9. DEMAND FOR LABOUR UPON PERFECT COMPETITION LABOUR MARKET

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- demand for labour – perfect competition labour market + imperfect competition output market
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Input market features

- output market: supply side=firms, demand side=households
- input market: supply side=households, demand side=firms
- demand for inputs = demand, derived from the demand for output pfoduced with the specific inputs

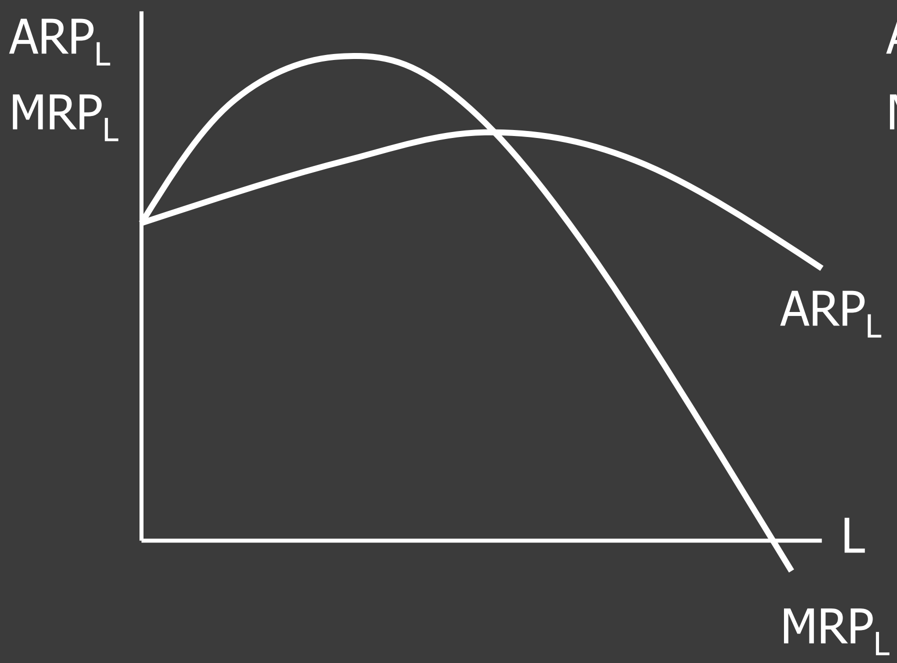
Revenue functions of input market

- MRP = Marginal Revenue Product = revenue of the additional unit of the specific input, or...
- MRP = how the firm´s total revenues change if the firm recruits the additional unit of input
- $MRP_K = \delta TR/\delta K = (\delta TR/\delta Q).(\delta Q/\delta K) = MR \, . \, MP_K$
- $MRP_L = \delta TR/\delta L = (\delta TR/\delta Q).(\delta Q/\delta L) = MR \, . \, MP_L$
- ARP = Average Revenue Product = revenue to the unit of the specific input
- $ARP_K = TR/K = (P.Q)/K = P.(Q/K) = P \, . \, AP_K$
- $ARP_L = TR/L = (P.Q)/L = P.(Q/L) = P \, . \, AP_L$

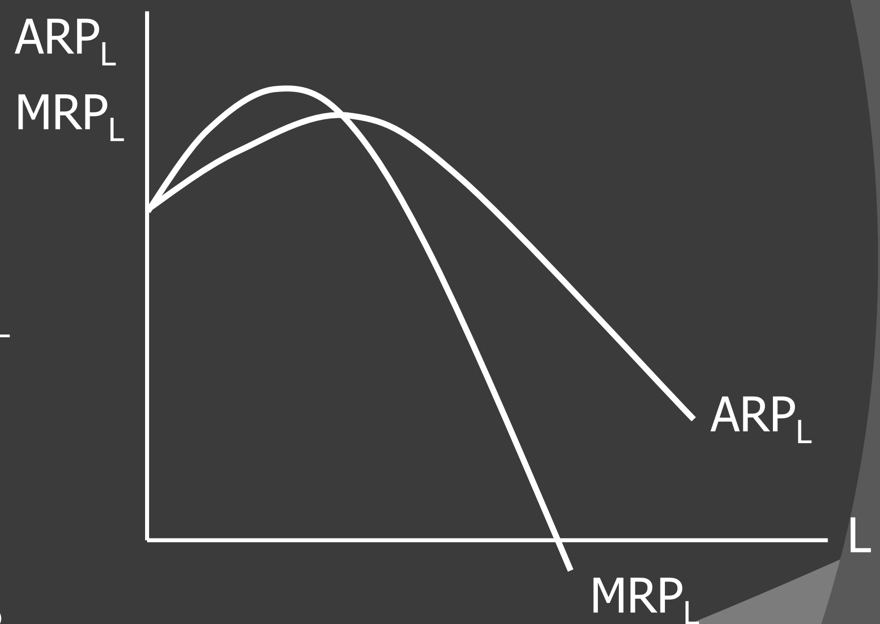
Revenue functions of input market

MRP and ARP functions depend on the type of competition of output market

Generally – MRP and ARP functions „copy“ the development of MP and AP functions



Perfect competition output market: MR=AR=P=const.



Imperfect competition output market: MR, AR and P decrease with increasing output → MRP_L and ARP_L functions steeper

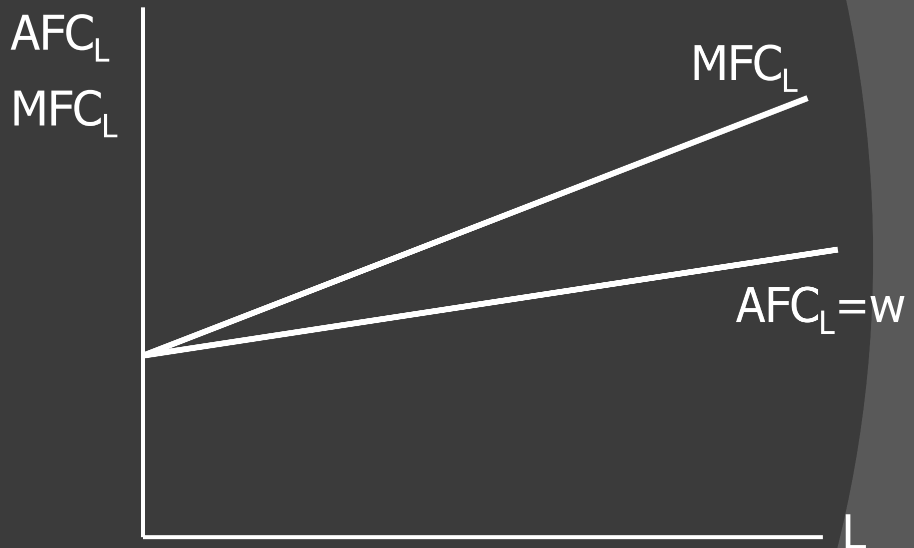
Cost functions of input market

- MFC = Marginal Factor Costs = costs on additional unit of input, or...
- ...how the total costs change if the firm recruits an additional unit of input
- $MFC_K = \delta TC/\delta K$ $MFC_L = \delta TC/\delta L$
- AFC = Average Factor Costs = costs per unit of input
- $AFC_K = TC/K = r.K/K = r$
- $AFC_L = TC/L = w.L/L = w$

Cost functions of input market

MFC and AFC development depends on the type of input market

Perfect competition labour market



Imperfect competition labour market

Optimal volume of inputs

- ...is that which maximizes the firm´s economic profit
- $TR(K,L) - TC(K,L) = \pi(K,L)$ max.

Necessary condition of profit maximizing:

- $\delta\pi/\delta K = \delta TR/\delta K - \delta TC/\delta K = 0 \rightarrow$
  $\delta TR/\delta K = \delta TC/\delta K \rightarrow MRP_K = MFC_K$
- $\delta\pi/\delta L = \delta TR/\delta L - \delta TC/\delta L = 0 \rightarrow$
  $\delta TR/\delta L = \delta TC/\delta L \rightarrow MRP_L = MFC_L$

Perfect competition labour market demand

PERFECT COMPETITION LM:

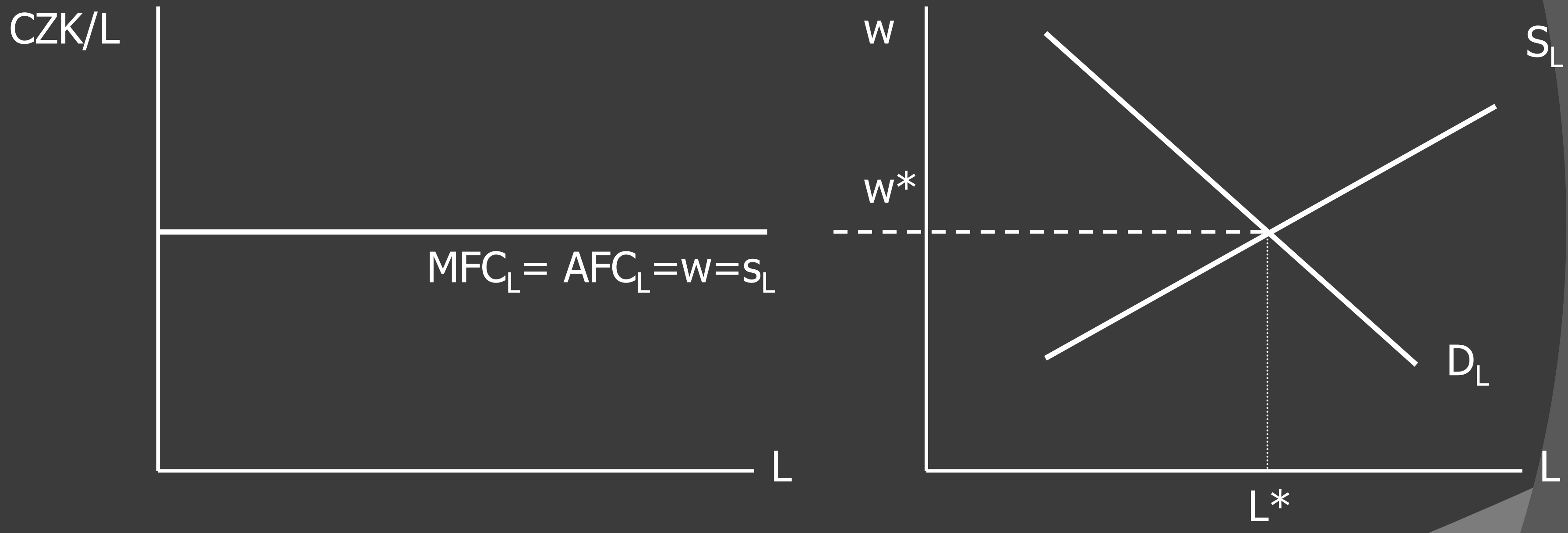
- many firms demanding the labour force
- wage rate giwen by the labour market (intersection of demand and supply)
- individual labour supply (willingness to work for the specific firm) is horizontal at the level of the market equilibrium wage rate
- $MFC_L = AFC_L = w = s_L$

Demand for labour

- Labour market: perfect competition
- Output market: perfect competition

Perfect competition labour market

$$MFC_L = w = AFC_L = s_L$$



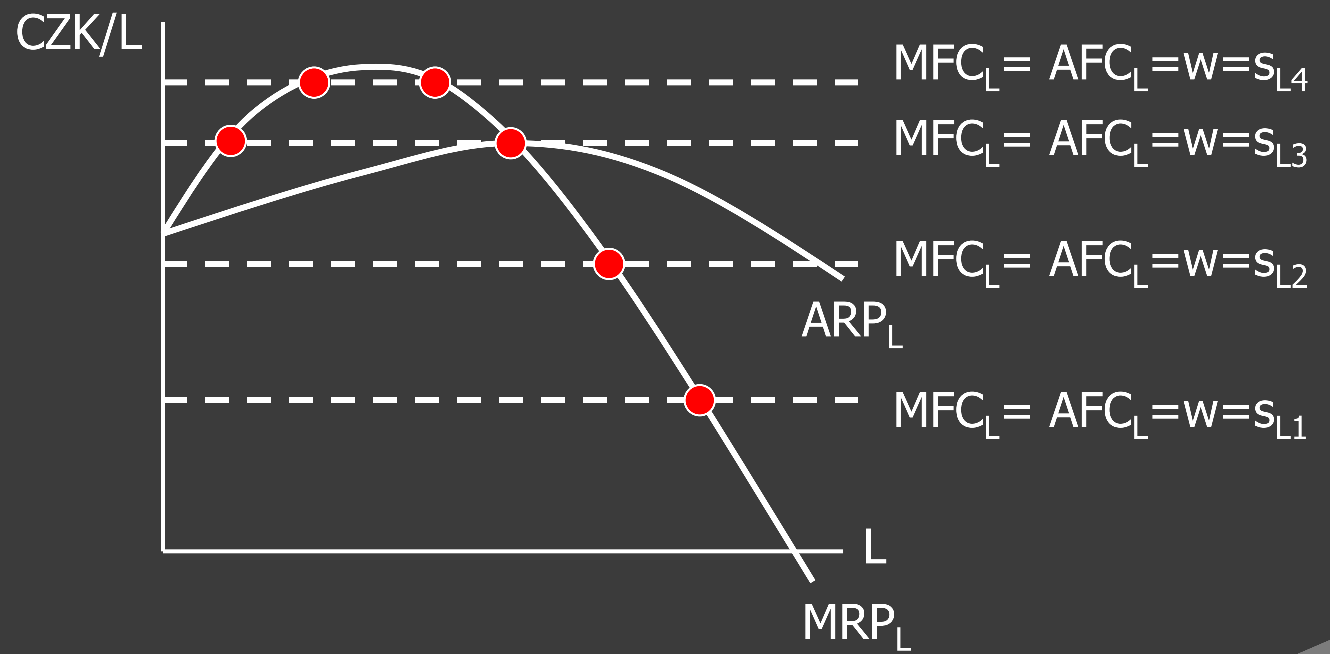
Firm

Labour market

Perfect competition demand for labour in short run

modified golden rule of profit maximizing:

$MRP_L = MFC_L$ or $MR.MP_L = MFC_L$ or $MRP_L = w$



red spots: golden rule fulfilled, but only on negative sloped part of MRP_L firm maximizes its profit (otherwise max. loss)

but not all of the red spots lie on the demand for labour

Perfect competition demand for labour in short run

Firm must cover its VC in short run:

$$TR \geq VC$$

$$TR = ARP_L.L$$

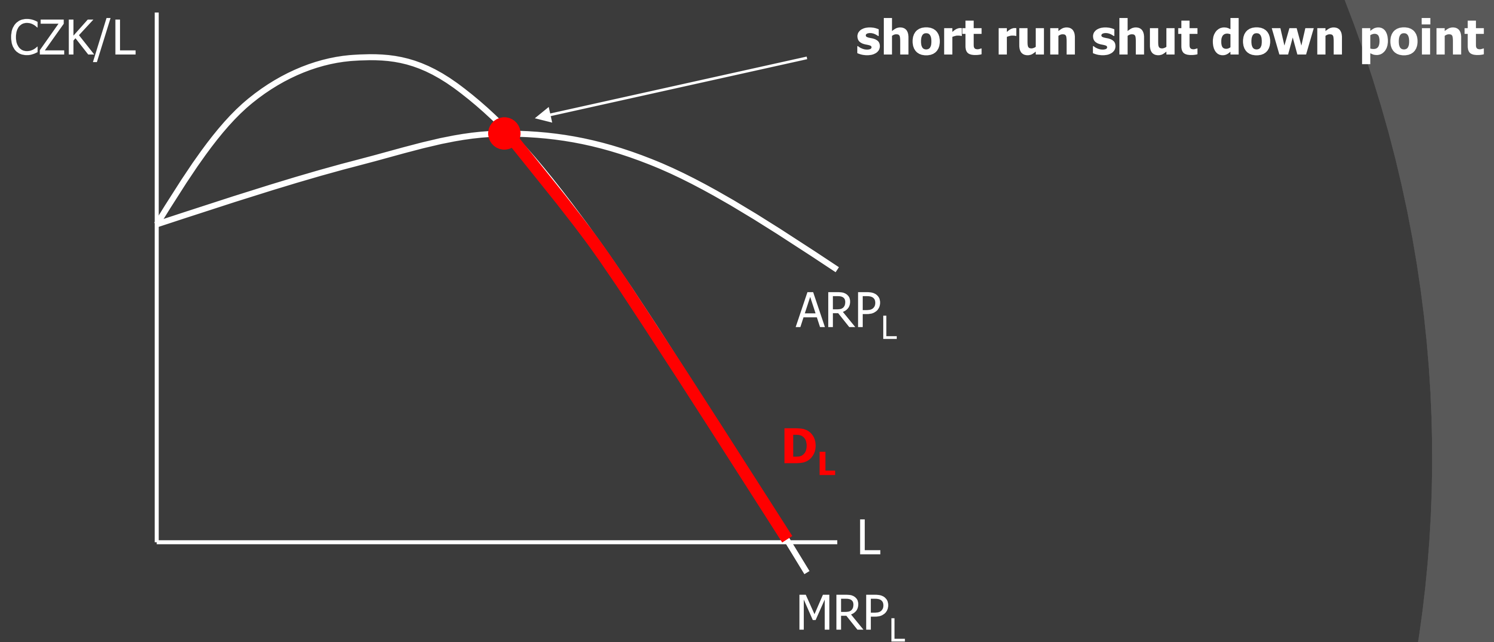
$$VC = w.L$$

$$ARP_L.L \geq w.L$$

$$ARP_L \geq w$$

Firm´s demand for labour: negative sloped part of MRP_L limitted with the maximum of ARP_L

Perfect competition demand for labour in short run



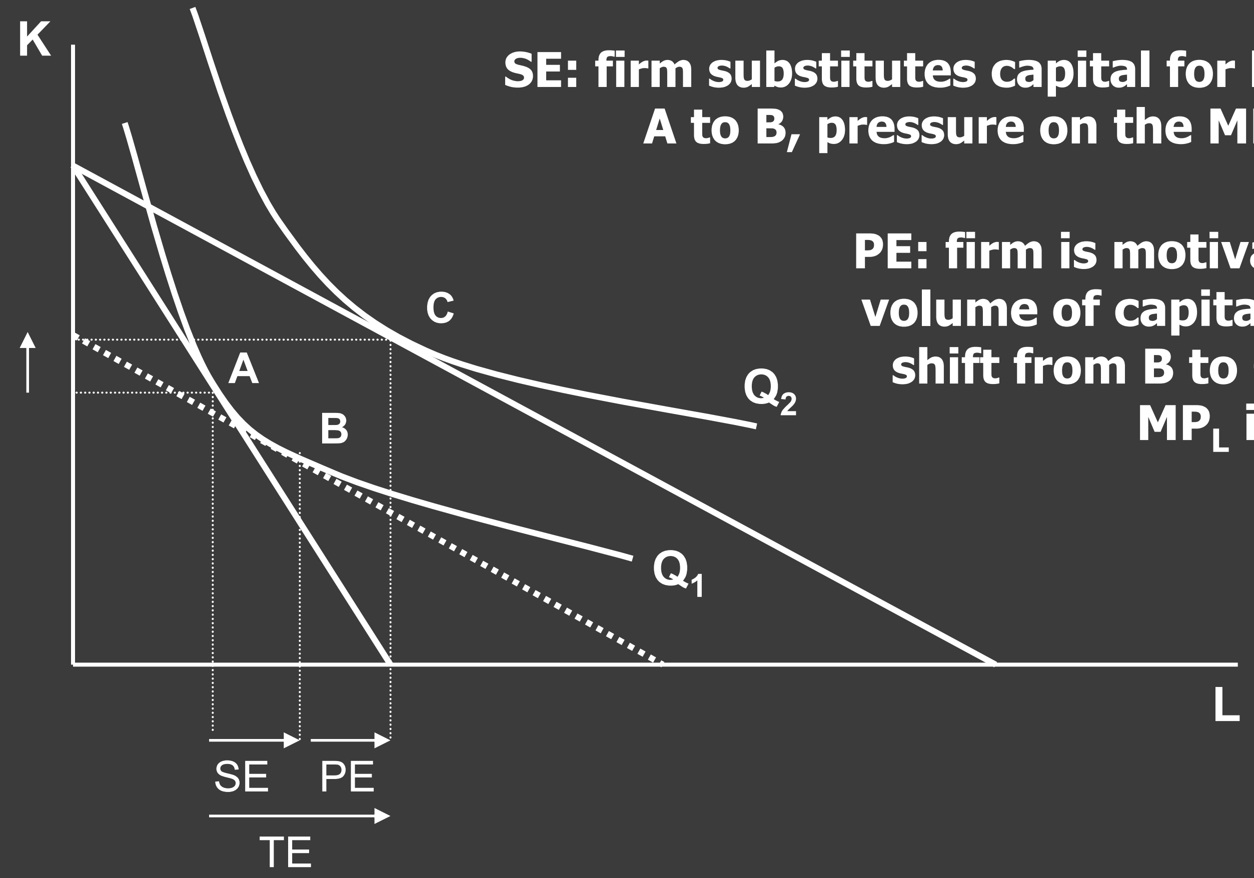
If the wage rate increases above the maximum of ARP$_L$, firm would shut down, because it would not cover its VC

Perfect competition demand for labour in long run

- in LR the firm is able to change the volume of labour and capital
- if „w“ changes, firm changes either the volume labour either the volume of capital
- change of volum of capital influences the MP_L function and MRP_L either
- change of „w“ → substitution effect, production effect, total effect

Perfect competition demand for labour in long run

w decreases

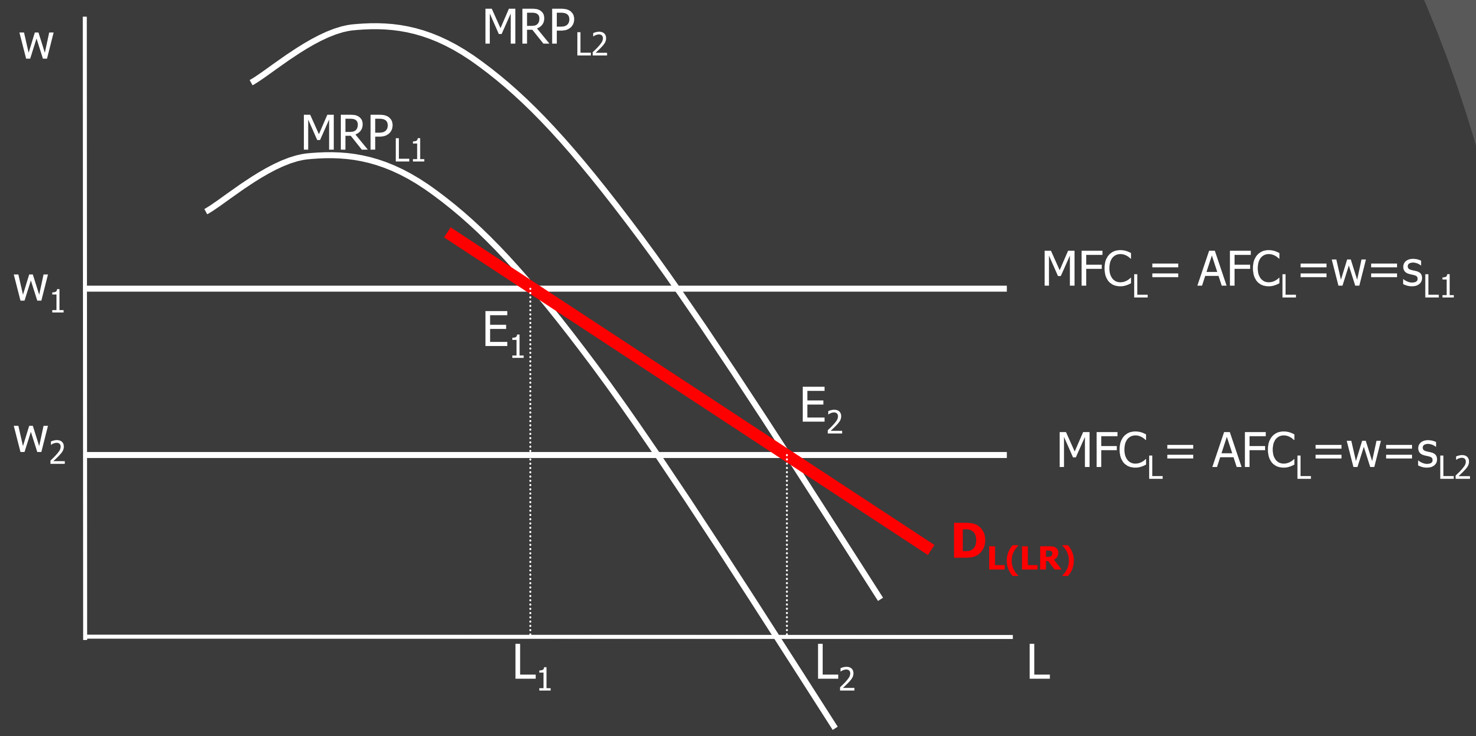


SE: firm substitutes capital for labour, shift from A to B, pressure on the MP_L decrease

PE: firm is motivated to increase the volume of capital and labour either, shift from B to C, pressure on the MP_L increase

TE: firm´s MP_L increases

Perfect competition demand for labour in long run

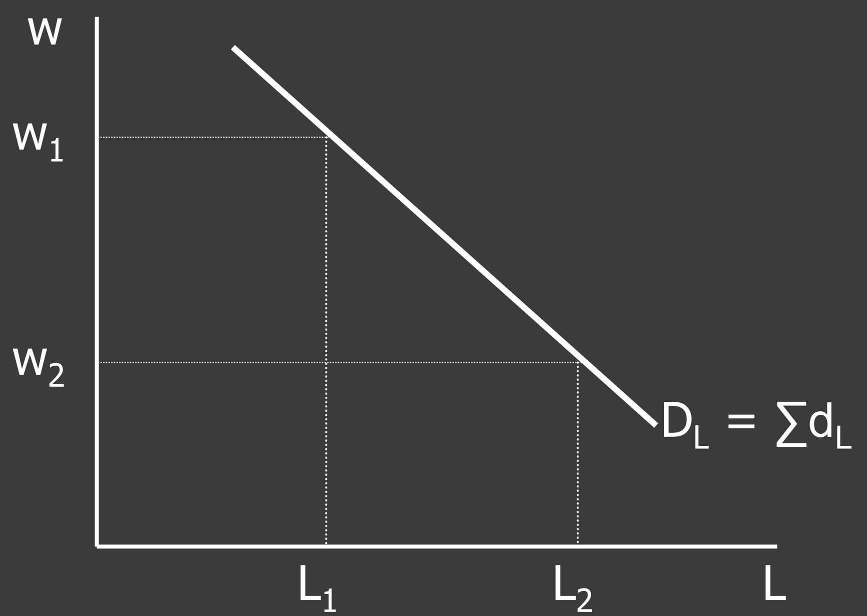


TE of w decrease: increase of MP_L and MRP_L and short run D_L

Set of equilibria upon different levels of „w“ (different levels of MRP_L) we acquire the long run demand for labour

Market demand for labour

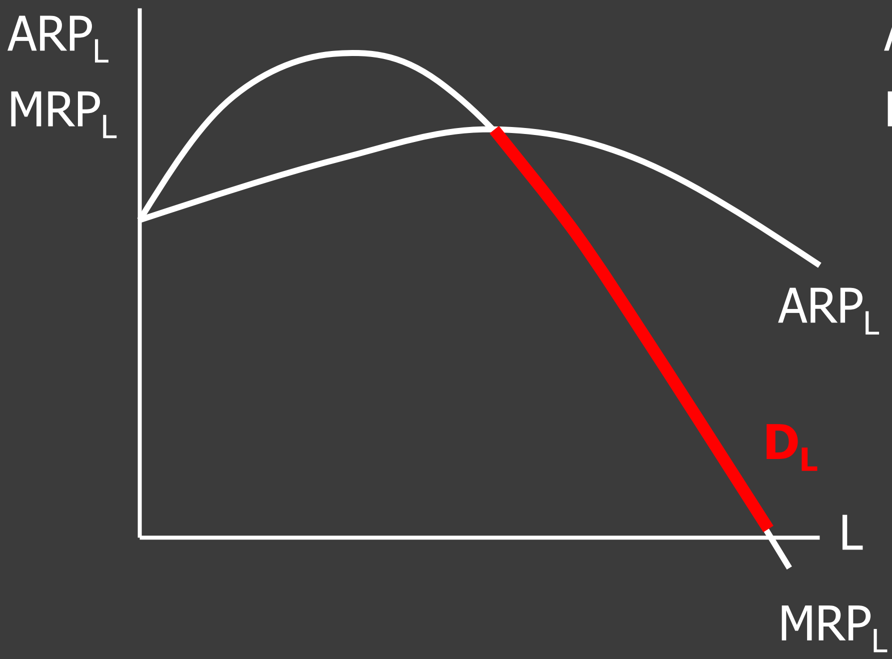
... a horizontal sum of individual demands for labour:



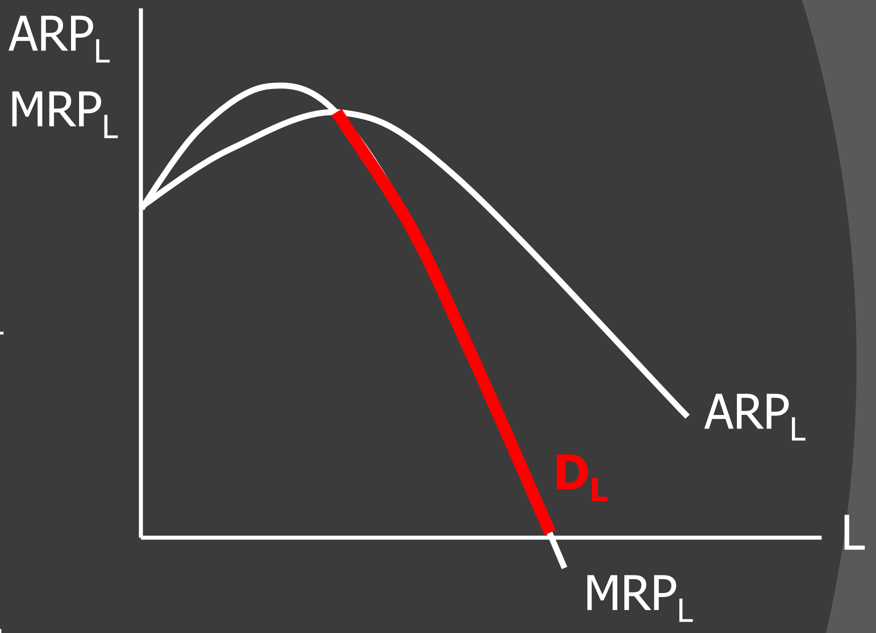
Demand for labour

- Labour market: perfect competition
- Output market: imperfect competition

Perfect competition demand for labour in short run



Firm on perfect competition output market



Firm on imperfect competition output market

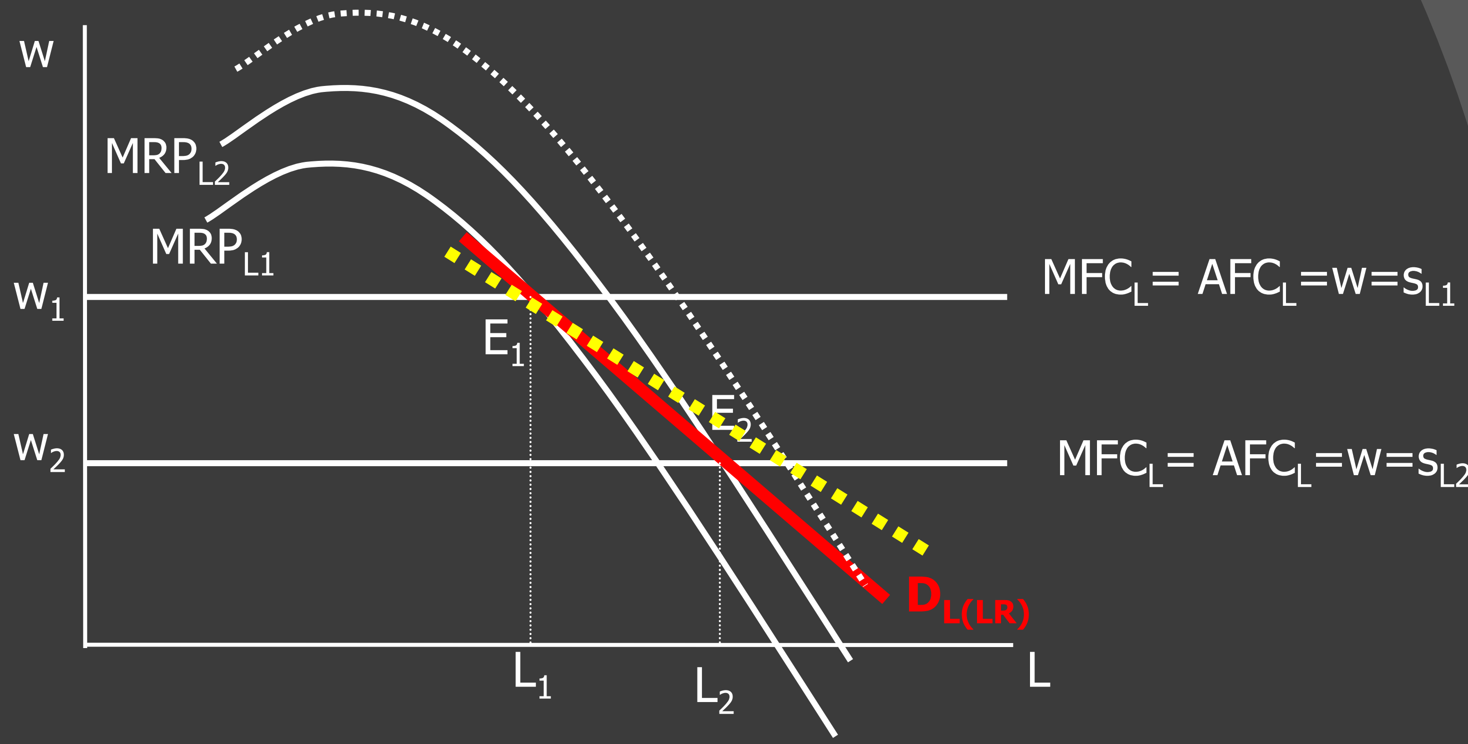
Perfect competition demand for labour in long run

- Besides SE and PE also „revenue effect“ (RE)
- Decrease of „w“ leads to the decrease of MC – the firm rearranges its equilibirum → lower MR
- if w decreases: SE → MRP_L ↓ (due to ↓MP_L)

  PE → MRP_L ↑ (due to ↑MP_L)

  RE → MRP_L ↓ (due to ↓MR)
- MRP_L shifts up but not as much as in the case of perfect competition firm on the output market

Perfect competition demand for labour in long run



Red line – LR demand for labour of firm (perfect+imperfect)

Yellow broken line – LR demand for labour of firm (perfect+perfect)

Minimal wage

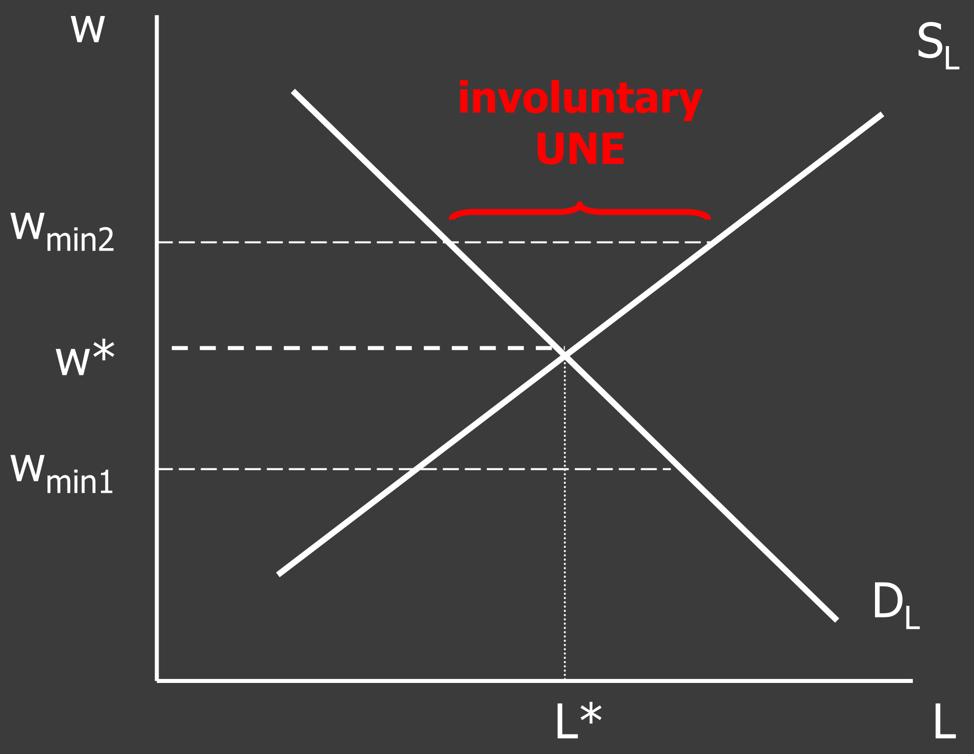
- = wage regulation of the labour market

Goals:

- to grant a minimal income for specific workers → instrument of social policy
- to rise the motivation to look for jobs
- to rise the employment

Impacts of minimal wage

Labour market



w_{min1} – minimal wage below the equilibrium wage – LM will not be affected

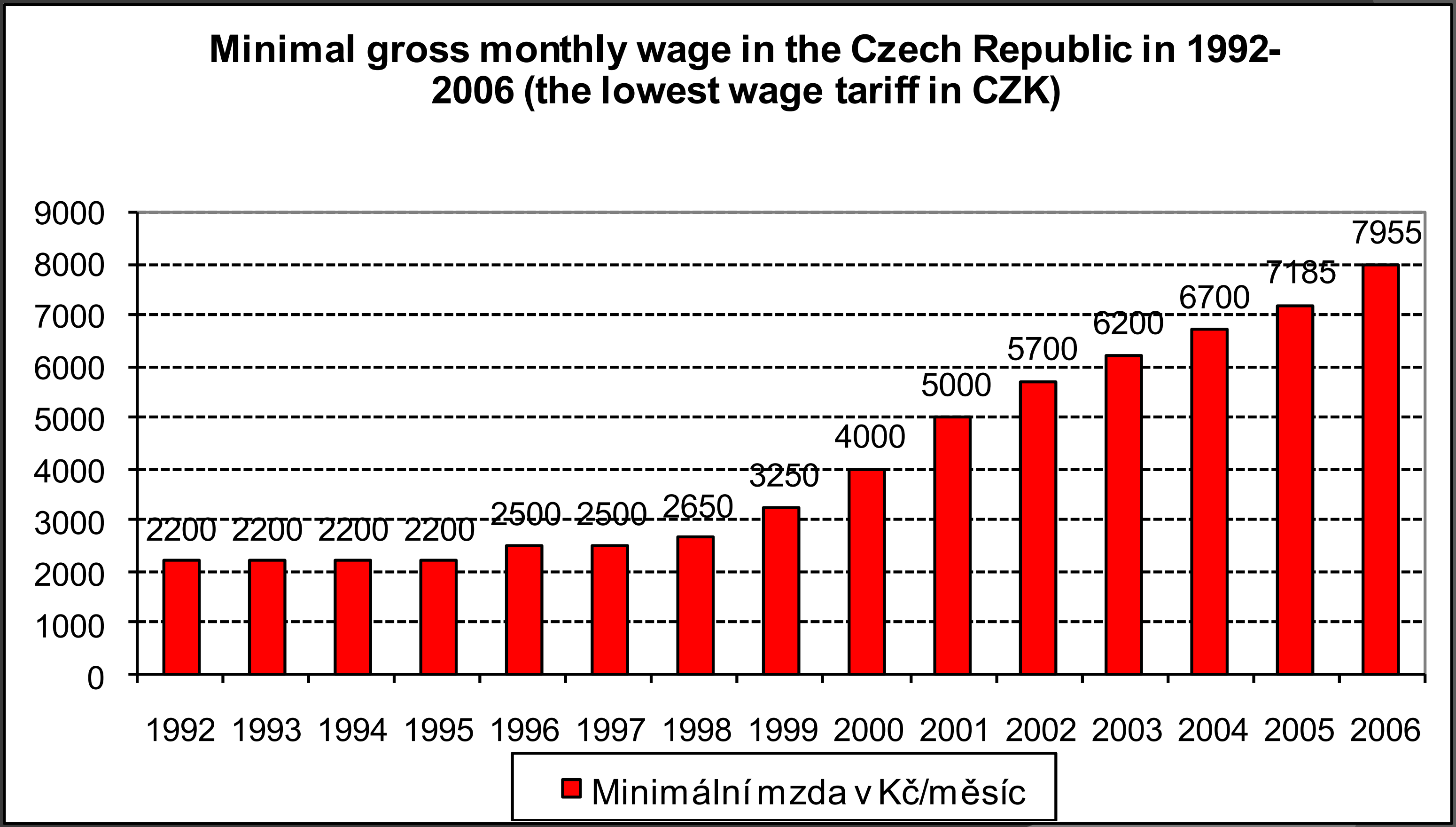
w_{min2} – minimal wage above the equilibrium wate – existence of unvoluntary unemployment

Impacts of minimal wage

- if minimal wage below the equilibrium, then no impact on the labour market (market clearing wage is higher)
- if minimal wage below the equilibrium, then it causes the unvoluntary unemployment

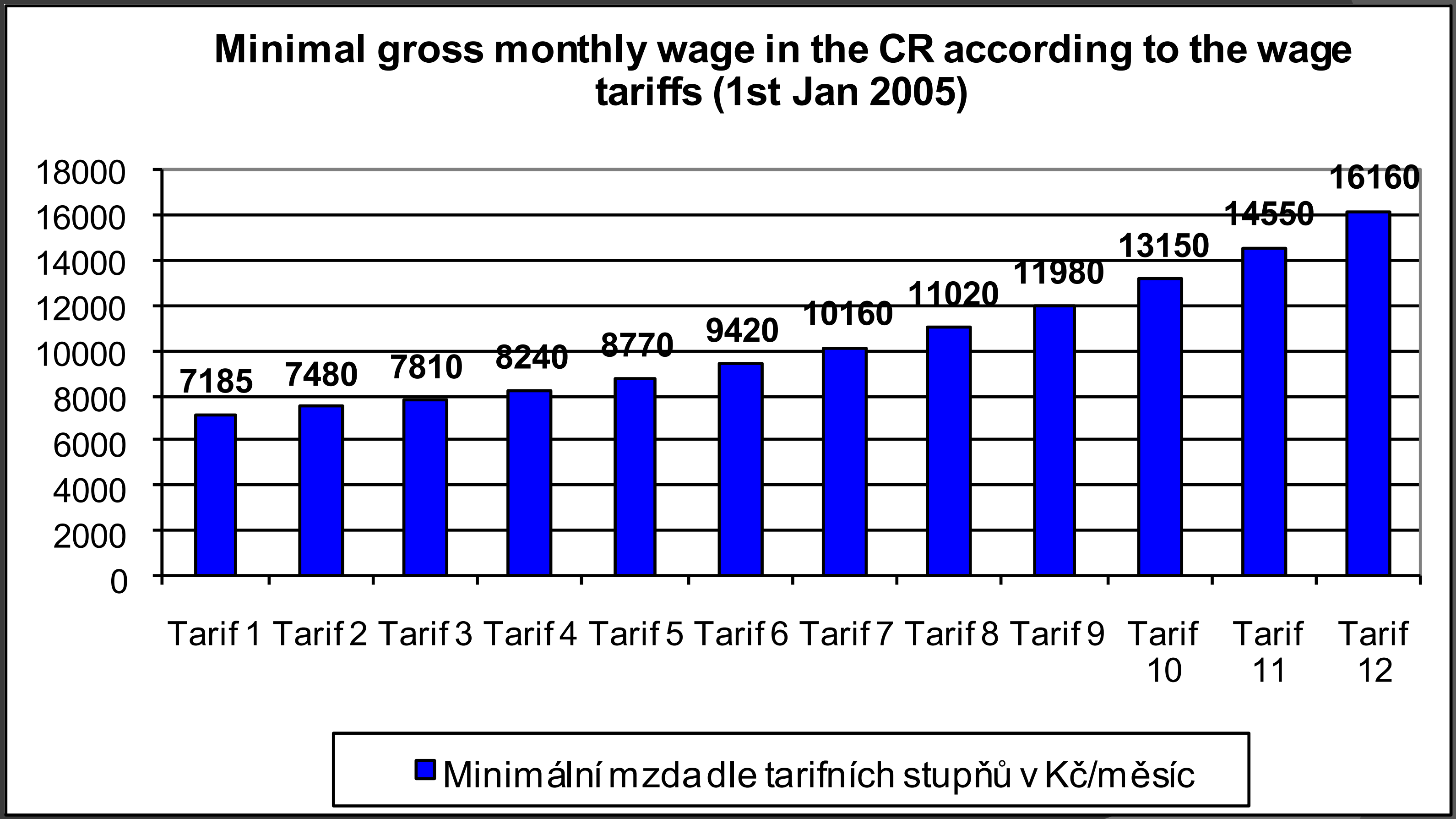
MINIMAL WAGE ON THE PERFECT COMPETITION LABOUR MARKET DOES NOT MAKE ANY SCENCE

Minimal wage in the CR



Source: http://www.finance.cz/home/hospodarstvi/prace/mzda/

Minimal wage in the CR



Source: http://www.mesec.cz/clanky/minimalni-mzda-roste-vzroste-nezamestnanost

Economic rent

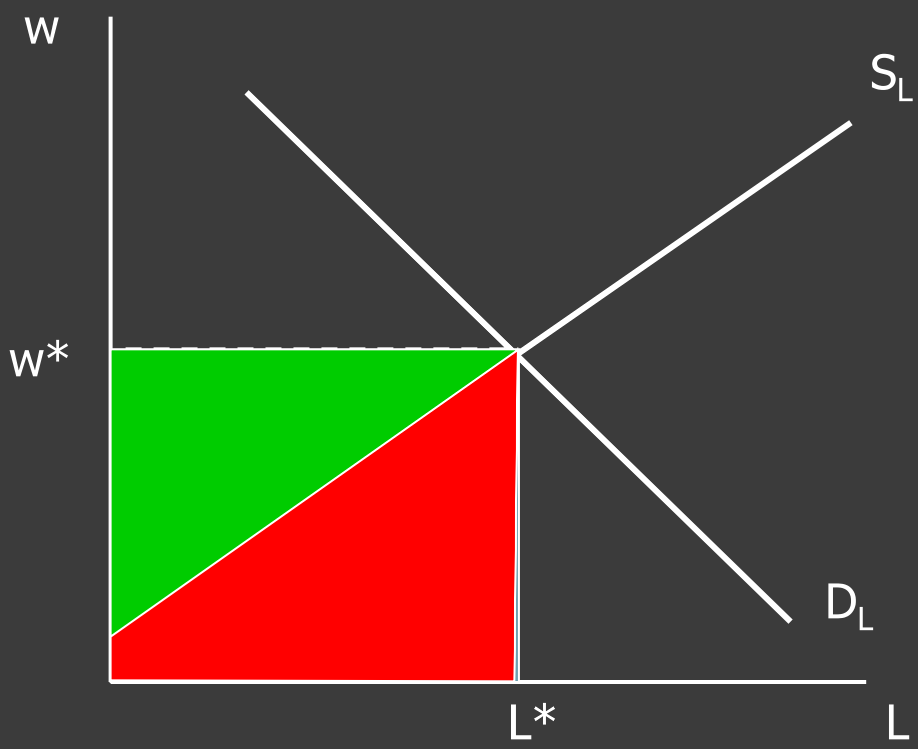
Economic rent = total revenue of input minus transfer wage

total revenue of input – sum of all really paid wages on the labour market

transfer wage – minimal level of wage that represents the willingnes of the labour force to work

Economic rent = difference between the really paid wages and minimal levels of wage, the labour force is willing to work

Economic rent on the labour market



The less elastic supply, the higher economic rent

sum of really paid wages in the market aquilibrium

transfer wage

economic rent