

10. Imperfect competition labour market, supply of the labour force



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Imperfect competition LM features

- limited number of firms demanding the labour force
- monopsony – only 1 firm demanding the LF
- oligopsony – a few firms demanding the LF
- monopsonistic competition – many firms demanding the LF
- firms are „price makers“ – ability to influence the wage rate
- individual LFS function – positive slope

Individual LFS function

wage rate – below the MFC_L function



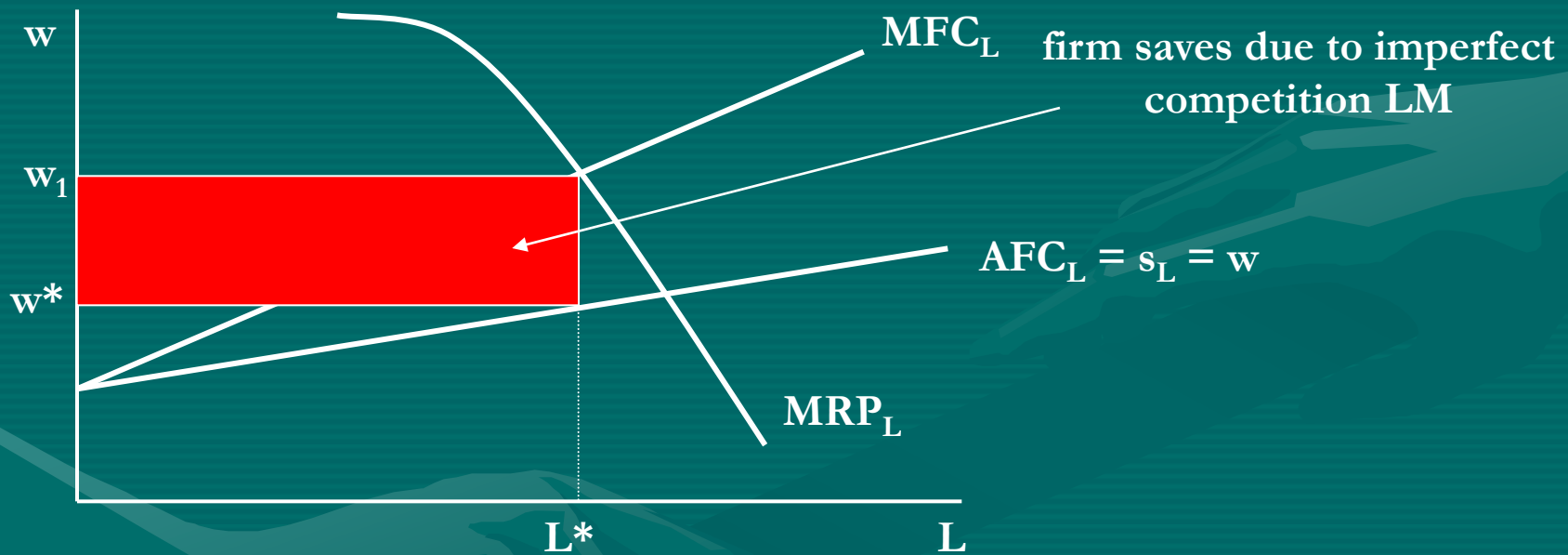
if $AFC_L = a + b.L$, pak $TFC_L = (a + b.L).L = a.L + b.L^2$, and $MFC_L = \delta TFC_L / \delta L = a + 2b.L$



MFC_L function increases twofold to the AFC_L

Optimal volume of LF in the SR

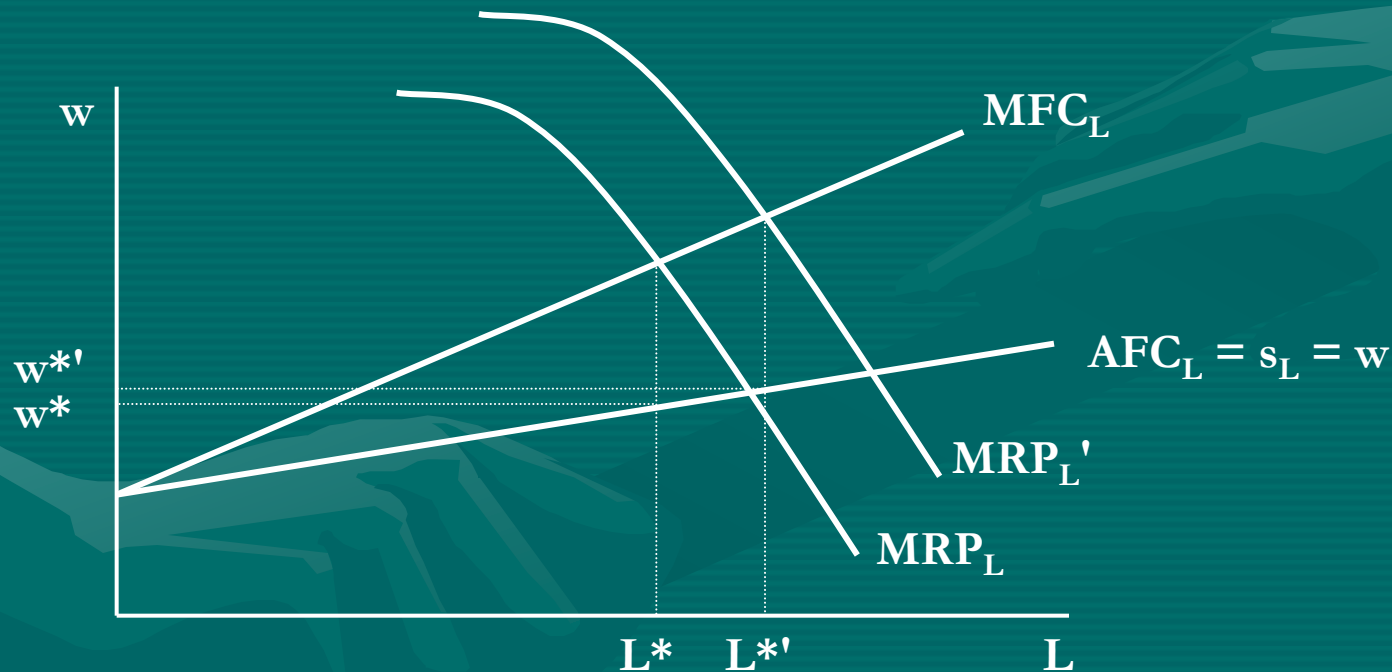
modified golden rule: $MRP_L = MFC_L$



Firm recruits L^* for wage rate w^* , although it would be willing to pay the wage rate w_1

Demand for labour function: \uparrow of MRP_L

... is not possible to derive: the MRP_L curve does not represent a direct relationship between L and w

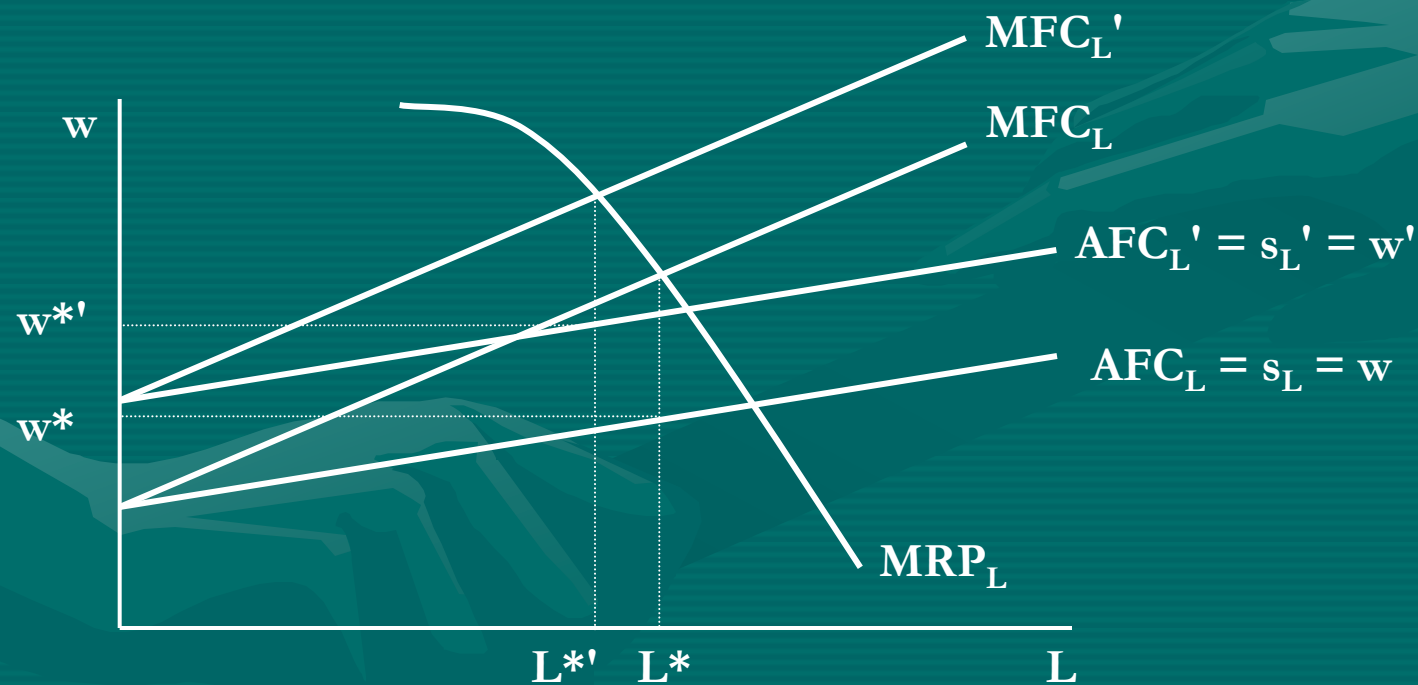


Increased demand on the output market induced the increase of MR and shift of MRP_L upwards – LFS demanded and wage rate increase

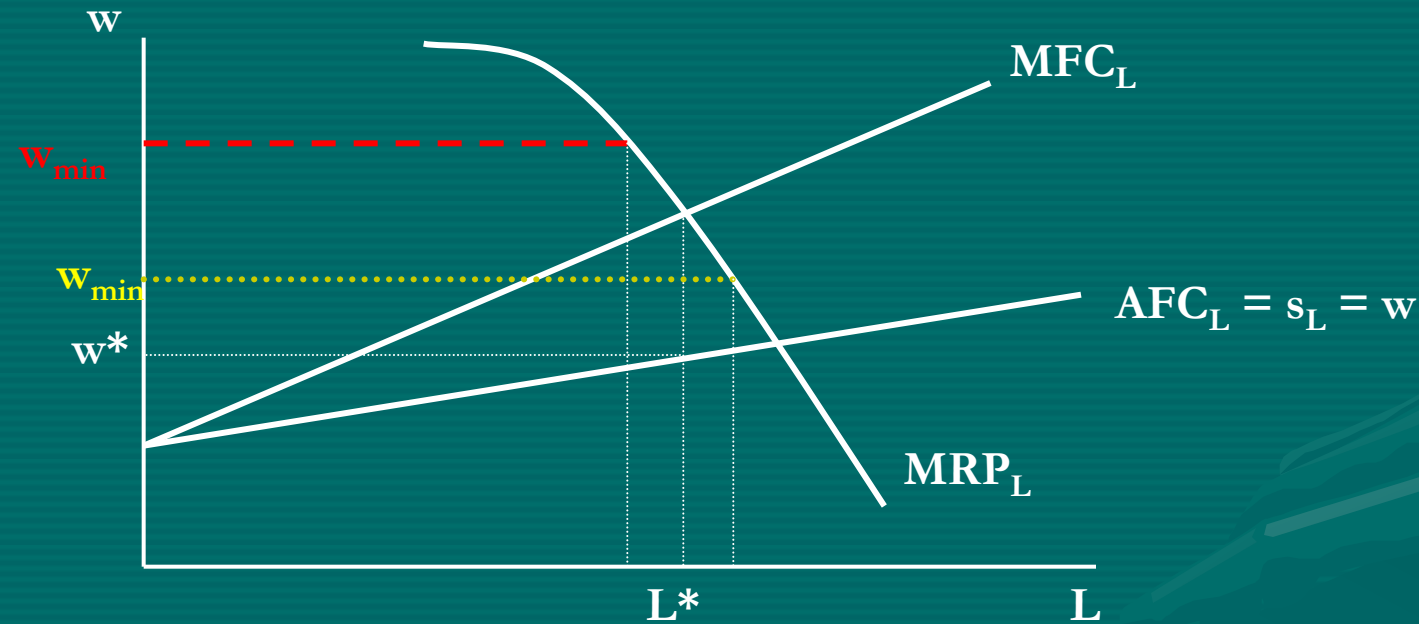
Demand for labour function: $\uparrow MFC_L, AFC_L$

The increase of taxation on labour leads to the shift of AFC_L and MFC_L upwards:

➔ firm's equilibria do not lie on the MRP_L function



Minimal wage impacts



w_{min} = as the new function of MFC_L (the firm must recruit additional unit of LFS for a constant wage)

the firm still endeavours the maximal economic profit: $MFC_L = MRP_L \rightarrow$ when the minimal wage increases the employment (in this case)

w_{min} minimal wage too high – employment decreases in comparison to the case of no wage regulation

Optimal volume of LFS in the LR

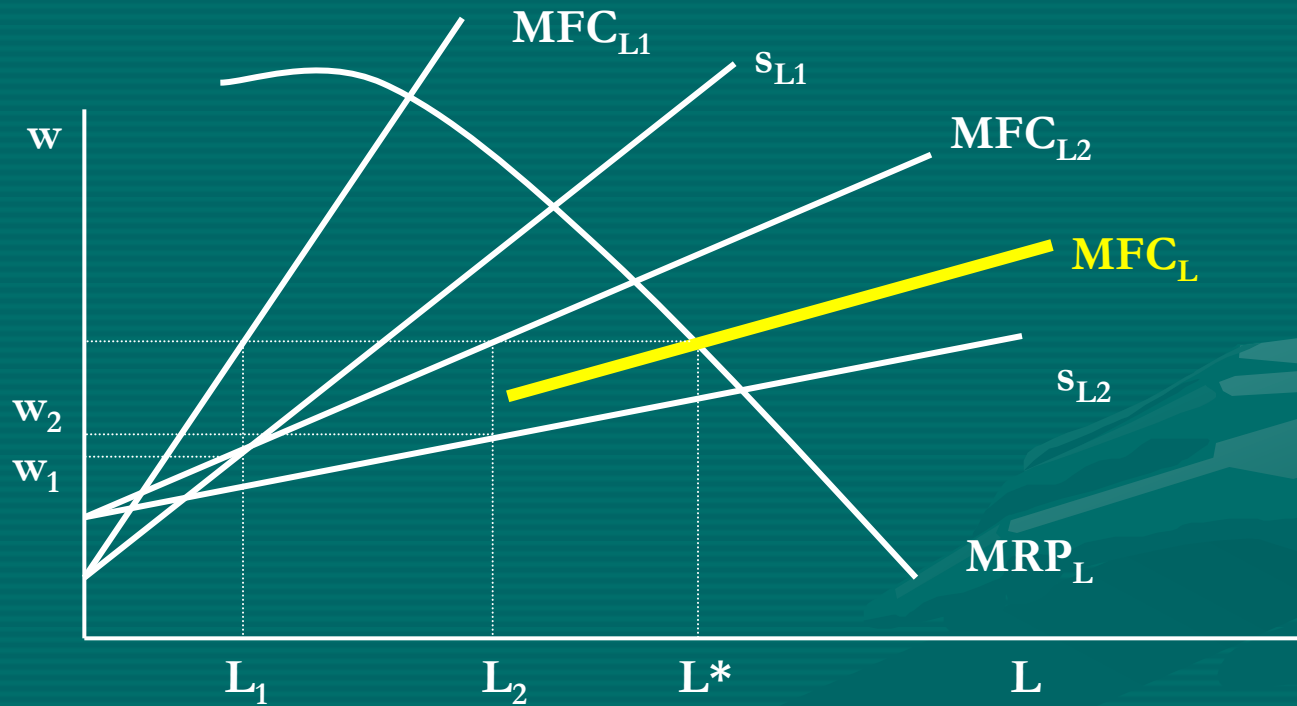
- isoquant analysis – optimal combination of L and K: $MP_L/w = MP_K/r$... or:
- $MRP_L/w = MRP_K/r$... but this is valid only for perfect competition input market (because $MFC_L=w$ a $MFC_K=r$)
- for whatever type of competition for optimal volume of inputs in the LR stands:

$$MRP_L/MFC_L = MRP_K/MFC_K$$

Wage discrimination

- similar to the third stage of price discrimination on the output market
- assumption: firm is able to divide the LM on at least two segments (two LFS functions)
- different wage elasticities of LFS
- different wages to the equal LF
- i.e.: gender wage discrimination

Wage discrimination



The firm recruits L^*

The more elastic LFS works for the wage rate w_2 , while the less elastic LFS works for the (lower) wage rate w_1

Labour force supply

Individual labour force supply:

until now: as a LFS to the specific firm, but since

now:

as the individual consumer's willingness to work

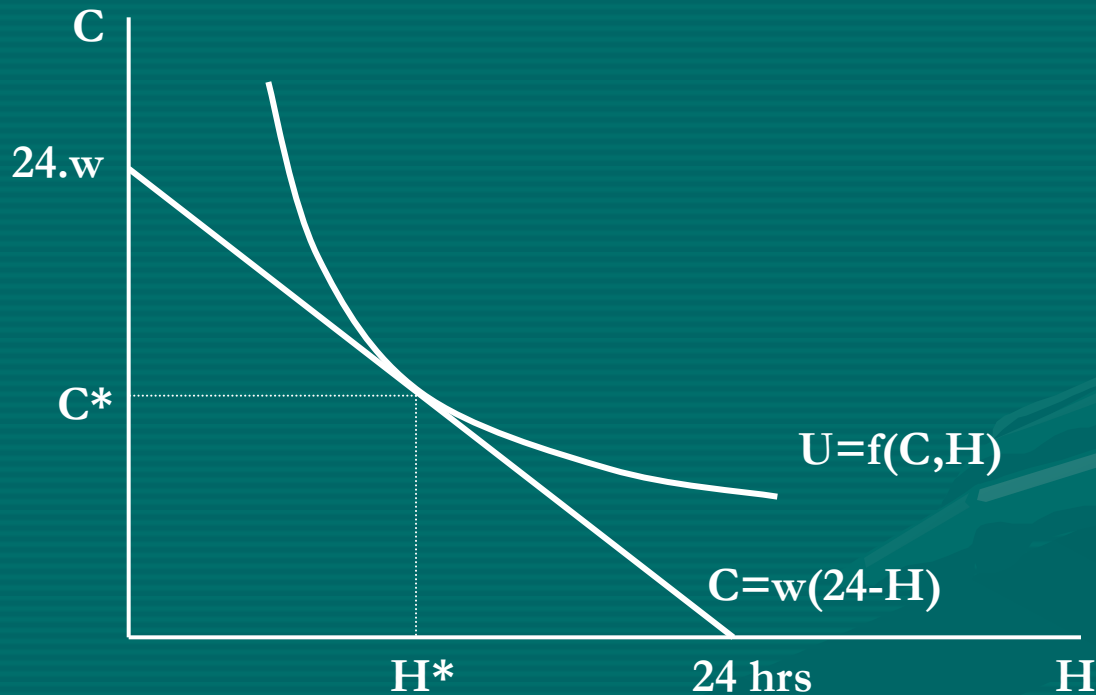
Consumer picks of the two „goods“:

CONSUMPTION (C) vs. LEISURE TIME (H)

Choice of leisure time and consumption

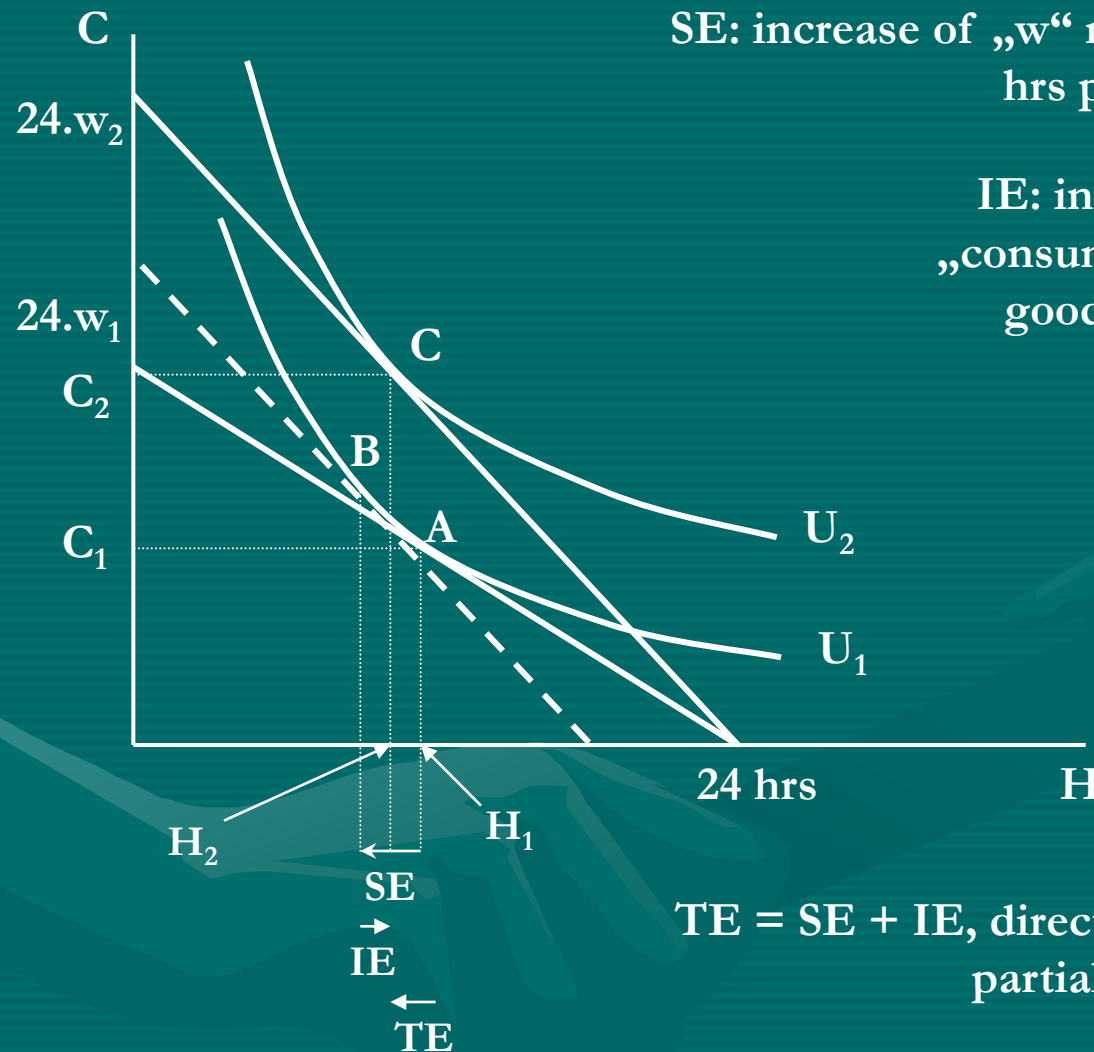
- CONSUMPTION – as a result of the previous work (L)
 $\rightarrow C = w \cdot L$
- TIME (24 hrs/day) – can be „spent“ for working time or leisure time $\rightarrow L + H = 24 \rightarrow C = w (24 - H)$...
consumer's budget line
- consumer's total utility: $U = f(C, H)$
- optimal choice of consumption and leisure time at the tangent of BL and IC, so if:
- $MRS = w$, or $\delta U / \delta H / \delta U / \delta C = w$

Consumption vs. leisure time



Consumer's equilibrium lies at spot (H^*, C^*) – the consumer works $24 - H^*$ hrs

Impact of the increase of wage rate – prevailing SE



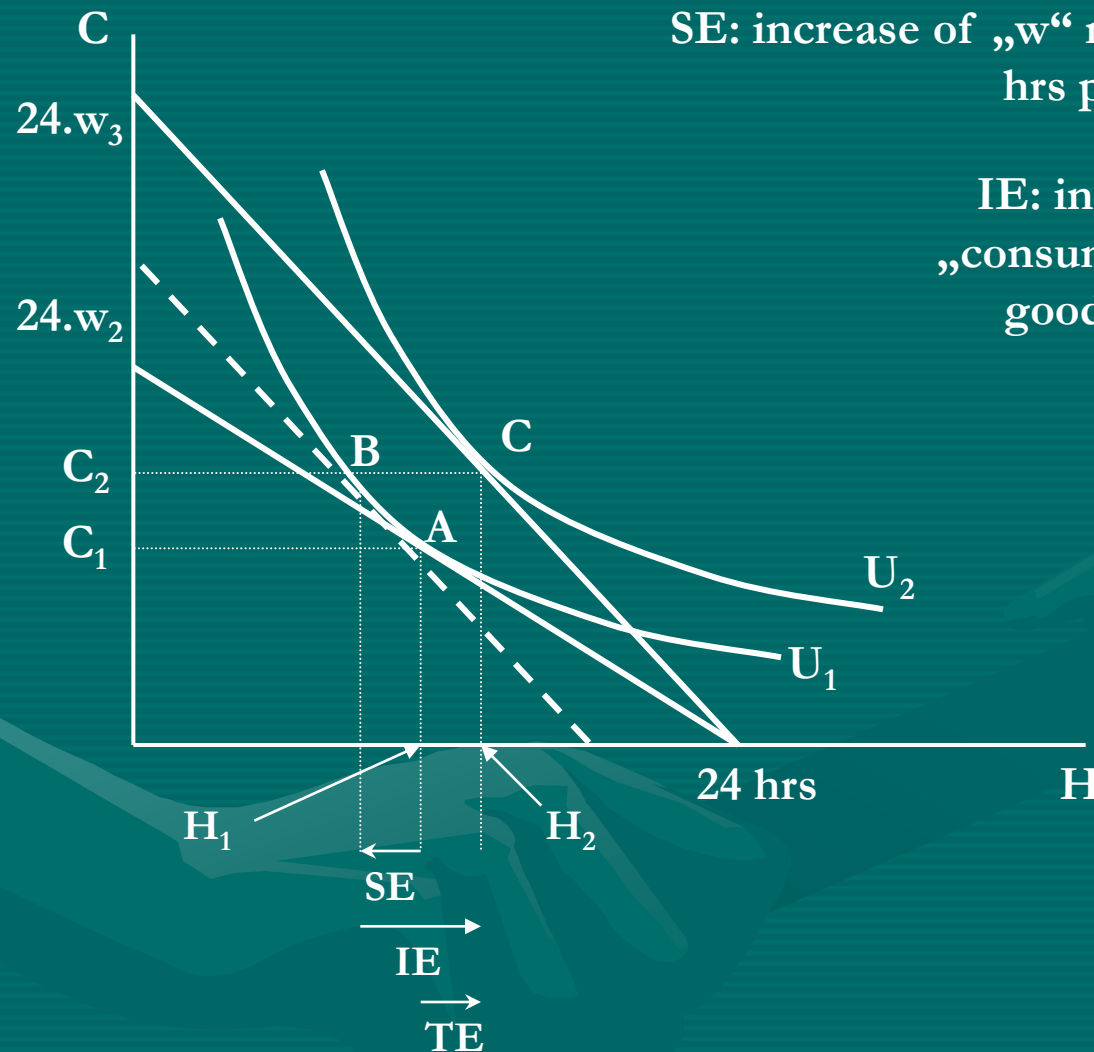
SE: increase of „w“ motivates to work more hrs per day

IE: increase of „w“ motivates to „consume“ more leisure time + more goods – demotivation to work

TE = SE + IE, direction of TE depends on which partial effect prevails

If SE prevails: increase of wage rate leads to the higher willingness to work

Impact of the increase of wage rate – prevailing IE



SE: increase of „w“ motivates to work more hrs per day

IE: increase of „w“ motivates to „consume“ more leisure time + more goods – demotivation to work

$$TE = SE + IE$$

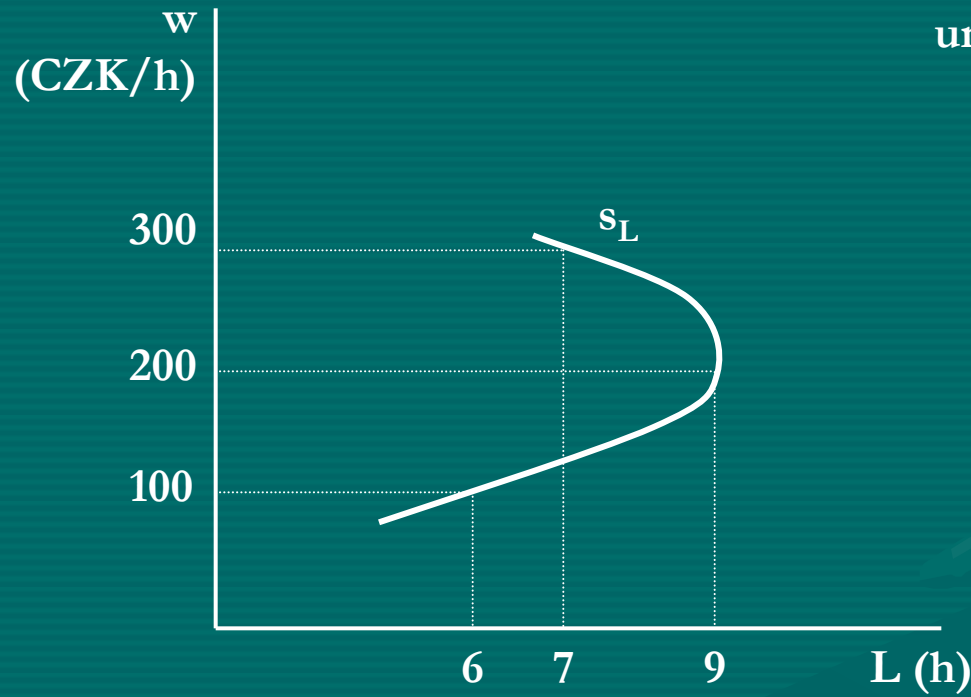
If IE prevails: increase of wage rate leads to the lower willingness to work

Individual labour supply curve

consists of two parts:

1. **prevailing SE** – labour supply increases with increasing wage rate
2. **prevailing IE** – labour supply decreases with increasing wage rate

Individual labour supply curve



until the wage rate 200 CZK/h
SE prevails

if the wage rate breaks the 200
CZK/h level, IE prevails

But: in reality – labour supply curve is positive sloped

WHY?

- it depends how the workers perceive the change of wage rate: temporary or everlasting change of „w“?



- **if temporary:** probably the SE prevails – „I am willing to work more for a higher wage rate, because I expect a future decrease of wage rate“ (typical for the short run)
- **if everlasting:** probably the IE prevails – „I am not willing to work more for a higher wage rate, because the present wage rate is enough“ (typical for the long run)

LR prevalence of the income effect

Average total hours and real wages, 1870-2000

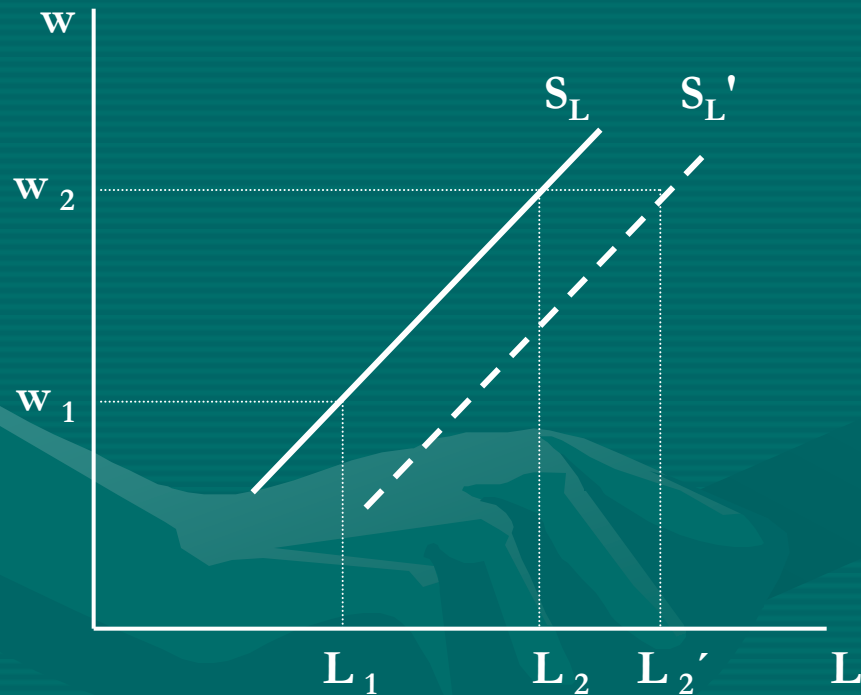
	1870	1913	1938	1973	1992	2000
Annual hours worked per person						
France	2,945	2,588	1,848	1,771	1,542	1,517
Germany	2,941	2,584	2,316	1,804	1,563	1,469
UK	2,984	2,624	2,267	1,688	1,491	1,491
USA	2,964	2,605	2,062	1,717	1,589	1,660
Sweden	2,945	2,588	2,204	1,571	1,515	1,588
Real wage (index: 1870 = 100)						
France	100	205	335	1,048	1,417	1,434
Germany	100	185	285	944	1,178	1,222
UK	100	157	256	439	640	733
USA	100	189	325	596	659	737
Sweden	100	270	521	1,228	1,493	1,727

Source: Burda, Wyplosz (2003)

Market labour supply

- in general: a horizontal sum of individual labour supply curves
- but market LFS curve is always positive sloped (aggregate SE always prevails... why?)
- ... because of the flows of LF among the labour markets

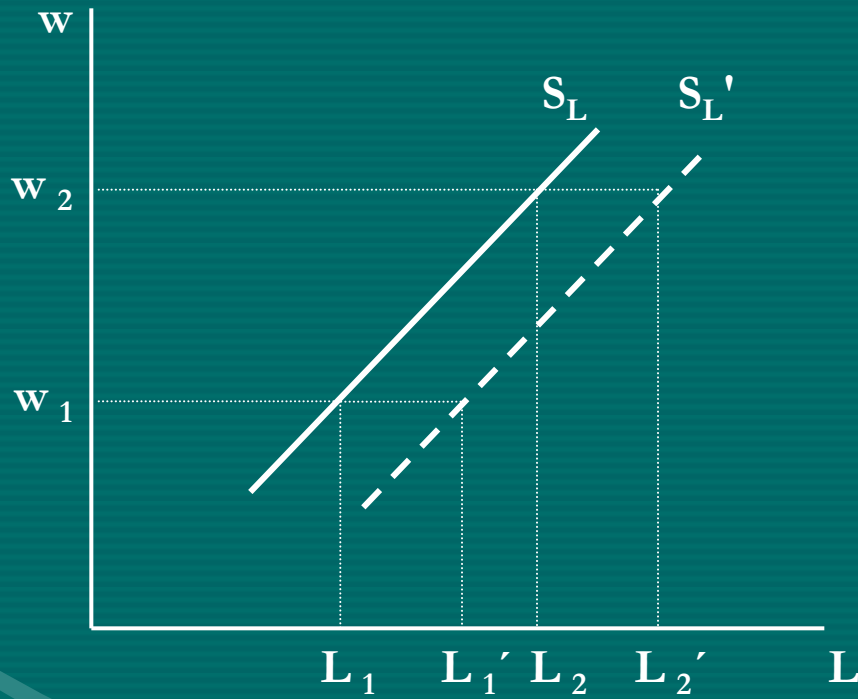
Increase of the wage rate and impact on the market LFS curve



increase of the wage rate leads to the increase of willingness to work of existing workers

+ additional labour force enters the specific labour market → shift of LFS rightwards (i.e. if wage rate of brick-layers increases, new brick-layers enter the labour market)

Impact of increasing interest rate



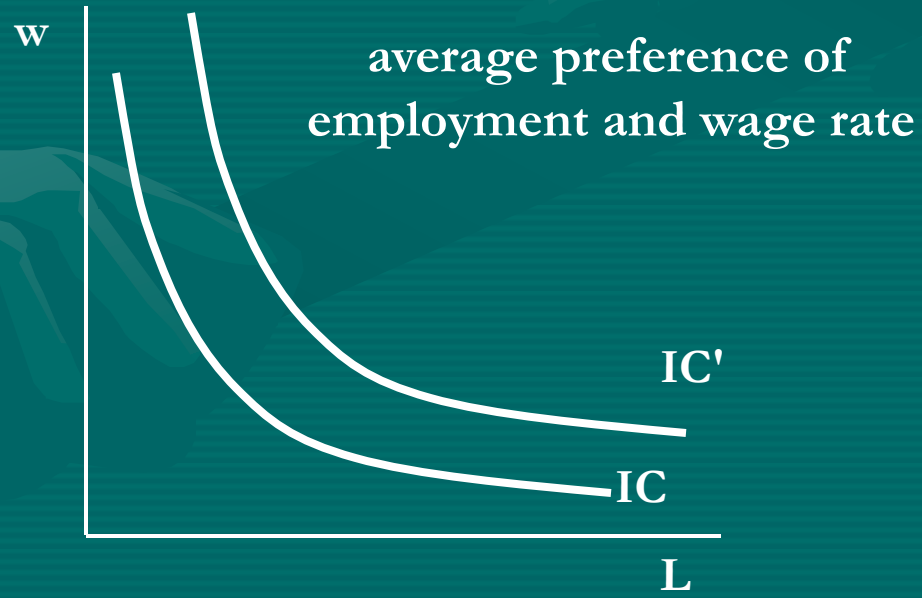
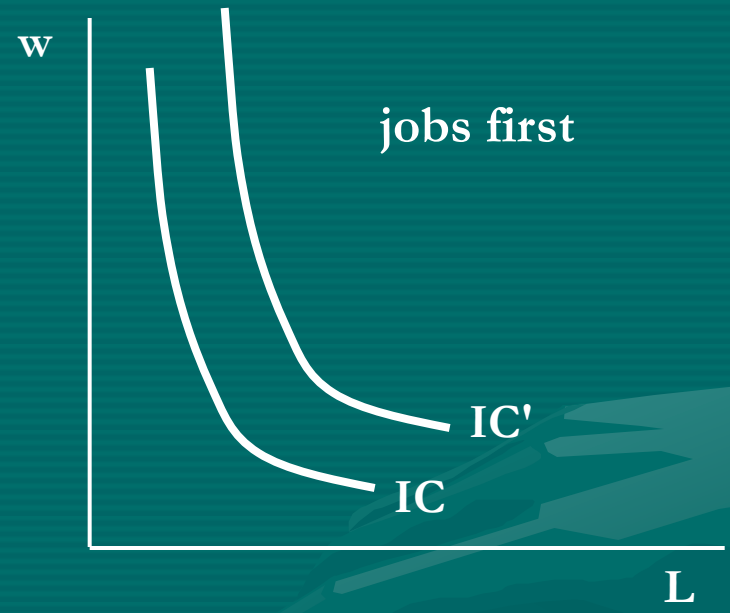
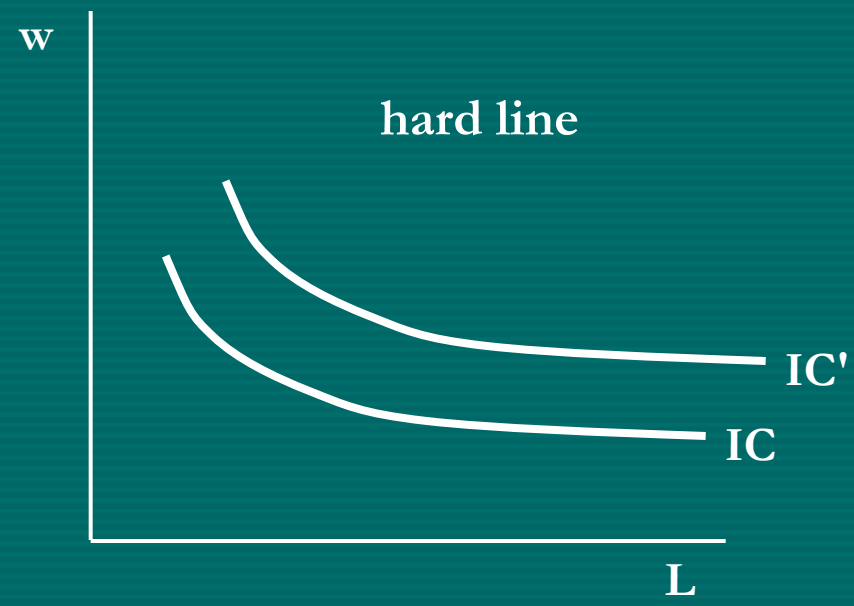
increase of interest rate increases the willingness to save

if households want to keep the constant volume of consumption, they must increase their willingness to work – market LFS shifts rightwards

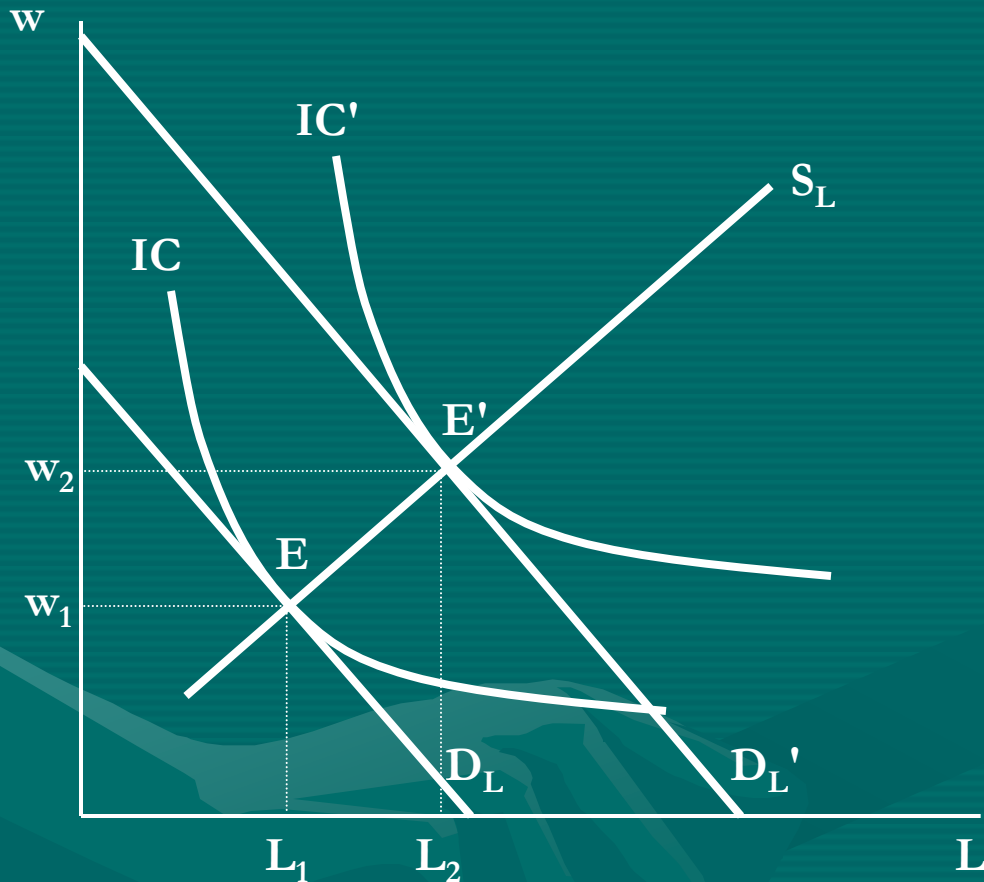
Labour unions (LU) on the labour market

- we assume: demand for labour = demand for labour force united in the labour unions; LFS = supply of the labour force united in the labour unions
- LU pick of the level of wage rate and the level of employment
- several LU strategies:
- „hard line“ – preferring the wage rate before the employment
- „jobs first“ – preferring the employment before the wage rate
- average – average level of employment and wage rate

IC shapes upon several LU strategies



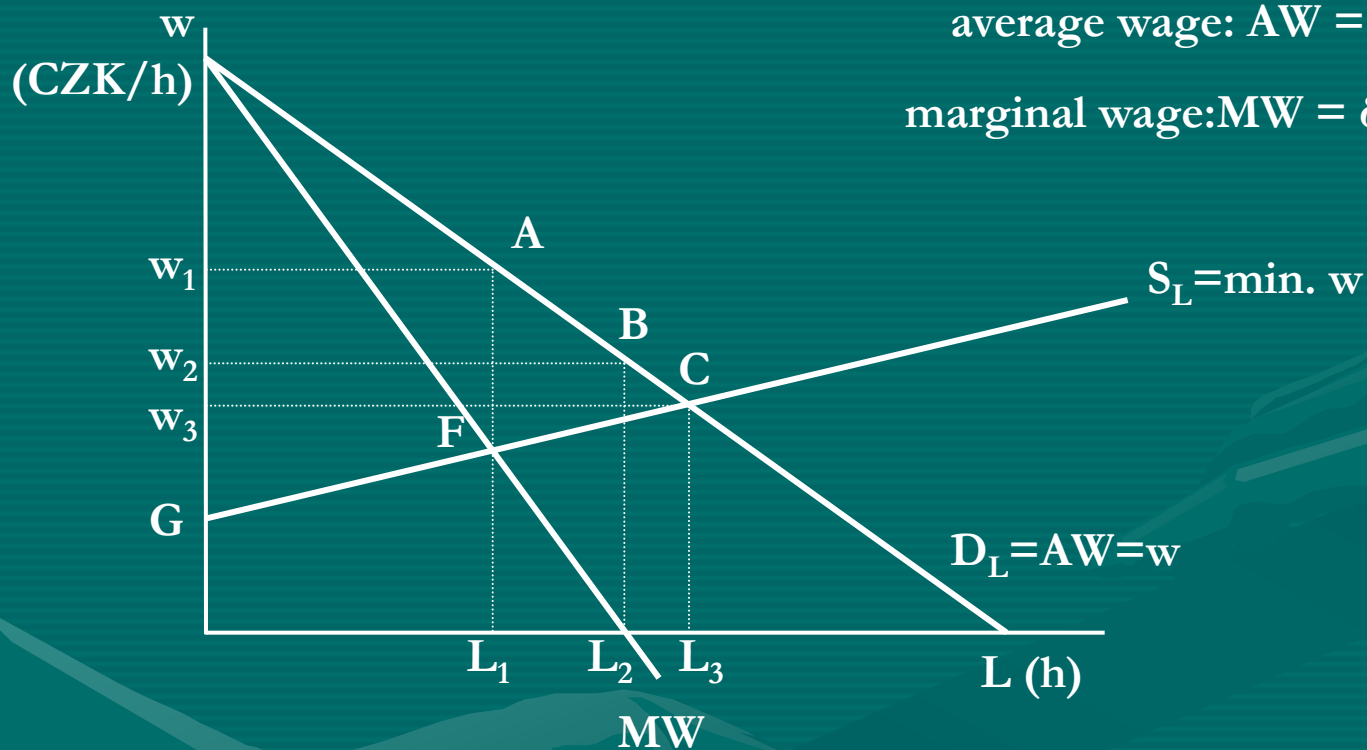
Deriving the LU LFS curve



Monopolistic power of LU

- LU as the only subject on the supply side of the labour market
- LU may upon the specific S_L and D_L follow different aims:
 - maximizing the economic rent of LU members
 - maximizing the total volume of wages of LU members
 - maximizing the employment of LU members

Monopolistic power of LU

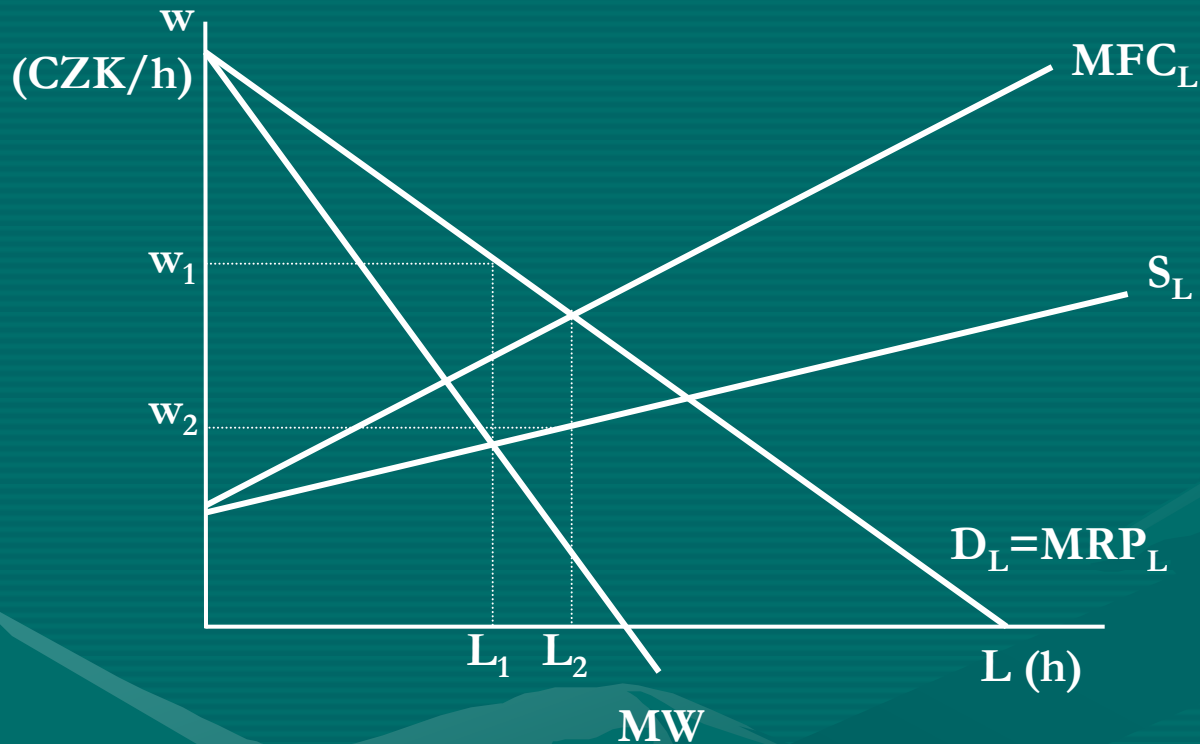


A: max. economic rent (area $AFGw_1$) – L_1 for w_1

B: max. total volume of wages (TW) (area $0L_2Bw_2$) – L_2 for w_2

C: max. employment – L_3 for w_3

Bilateral monopoly on the labour market



Monopoly (labour unions) derive their equilibrium from the intersection of MW and S_L –
LU equilibrium: L_1 for w_1

Monopsony derives its equilibrium from the intersection of MFC_L and MRP_L –
monopsony equilibrium: L_2 for w_2

Final equilibrium depends on the power of both subjects