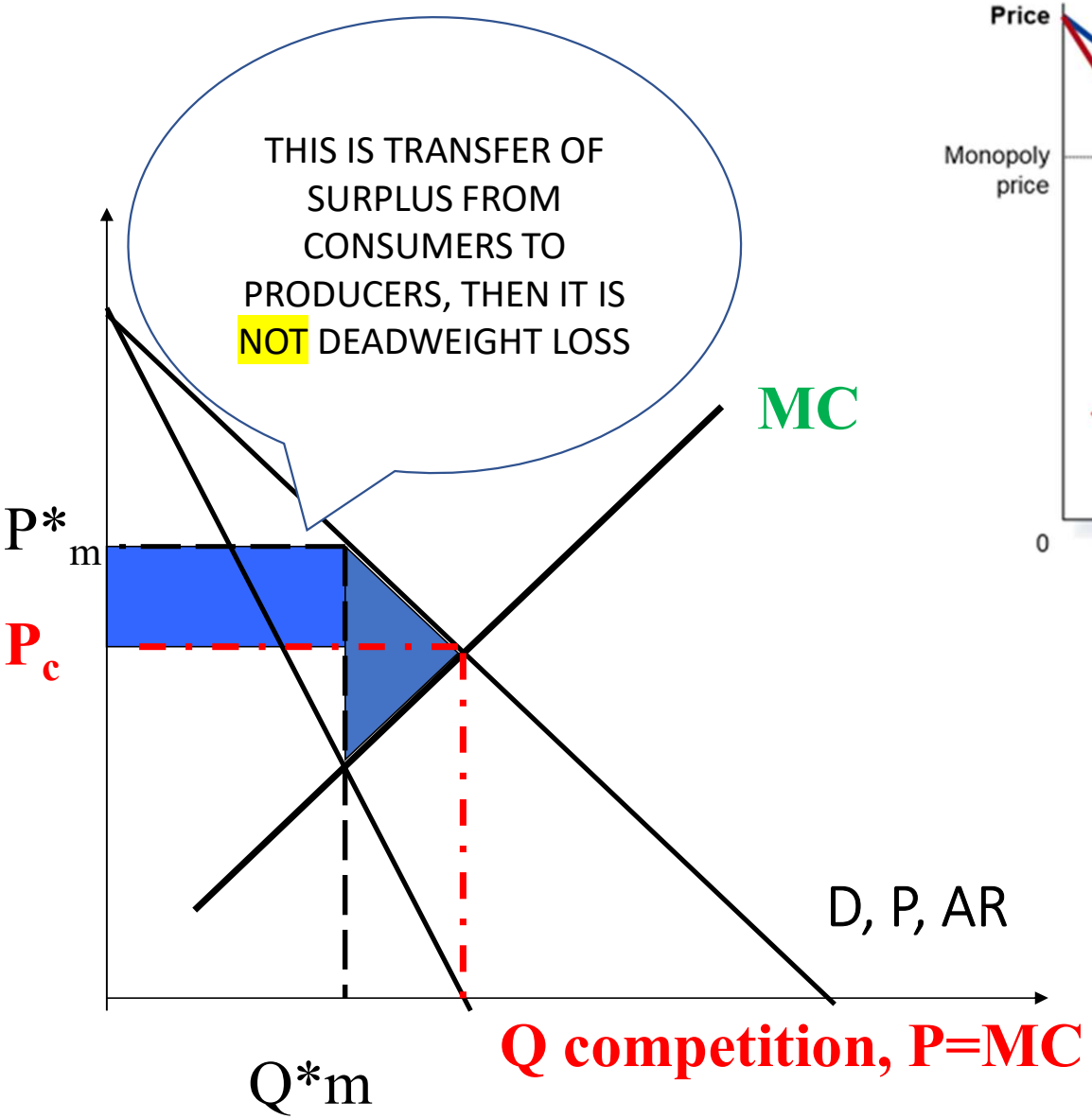
The **difference** between the two cases is that the government gets the revenue from a tax, whereas a private firm gets the monopoly profit.

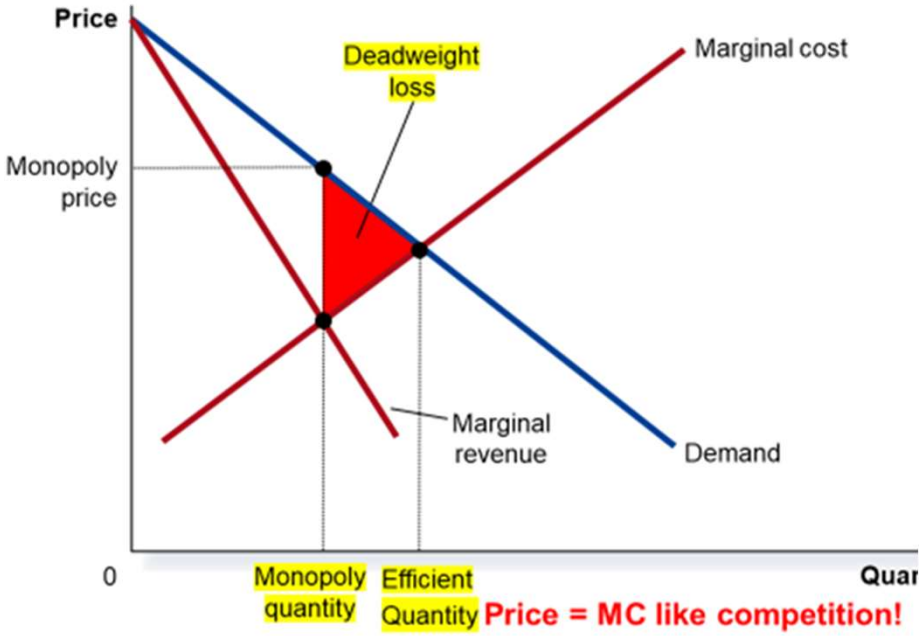
The Social Cost of monopoly

Welfare in a market includes the welfare of both consumers and producers.

The transfer of surplus from consumers to producers is therefore **not** a social loss.

The deadweight loss from monopoly stems from monopolies producing less than the socially efficient level of output


THIS IS TRANSFER OF SURPLUS FROM CONSUMERS TO PRODUCERS, THEN IT IS NOT DEADWEIGHT LOSS
MC
P*m
Pc
D, P, AR
Q*m
Q competition, P=MC


Price
Deadweight loss
Marginal cost
Monopoly price
Marginal revenue
Demand
0
Monopoly quantity
Efficient Quantity
Price = MC like competition!

The Deadweight Loss

- Producing output at MC=MR=P, perfectly competitive firm produces the efficient level of output
- Producing output at MC=MR < P, monopolist produces **less than** the efficient level of output
- **Deadweight loss is the surplus lost on the quantity that is not produced**
- That is, ***the monopolist does not produce a part of output that consumers value more than its cost***

Sum-up: Monopoly versus Competition

- Monopoly
  - Is the sole producer
  - Faces a downward-sloping demand curve – it will choose a point on the demand: which one?!
  - Is a price maker
  - Reduces price to increase sales
- Competitive Firm
  - Is one of many producers
  - Faces a horizontal demand curve
  - Is a price taker
  - Sells at same price

Why Monopolies Arise

- The fundamental cause of monopoly is the presence of barriers to entry…
- ***…which prevent potential competitors to enter the market and push downwards price and profits***
- **Barriers to entry** have mainly three sources:
  - (1) Ownership of a key resource for production.
  - (2) The government gives a single firm the exclusive right to produce some good.
  - (3) Costs of production make a single producer more efficient than many producers – Natural monopoly.

(1) Ownership of a key resource

- Although exclusive ownership of a key resource is a potential source of monopoly, in practice monopolies rarely arise for this reason.

(2) Exclusive rights granted by law

- Governments may restrict entry by giving a single firm the exclusive right to sell a particular good in a certain market
- Patent and copyright are two important examples of how government creates a monopoly to serve the public interest.
- Examples: patent protections on drugs for pharmaceutical companies (create incentives to invest in research, but high prices);
- copyright (protection of intellectual property) on literacy, musical, artistic work (copying, distributing, playing)…
    - **The benefits are the incentive for creative activity…Costs are in terms of higher prices**

(2) Exclusive rights granted by law

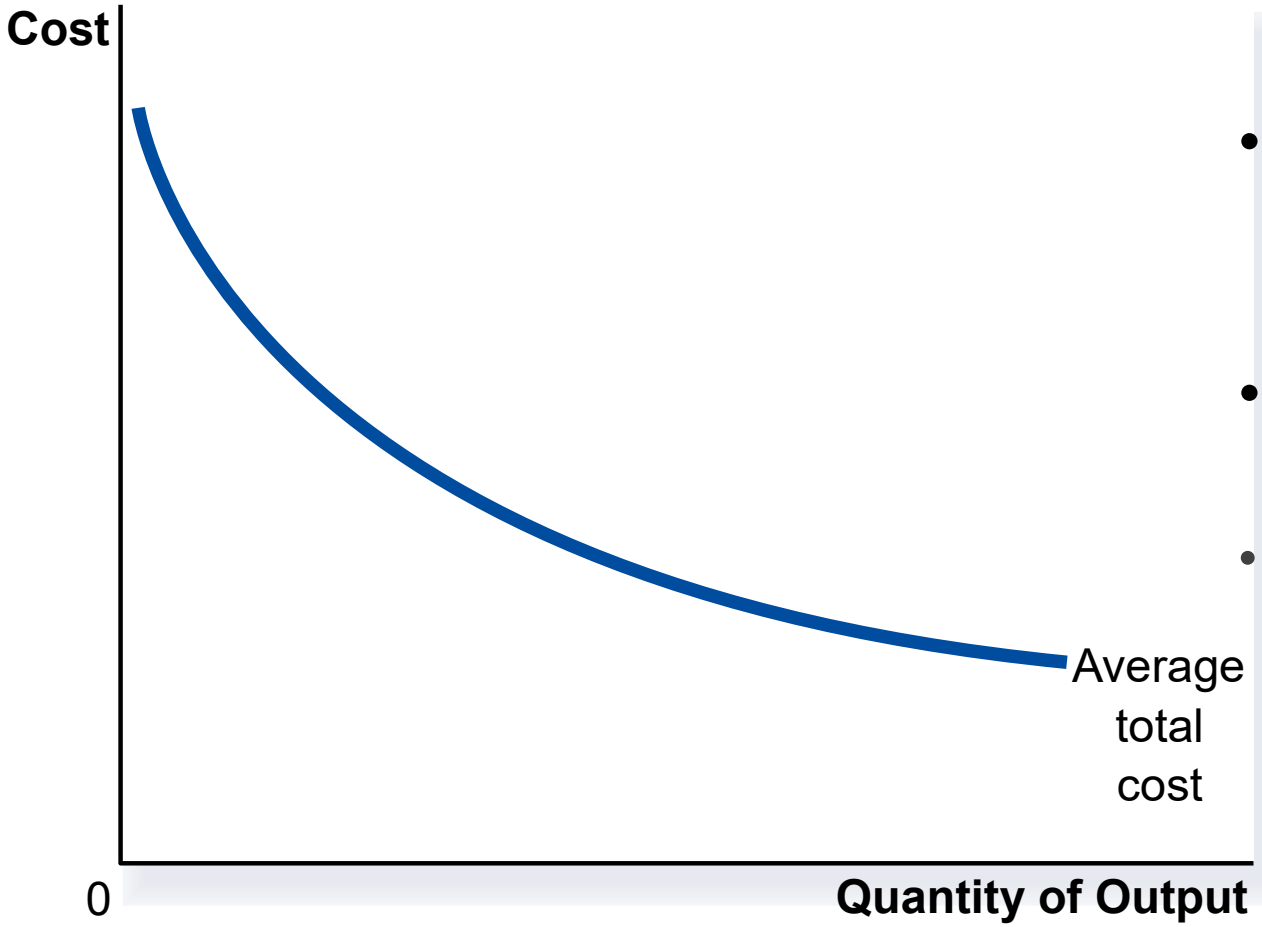
https://researchbriefings.files.parliament.uk/documents/CBP-9417/CBP-9417.pdf

Natural Monopoly

An industry is a *natural monopoly* when *a single firm can supply a good or service to an entire market at a smaller cost than could two or more firms.*

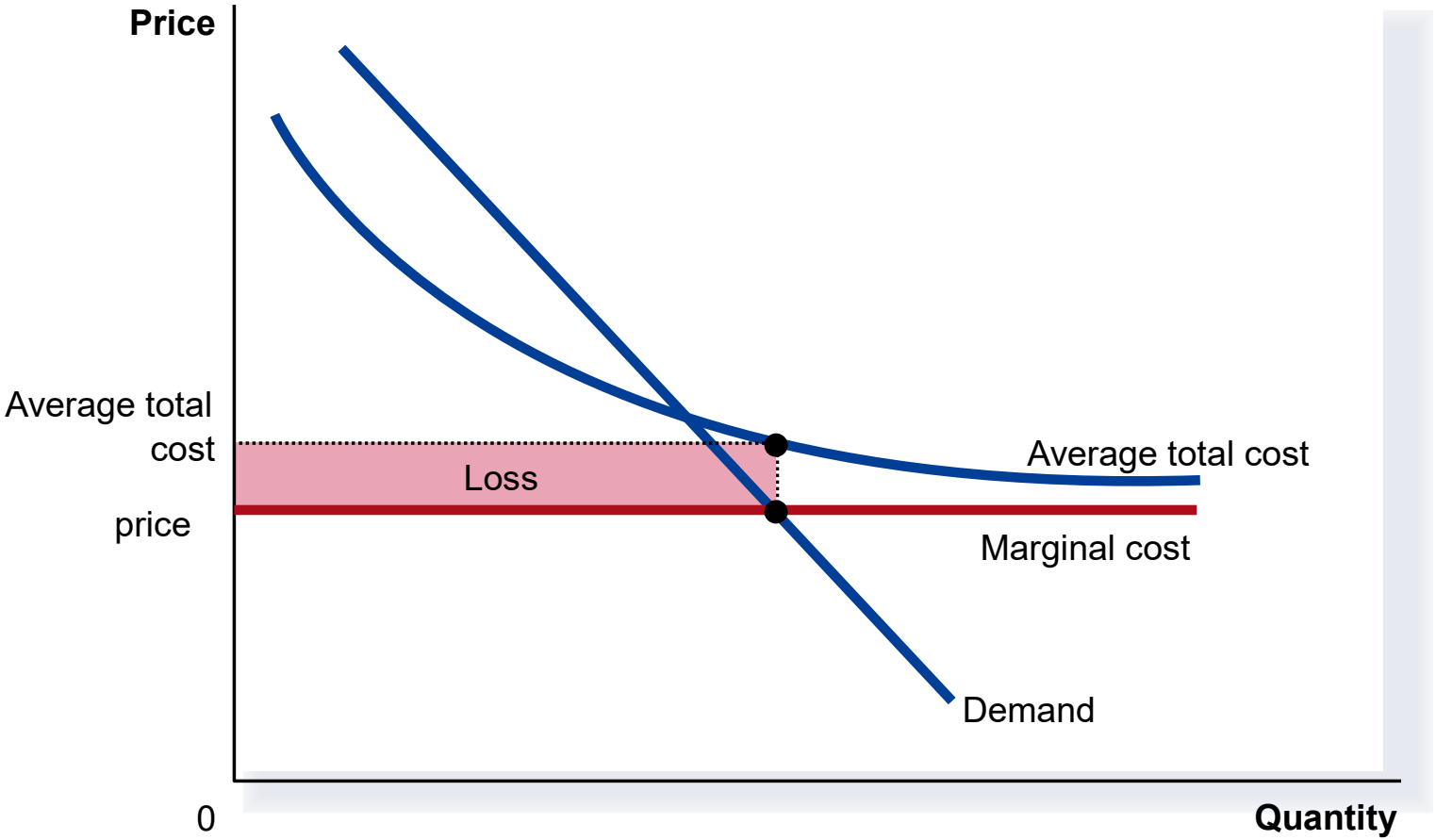
A natural monopoly occurs when there are economies of scale, implying that ***average total cost falls*** as the firm's dimension becomes larger.

Economies of Scale - the Cause of natural Monopoly



- Cost of production fixed very high and
- Marginal Cost very low and constant…
- TC/Q decreases as Q increases
- examples: public park, bridge, fire service, cable tv, drinkable water/energy/gas, railway transport….

Price equal to Marginal Cost



Regulation

Government may regulate the prices that the monopoly charges (like companies supplying utilities).

In practice, regulators will allow monopolists to keep some of the benefits from lower costs in the form of **higher profit**

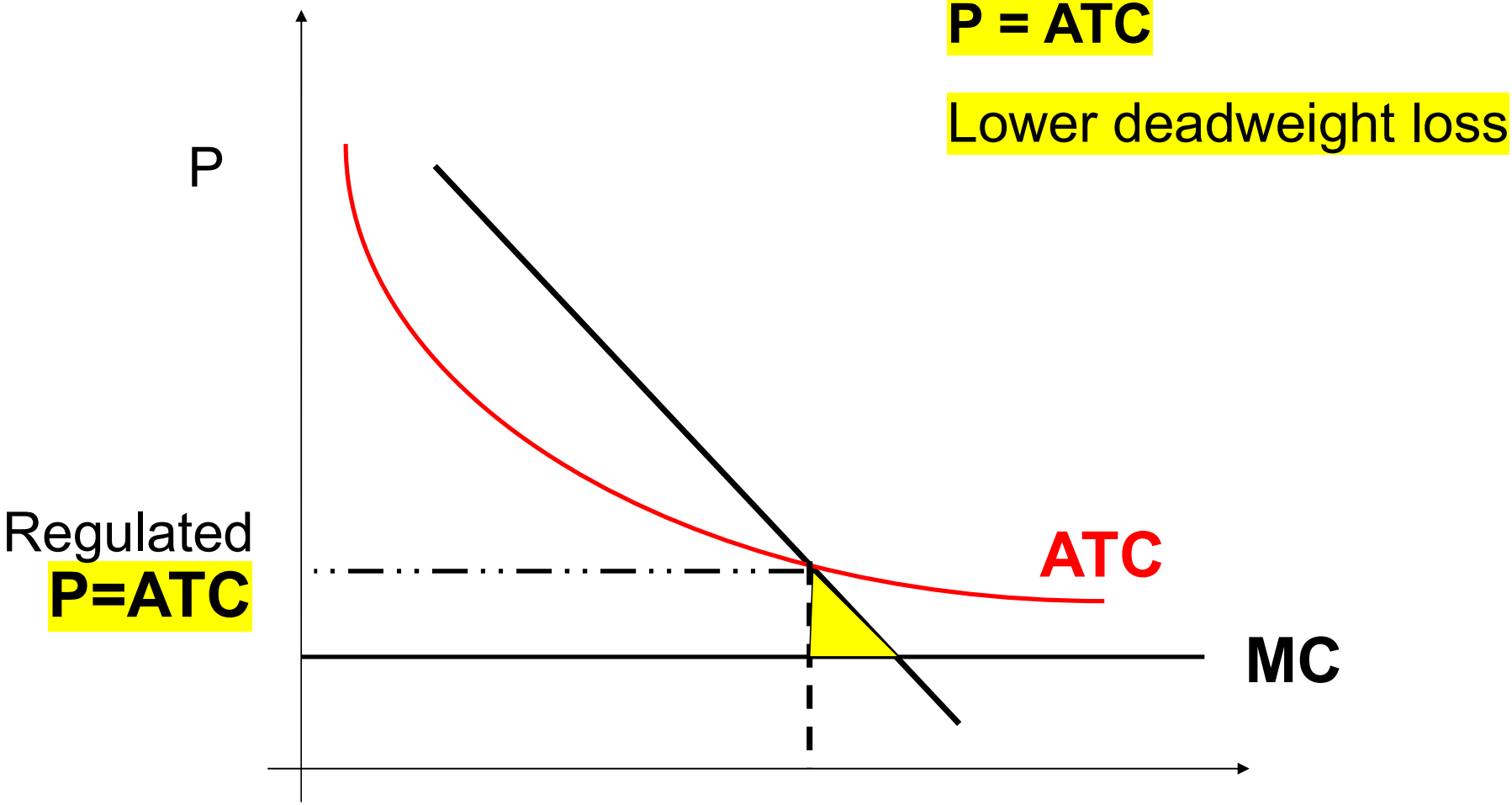
...a practice that requires **some departure from marginal cost pricing**

- Allow firm to fix price equal to **average total cost**
- Null economic profit but all opportunity costs are covered…
    - **…a smaller deadweight loss…**

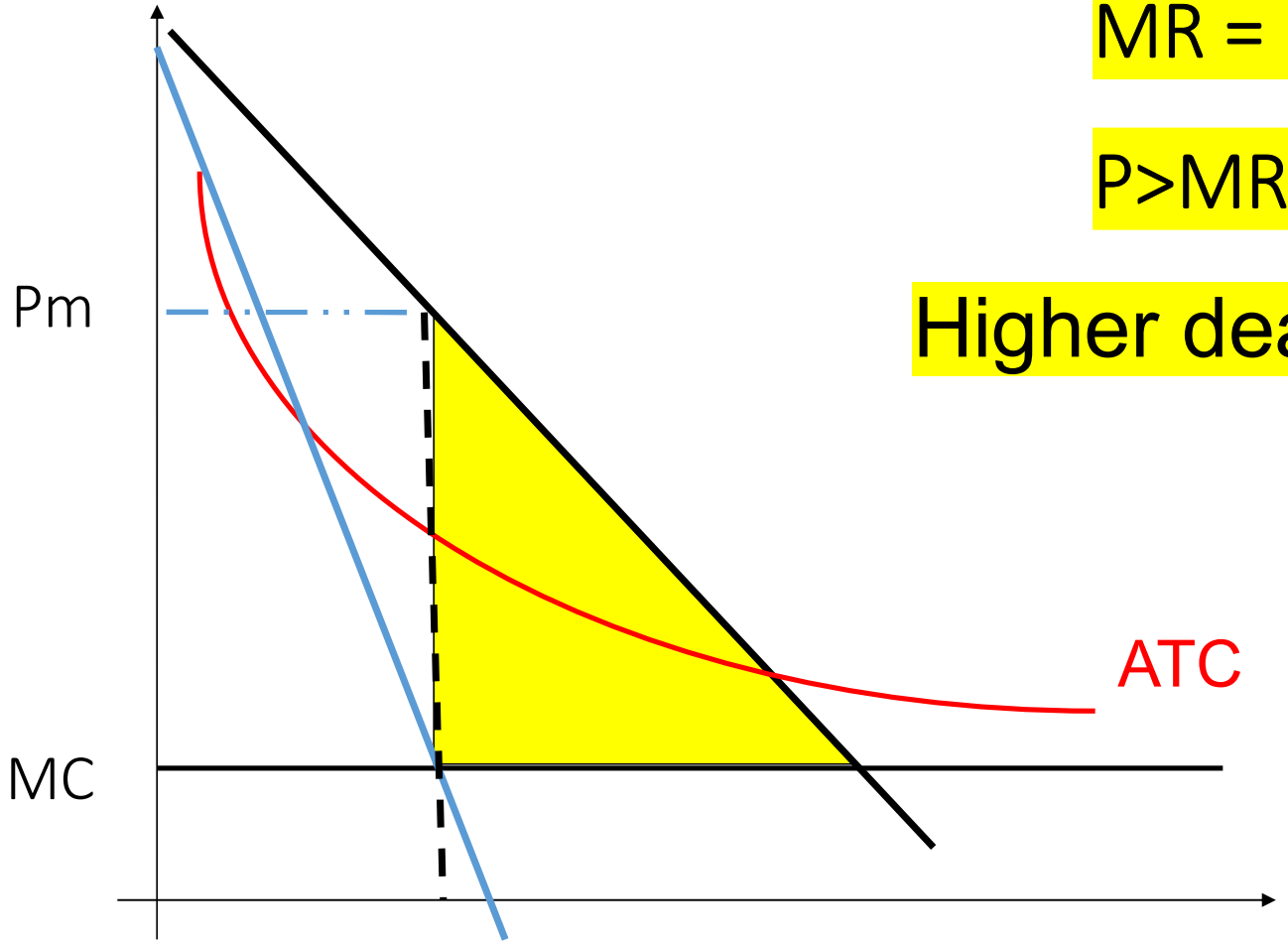
Price equal to ATC

P = ATC

Lower deadweight loss



Price as unregulated monopoly



MR = MC

P>MR

Higher deadweight loss

Public Ownership

Rather than regulating a *natural monopoly* that is run by a private firm, the government can run the monopoly itself

It can eliminate the problem of underproduction; however, the taxpayer will bear the costs…

…and there is not incentive to reduce costs in order to increase profits

Increasing Competition

Governments have various ways to respond to the problem of monopoly, another one is promoting competition by using competition laws

USA Competition law is known as anti-trust law.

In the UK and elsewhere in Europe such laws are usually referred to as competition laws

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-
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Increasing Competition

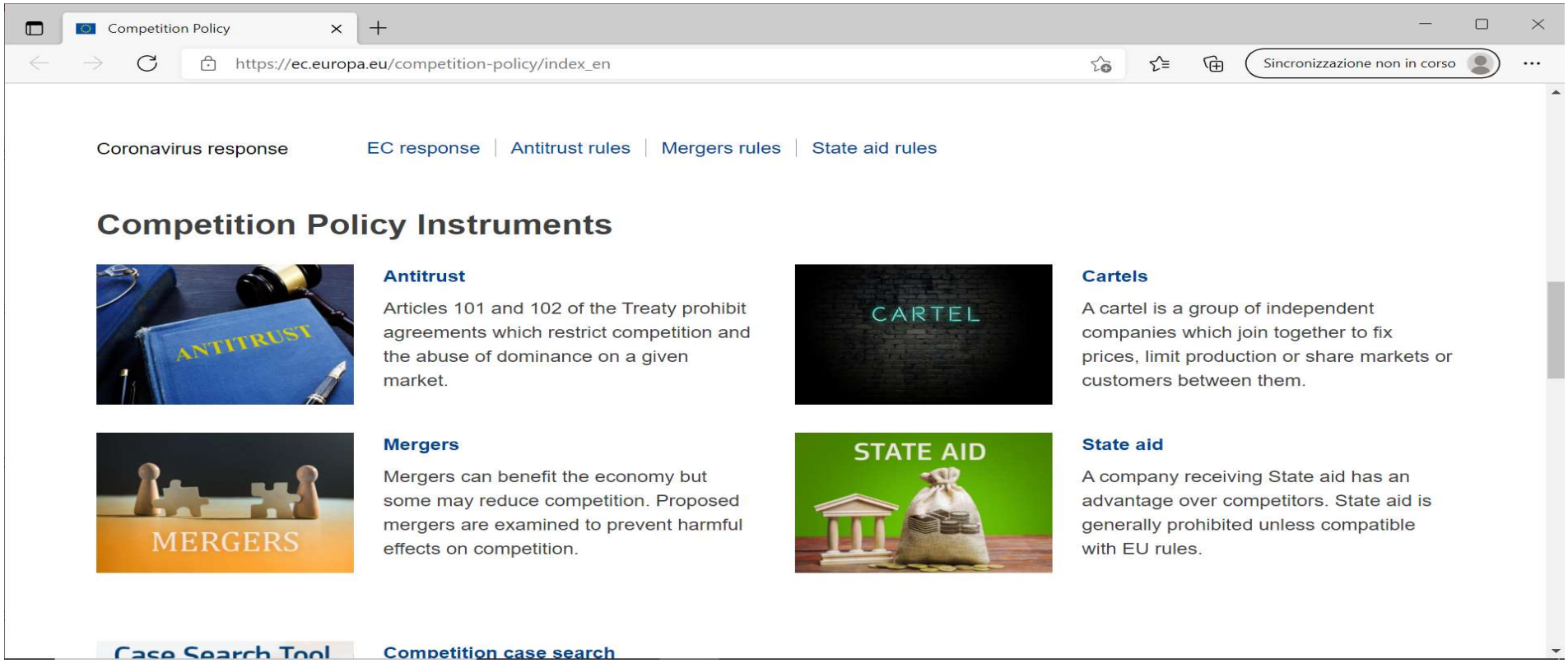
https://ec.europa.eu/competition/general/overview_en.html

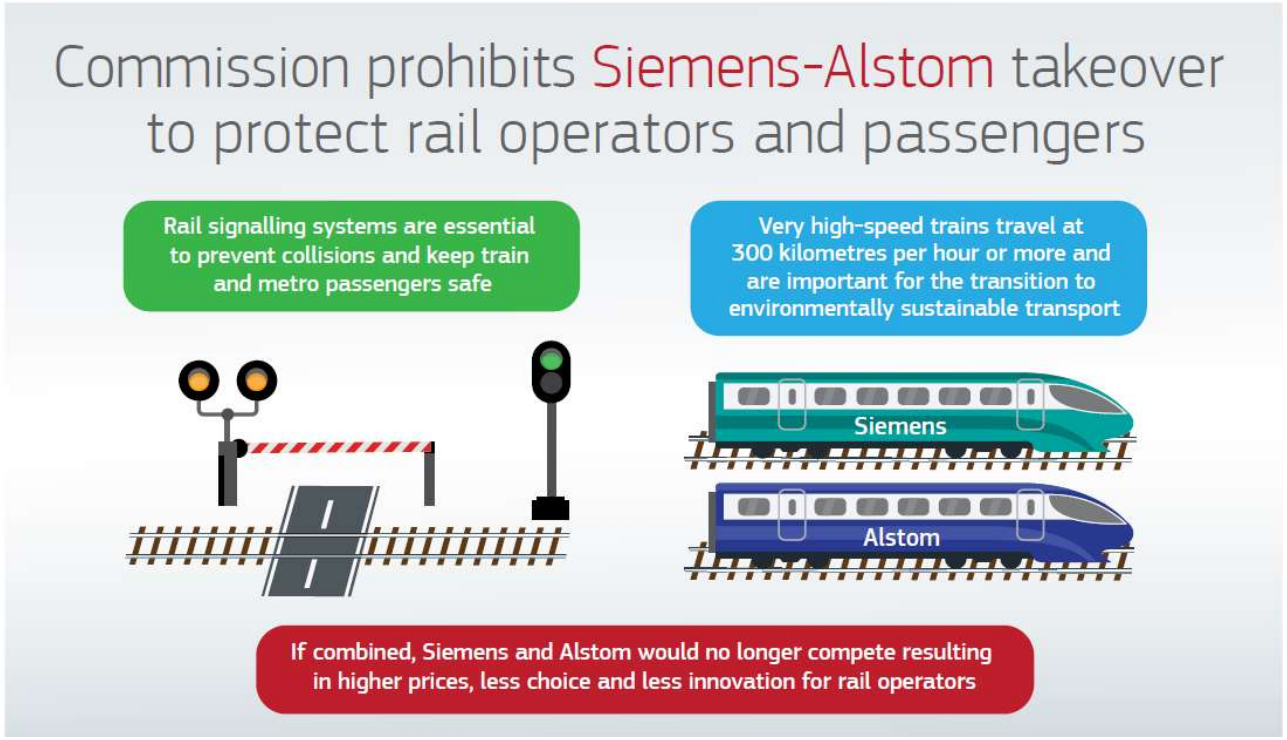
- Governments may prevent mergers.
- Governments may break up companies.

https://ec.europa.eu/competition/mergers/overview_en.html

- Competition laws prevent companies from undertaking activities that make markets less competitive (acquisitions, joint ventures…)

Increasing Competition





Siemens (Germany) and Alstom (France) are both global leaders in rail transportation - Trains and the signalling equipment

the merger would have harmed competition in several markets for railway signalling systems and in the market for very high-speed trains.

It would have created the undisputed market leader in several railway signalling markets and a dominant player in very high-speed trains in the EEA.

the competitive pressure from remaining competitors would not have been sufficient to ensure effective competition



These rules made retailers pay more in bank services to receive card payments than if they had been free to shop around for lower-priced services.

The cross-border rules equally led to higher prices for retailers and consumers, limited cross-border competition

Increasing Competition

Following link: EU Commission report to EU Parliament on Competition policy, with some cases :

https://op.europa.eu/en/publication-detail/-/publication/6308251e-4fcd-11eb-b59f-01aa75ed71a1/language-en/format-PDF/source-195688247

Some links to news about Europen institutions and policies in favour of competition

https://europa.eu/youreurope/business/selling-in-eu/competition-between-businesses/competition-rules-eu/index_it.htm

https://ec.europa.eu/competition/consumers/institutions_it.html

https://ec.europa.eu/commission/presscorner/detail/sv/IP_19_881

Doing Nothing

Government may do nothing at all if the market failure is deemed small compared to the imperfections of public policies.