Economics I

Decision- making Firm in Perfect Competition

INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

Course Objectives:

The aim of the lecture is to characterize the assumptions of perfect competition. Explain the functioning of the firm under perfect competition, the formation of the balance of the company in the market of perfect competition. Show the formation of the gain or loss, graphically outline the effect of changes in the cost and other factors on the supply and explain the elasticity of supply.

Explain the effectiveness of consumer surplus and producer surplus, to analyze the impact of changes in demand and supply on market equilibrium. Clarify allocation and production efficiency.

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Content:

References and further reading:

1. MACÁKOVÁ, L. aj. *Mikroekonomie – základní kurs*. 10. vyd. Praha: Melandrium Slaný, 2007. ISBN 978-80-86175-56-0. s. 12-45.
2. SIRŮČEK, P., NEČADOVÁ, M. *Mikroekonomická teorie 1 – cvičebnice.* 1. vyd. Praha: Melandrium Slaný, 2001. ISBN 80-86175-17-0. s. 11-62.
3. BRADLEY, R. SCHILLER*. Mikroekonomie.* Brno: Computer Press, 2004. ISBN 80-251-0109-6.
4. HOLMAN, R. *Mikroekonomie – středně pokročilý kurz.* 1. vyd. Praha: C. H. Beck, 2002. ISBN 80-7179-737-5.
5. HOLMAN, R. *Ekonomie.* 3. vyd. Praha: C. H. Beck, 2002. ISBN 80-7179-681-6.
6. TULEJA, P., NEZVAL, P., MAJEROVÁ, I. *Základy mikroekonomie* (Učebnice pro ekonomické a obchodně podnikatelské fakulty). 1. vyd. Brno: Nakladatelství CP Books, a. s., 2005. ISBN 80-251-0603-9.

1.

PERFECTLY COMPETITIVE FIRM SUPPLY

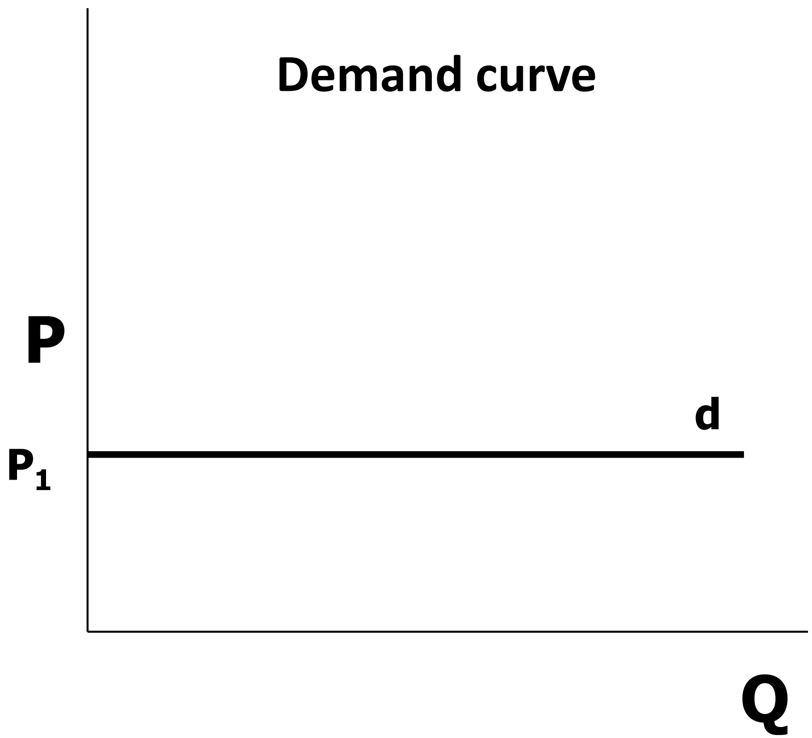
1.1 Assumptions perfectly competitive firms

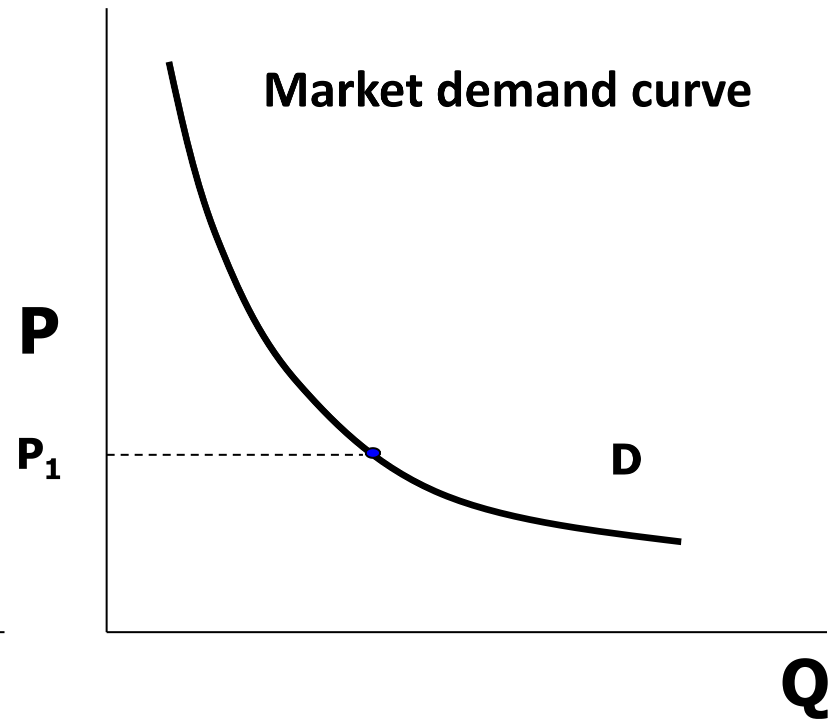
- price independence to the company production volume
- homogeneous product
- perfect long-term mobility of PF
- perfect information for all consumers and firms
- large number of companies,
- no barriers to entry into the industry

1.2 Perfectly competitive firms
Balance

Equilibrium in perfect competition

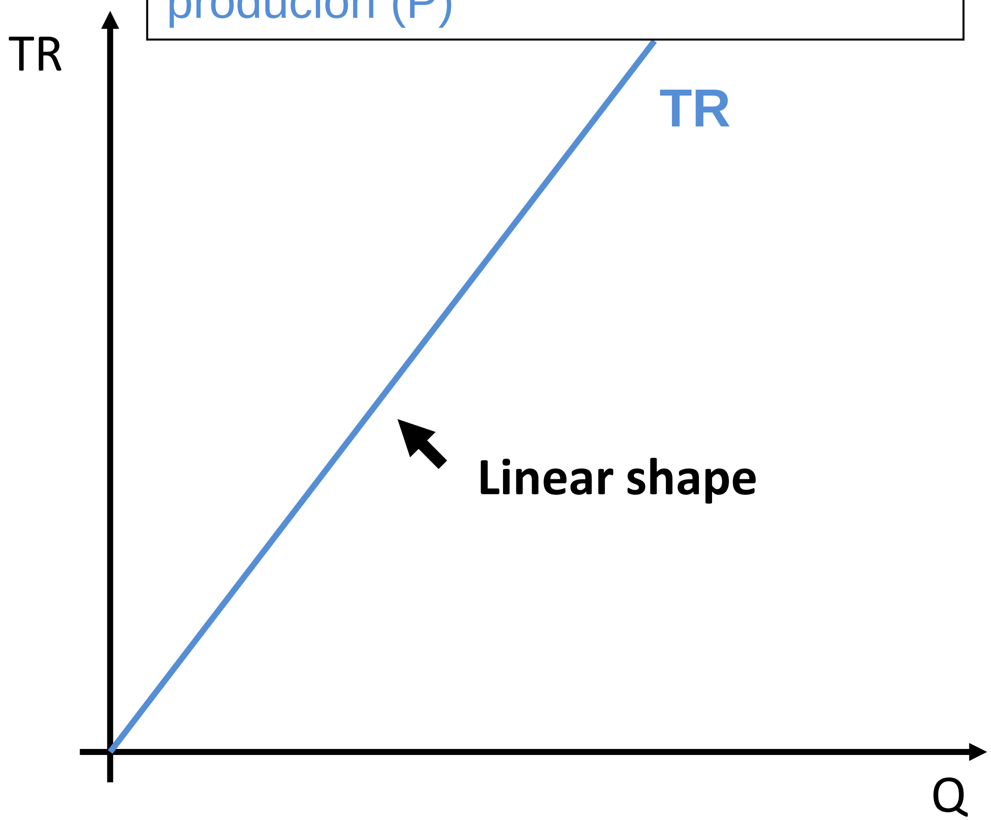
The most important feature of perfect competition is the independence of prices on production volume.





Developement of the total revenues (TR)

The direction of TR is the price of producion (P)



In perfect competition:

P = MR = AR = d

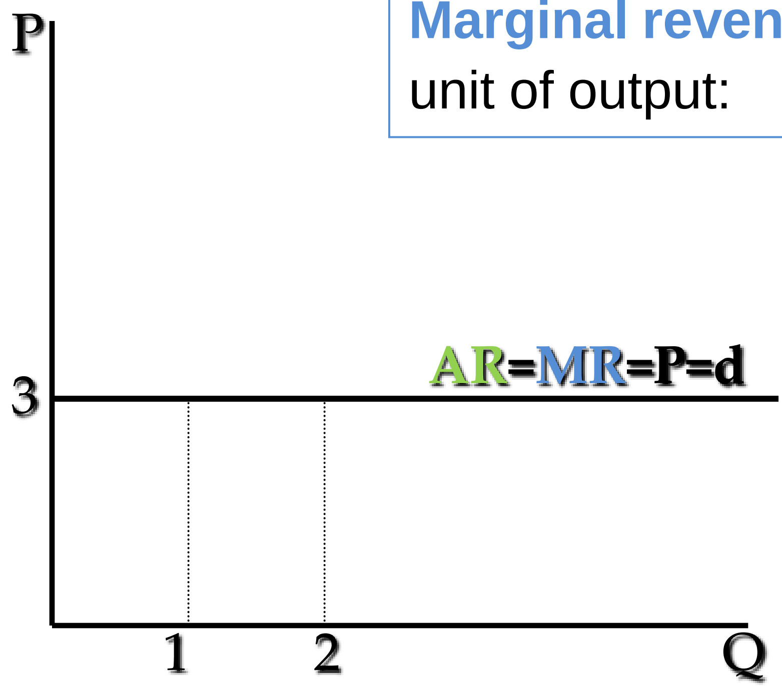
TR = P.Q = AR.Q

TR

Firm is price taker.

In conditions of PC je price of production constant.

Average and marginal revenue

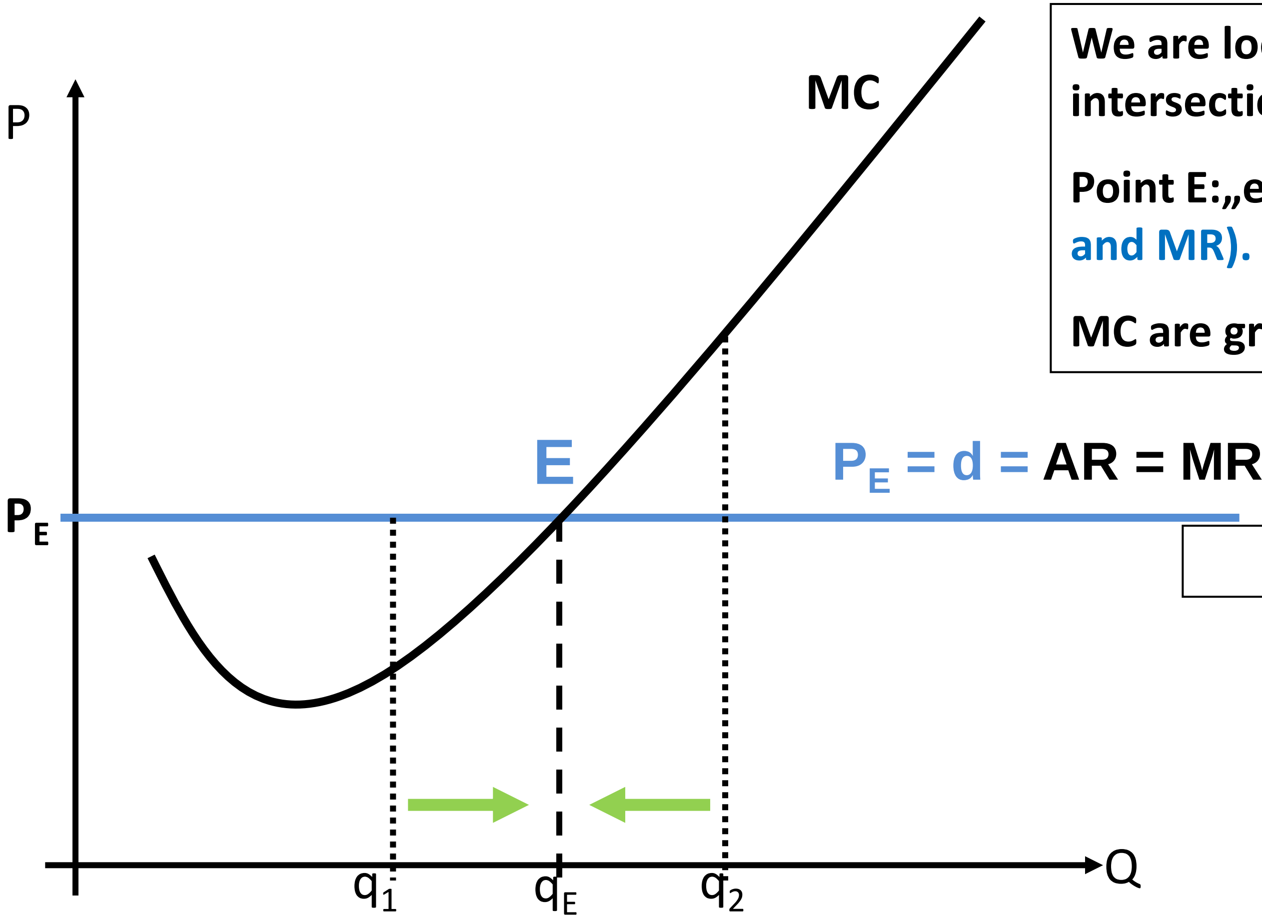


Marginal revenue = revenue from the addional sold unit of output: **MR =Δ TR/ ΔQ**

Average revenue = revenue from the unit of output: **AR = TR/Q**

- Price is givven by the market
  → **is constant**
- Average and marginal revenue is the same as the price level
- AR and MR curve is the demand curve for the production

Optimum output determination (q_E)



We are looking for the intersection of MC a MR.

Point E:„equilibrium pointů (MC and MR).

MC are growing.

MR and MC

Goal – profit maximalization

MR > MC – total revenues are growing faster than total costs. ⟶ Increase the production

MR < MC – total revenues are growing slower than total costs. ⟶ dencrease the production

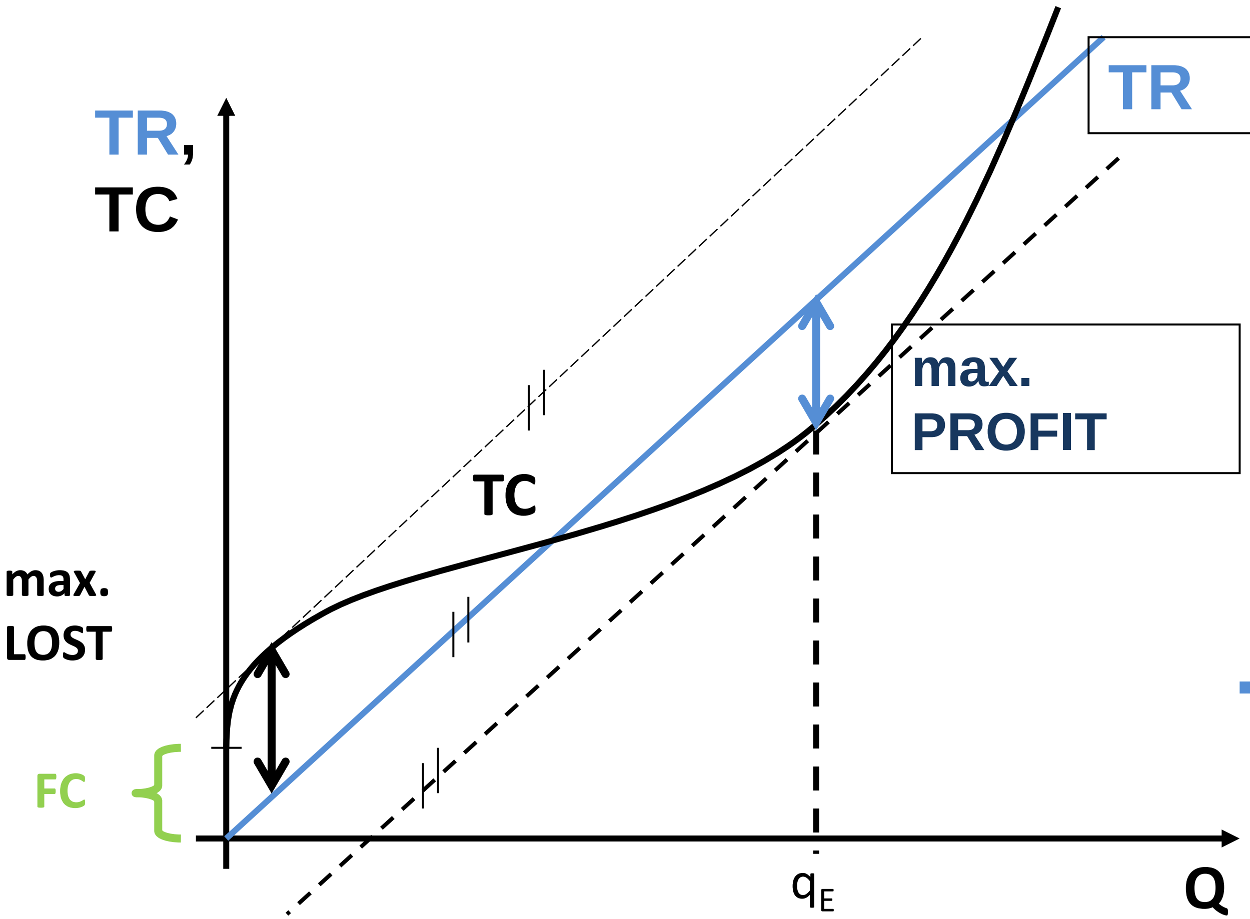
MR = MC – maximum profit

Golden rule of the profit maximalization

$$\boxed{MR = MC}$$

TR and TC development,

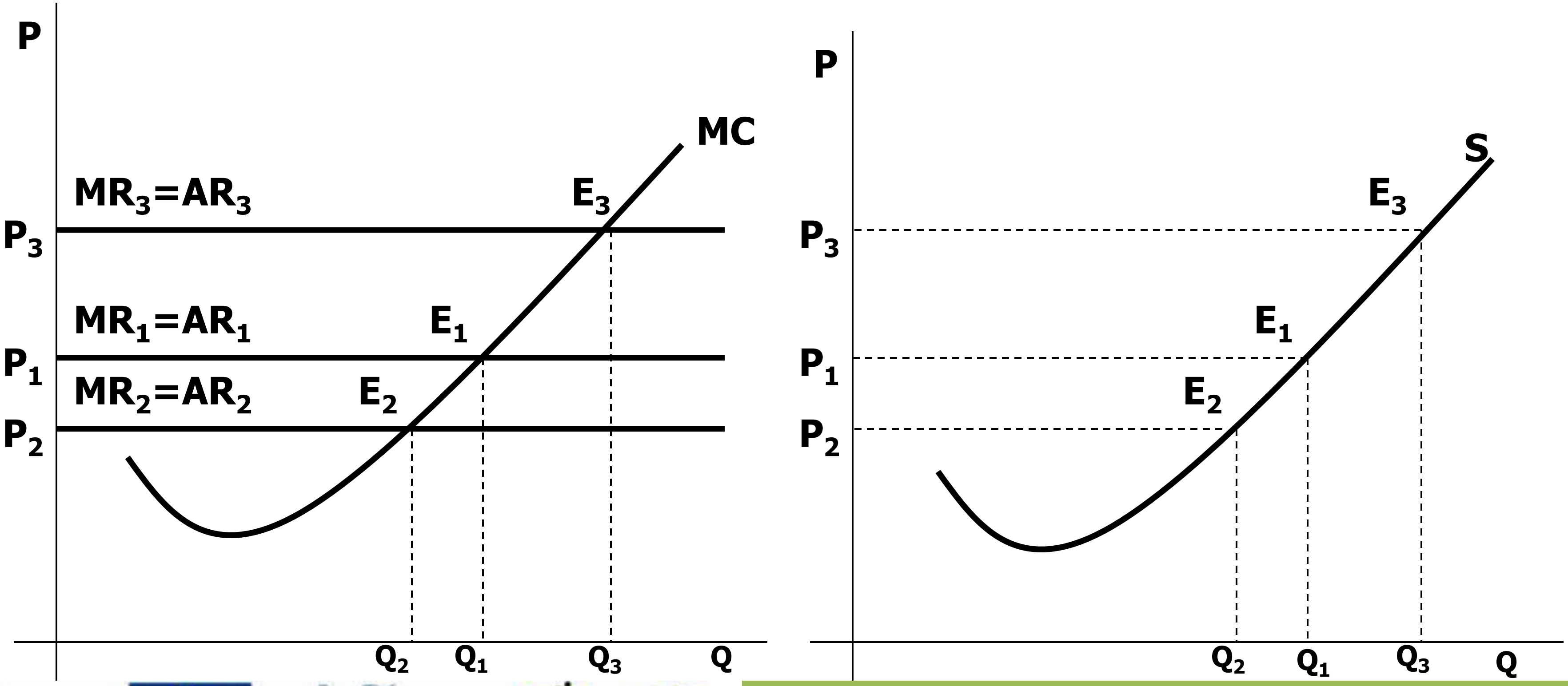
Maximum profit determination



Looking for the max. difference between TR and TC...

→ MR = MC

Supply curve derivation



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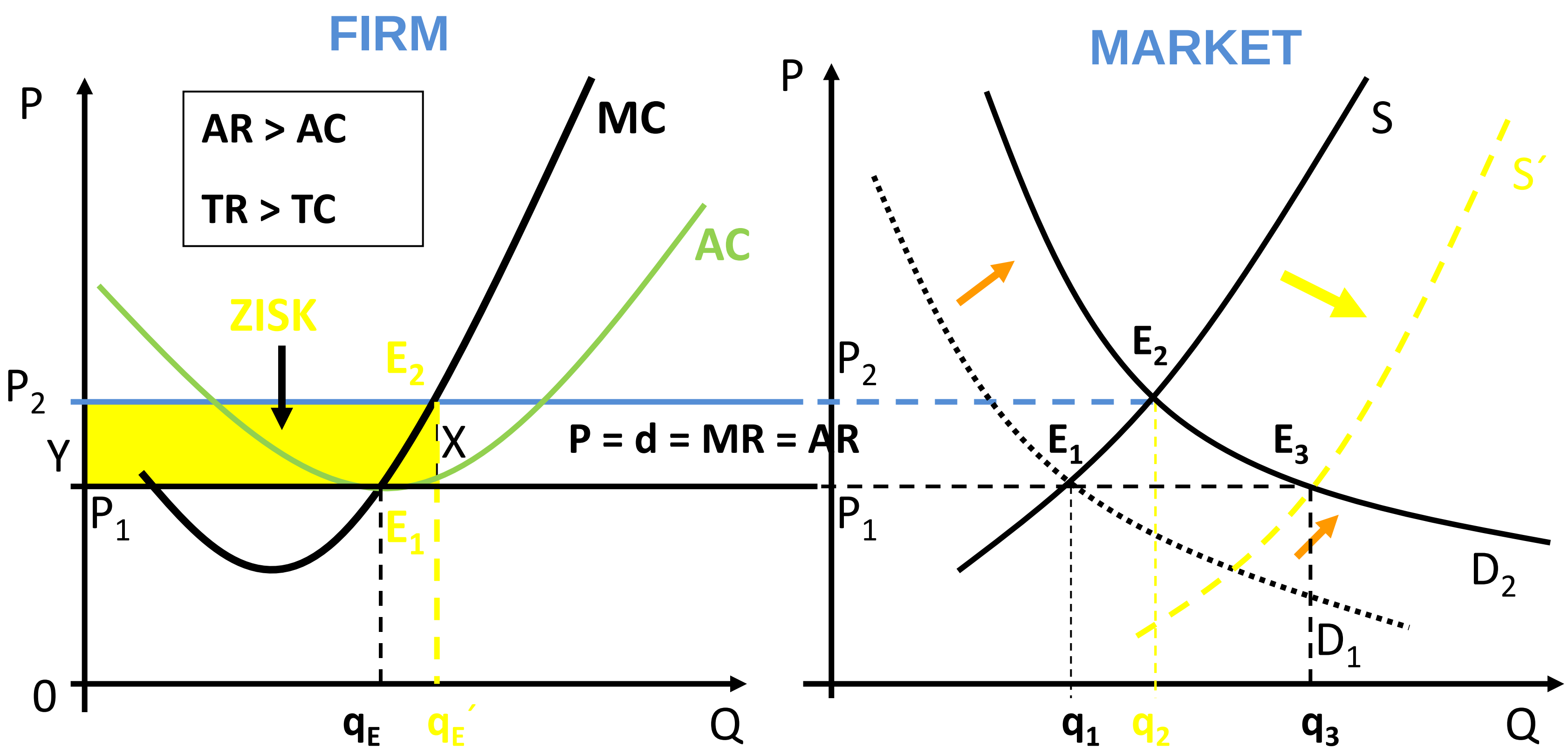
Firm in PC market reaching the profit



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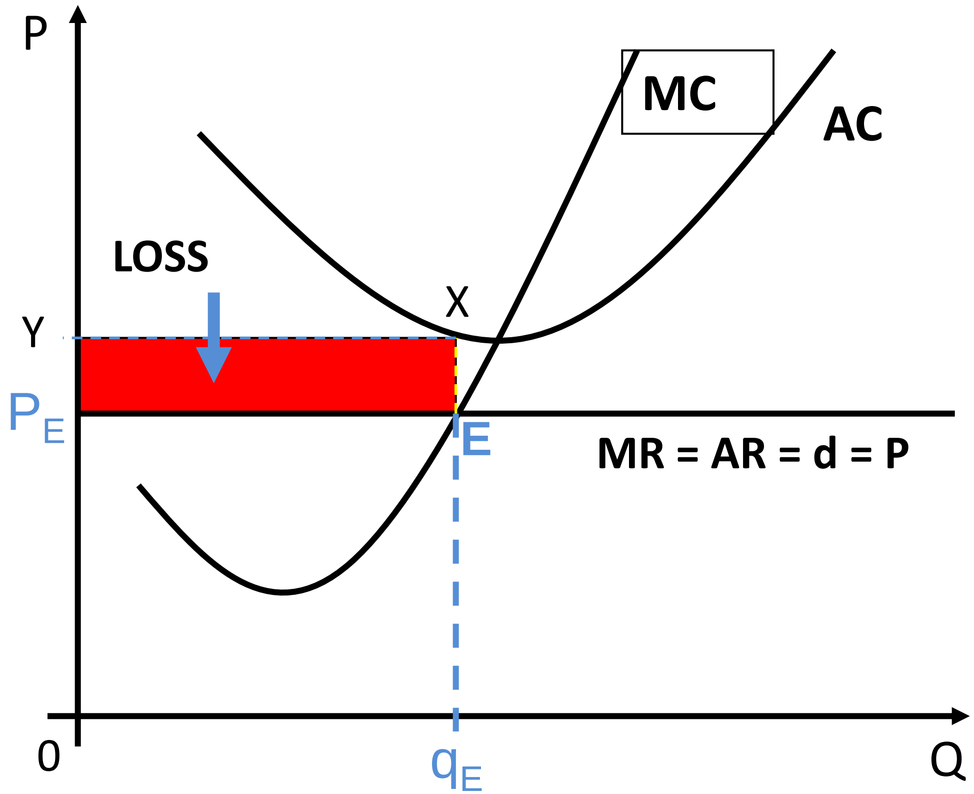
Firm in PC market reaching the loss

AC > AR

TC > TR

In the long term: firm has to pay the costs: P = AC.

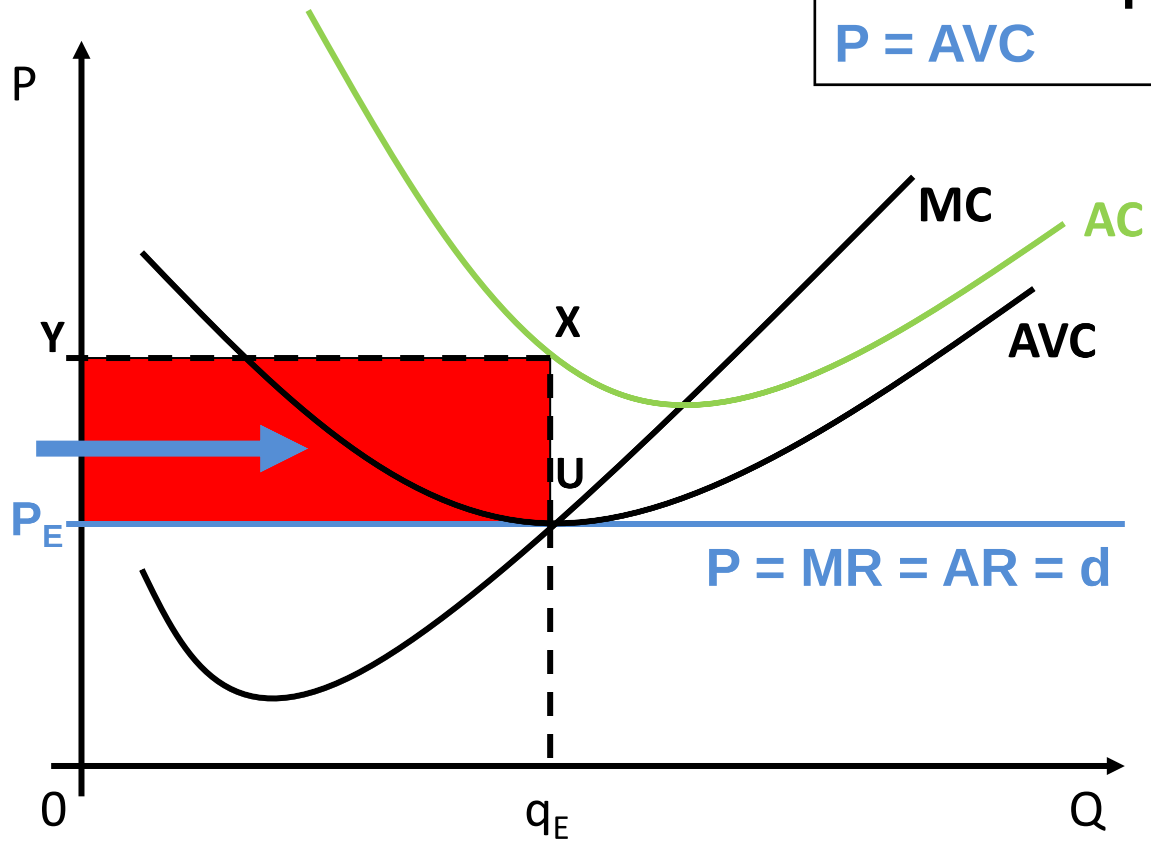


In the short term: loss discourages producers established in the industry (AVC criterion), market supply reduces (shift S top left), in the long term with zero economic profit

Shut down point (point U)

Shut down point:
P = AVC

LOSS = FC



Firm continues in production if P > AVC, and expects price increase on the market.

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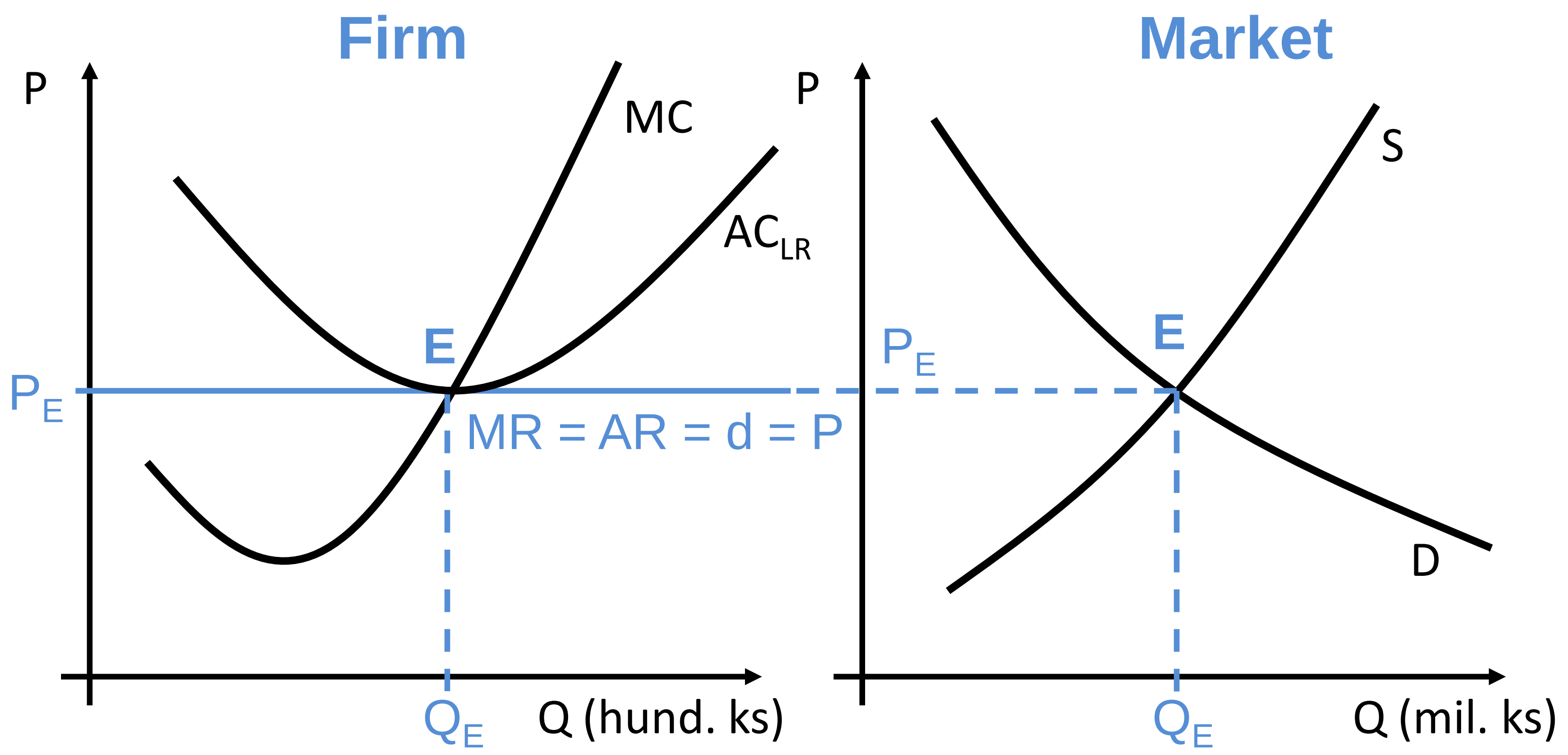
Equilibrium in PC in the long term



Equilibrium in PC in the long term

- In the long term: $P_E = d = MR = AR$,
- point E: „breakeven point" = revenues and costs are the same
- Optimum condition in the long run:

  $MC = MR = AC = AR$ or $P = MC = AC$

- There is zero economical profit in the long run $AR = AC$, $TR = TC$.

1.3 Effect of changes in the cost and other factors on supply

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Price change causes a change of the offered quantity - shift the curve supply.

The supply curve shift can be affected by many factors.

Supply primarily affect changes in costs:

- costs increase causes a decrease in supply - shifting the supply curve to the left
- costs reduction on the contrary causes an increase in supply - shifting to the right.

Changes in costs are caused by:

- Technical progress,
- Input prices.

The supply is also affected by changes in prices of other goods and other factors.

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1.4 Supply elasticity

Price elasticity of supply

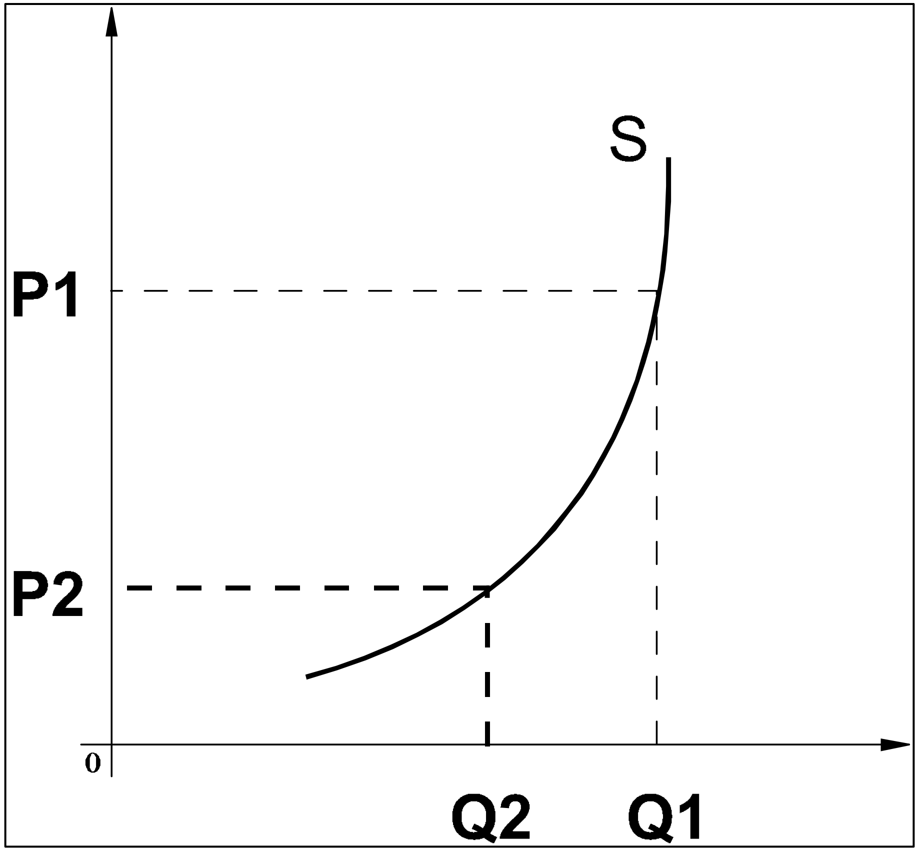
Calculation of the price elasticity of supply is analogous to the elasticity of demand:

Supply elasticity = % change in supplied quantity / % change in price

The coefficient of price elasticity of supply is:

ES = Q2 - Q1 / (Q1 + Q2) 2: P2 - P1 / (P1 + P2): 2

Supply elasticity



$$E_S = \frac{Q2 - Q1}{(Q2 + Q1) : 2} : \frac{P2 - P1}{(P2 + P1) : 2}$$

Q1 – supplied quantity before the price change

Q2 - supplied quantity after the price change

P1 – price before the change

P2 – price after the change

Supply:

- Elastic,
- Nonelastic
- Unitary elastic,
- Perfectly elastic,
- Perfectly inelastic.

The main factors affecting the price elasticity of supply:

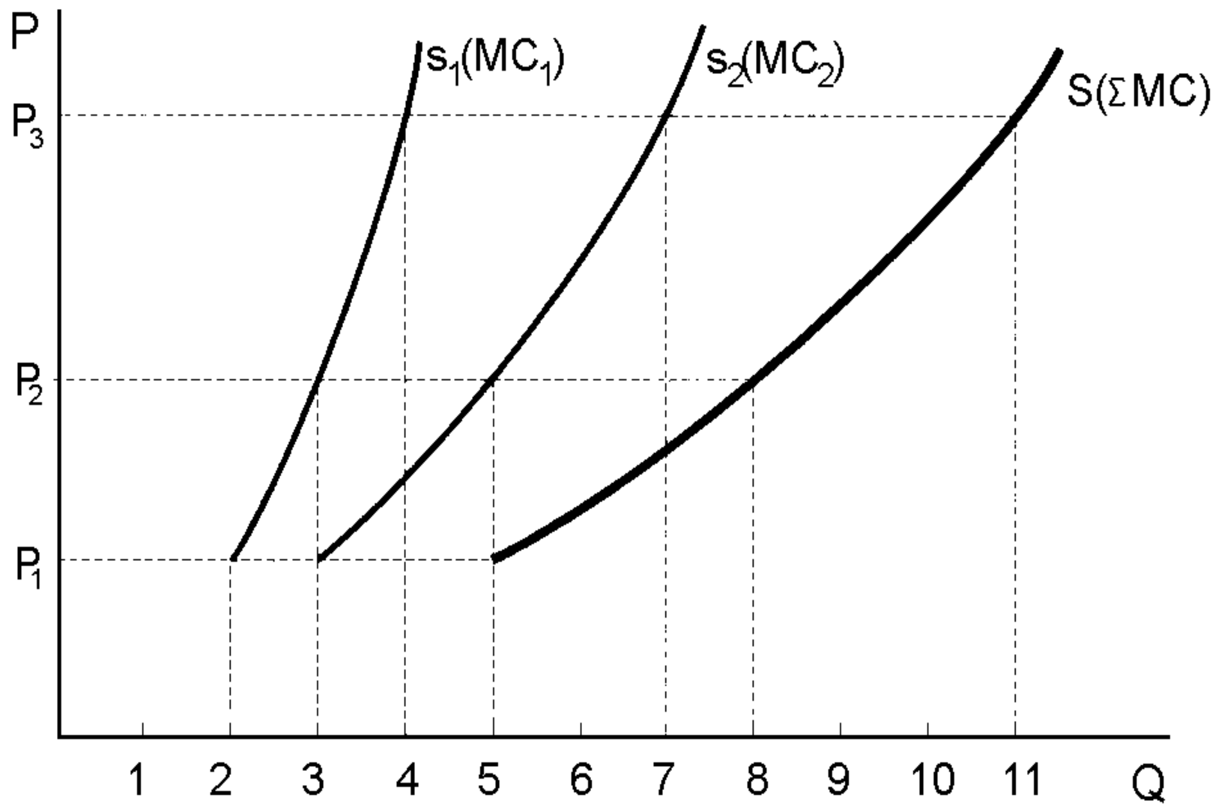
- Possibilities and costs of storage,
- Character of technology and production process,
- Time horizon.

1.5 Market supply

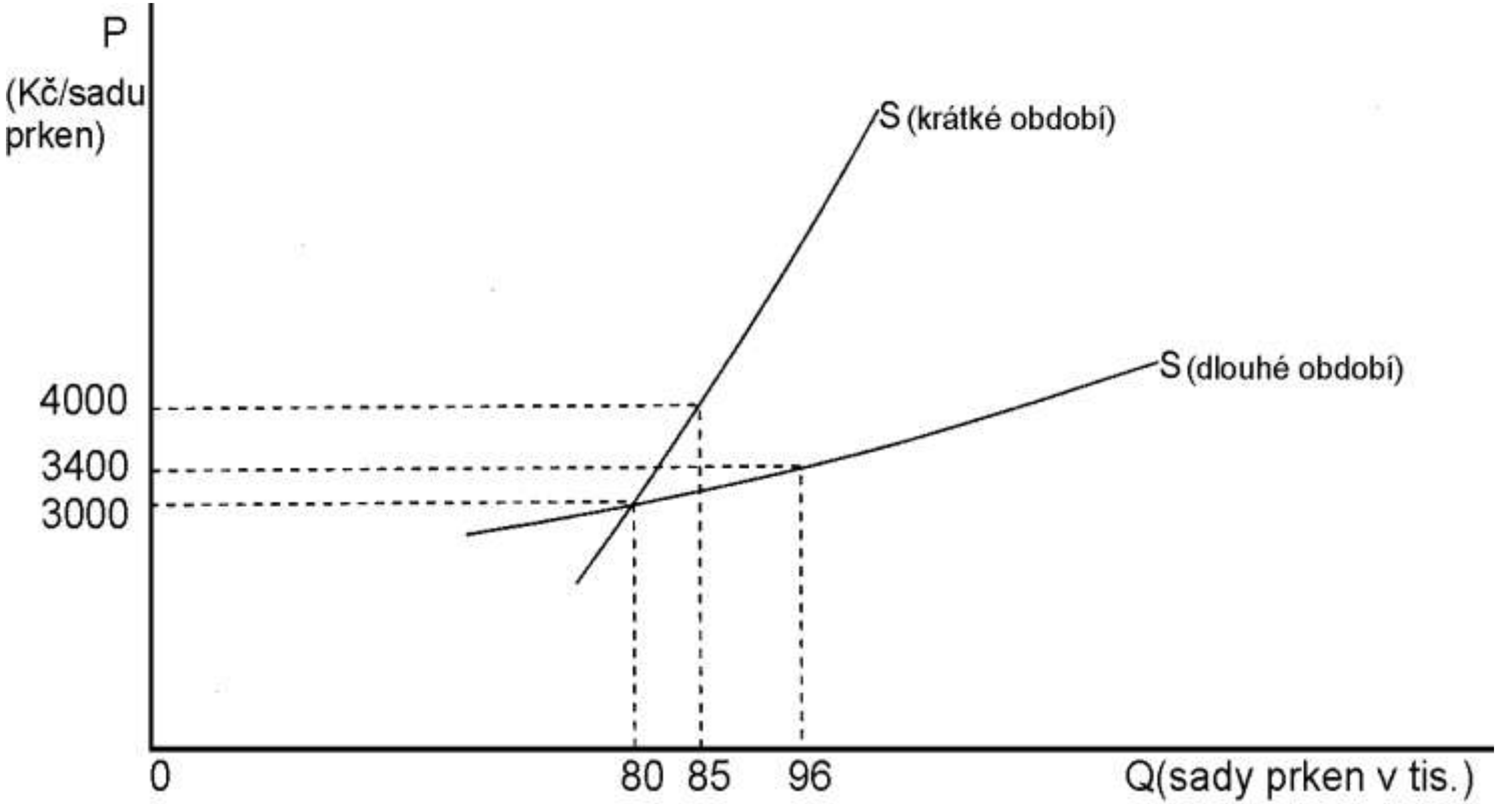
The market supply is the sum of volumes of certain goods that manufactures are willing to offer at different levels of prices.

Graphically we can get the market supply curve as horizontal sum individual supply curves.

Market supply in the short run



Market supply in the long run



2. PERFECTLY COMPETITIVE MARKET EQUILIBRIUM

2.1 Market equilibrium

Market equilibrium occurs when the offered amount equal to demanded volume.

This volume is called the equilibrium quantity. Price which induces from the equality is called the equilibrium price.

Optimum of a consumer - **P = MU**

Optimum (balance) of a company **P = MC**

2.2 Perfect competition market efficiency

Efficient allocation of factors of production becomes when there is no possibility to increase the production of one good without reducing the production of other goods.

At the same time no economic entity can not improve its situation without worsens the situation of others.

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If marginal utility of a good is higher than marginal cost, it means that this product is produced (and consumed) a little. Its marginal utility is higher than the cost required to acquire it. Efficiency is increased by transferring a part of production factors to produce this farm.

- If MU = P> MC, companies are not in equilibrium,
- If MU> P = MC, consumers are not in equilibrium.

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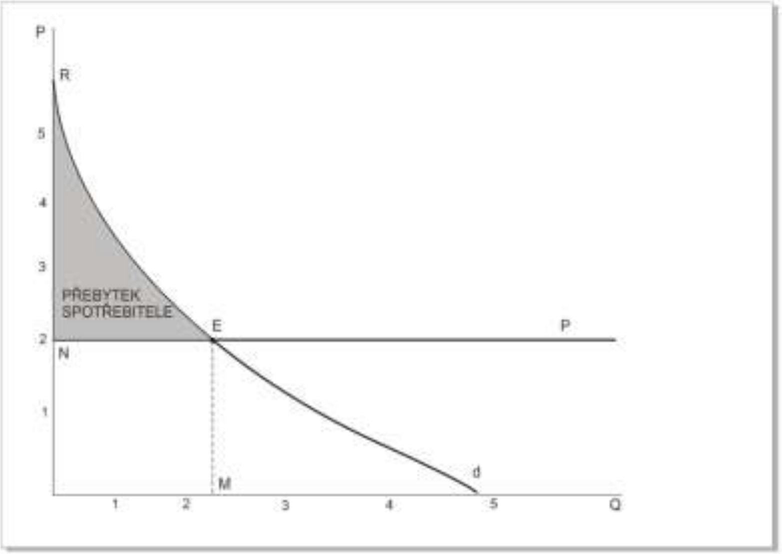
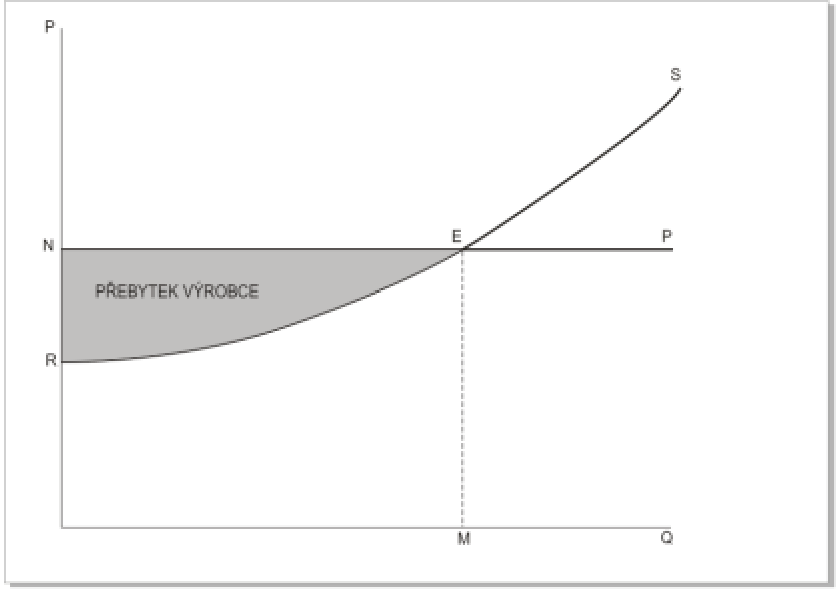
Consumer surplus



Is the difference between total utility and market price of the product.

Producer surplus



- Is the tifference between the price and production costs.

Questions?

Thank you for your attention

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