

ANALYSIS OF LABOUR PRODUCTIVITY IN WOOD PROCESSING INDUSTRY

assoc. prof. Andrea Sujová, PhD.

Technical University in Zvolen, Slovakia

assist. prof. Petra Hlaváčková, Ph.D.

Mendel University in Brno, Czech Republic

CONTENT

- 1. Introduction**
- 2. Indicators measuring labour productivity at a sector level**
- 3. Achieved Results in Wood processing industry SK and CZ**
- 4. Conclusion**

INTRODUCTION

Productivity

= effectiveness of using production factors

= ratio of a output volume to volume of input use

LABOUR PRODUCTIVITY:

- Input measure: total number of worked hours or total number of employees
- Output measure:
 - at a macro level - GDP or GVA;
 - at a micro level – value added, production volume, production value, revenues.

The Aim of Presentation

is to present the effectiveness of using labour via indicators of labour productivity in wood processing industry of Slovakia and the Czech Republic

INDICATORS OF LABOUR PRODUCTIVITY AT A SECTOR LEVEL

1. Labour productivity (LP)

$$LP_R = \frac{\text{revenues}}{\text{number of employees}} (\text{€}) \quad LP_Q = \frac{\text{production value}}{\text{number of employees}} (\text{€}) \quad LP_P = \frac{\text{profit}}{\text{number of employees}} (\text{€})$$

2. Labour productivity rate (LPR) = number of employees for one monetary unit of revenues or production:

$$LPR_R = \frac{\text{number of employees}}{\text{revenues}} (\text{persons}) \quad LPR_Q = \frac{\text{number of employees}}{\text{production}} (\text{persons})$$

3. Marginal labour productivity (MLP) = accession of financial values of the industry (revenues, production, profit, added value) by increase of employment in the industry in one employee

$$MLP = \frac{\Delta \text{ economic indicator}}{\Delta \text{ number of employees}} (\text{€})$$

Results of Wood Processing Industry in SK and CZ

Indicator	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Slovakia										
employees	32396	31307	29994	31655	31064	32394	28069	23925	22387	22491
LP _R	71,5	82,5	89,4	89,9	97,3	101,7	102,2	92,4	95,8	113,2
LP _Q	78,1	83,5	84,9	91,5	96,9	100,9	85,1	96,0	100,0	109,6
LP _P	2,2	1,5	1,9	2,8	4,8	4,3	4,8	0,7	4,7	2,2
LP _{VA}	15,4	15,5	16,5	17,8	19,7	18,9	19,6	20,9	24,1	24,2
LPR _R (prs)	13,98	12,12	11,18	11,12	10,28	9,84	9,79	10,82	10,43	8,84
LPR _Q (prs)	14,74	12,81	11,97	11,77	10,93	10,32	9,91	11,75	10,42	10,00
LPR _{VA} (prs)	64,90	64,56	60,55	56,16	50,79	52,92	51,07	47,96	41,56	41,24
MLP _R		-0,24	-0,08	0,10	-0,30	0,20	0,10	0,16	0,04	0,85
MLP _Q		-0,23	-0,05	0,11	-0,26	0,22	0,07	0,19	0,07	0,96
MLP _{VA}		0,00	0,00	0,02	0,01	0,00	-0,03	0,00	0,00	0,00
MLP _P		0,02	-0,01	0,02	-0,10	-0,01	0,00	0,03	-0,06	-0,55
The Czech Republic										
employees	97020	94732	93603	92998	95519	95870	92278	82246	77065	74433
LP _R	86,9	88,8	106,4	68,3	73,4	82,8	78,7	79,1	92,4	96,2
LP _Q	50,7	51,4	58,8	64,2	70,1	80,0	79,8	78,9	90,7	93,9
LP _P	3,3	4,3	6,0	3,9	4,5	5,7	4,1	3,6	4,5	4,4
LP _{VA}	14,0	14,5	17,4	17,0	18,9	21,0	19,7	20,2	22,9	22,5
LPR _R (prs)	11,51	11,27	9,40	14,63	13,62	12,08	12,71	12,64	10,83	10,39
LPR _Q (prs)	19,71	19,44	17,00	15,57	14,27	12,51	12,54	12,67	11,03	10,65
LPR _{VA} (prs)	71,56	68,90	57,33	58,90	52,93	47,54	50,70	49,42	43,59	44,40
MLP _R		-0,01	-1,37	5,95	0,26	2,62	0,19	0,07	-0,12	0,02
MLP _Q		-0,02	-0,56	0,77	0,29	2,76	0,08	0,09	-0,10	0,00
MLP _{VA}		-0,01	-0,23	0,09	0,09	0,60	0,05	0,02	-0,02	0,03
MLP _P		-0,04	-0,14	0,33	0,03	0,33	0,05	0,01	-0,01	0,01

Results of Wood Processing Industry in SK and CZ

WPI in Slovakia:

- **Labour productivity:** Positive increasing trend (rise in 30 thousand euro per employee during ten years)
- **Rate of labour productivity:** decreasing trend = positive
- **Marginal labour productivity:** the change of employees' number caused a slight increase in revenues and production; no influence on value added

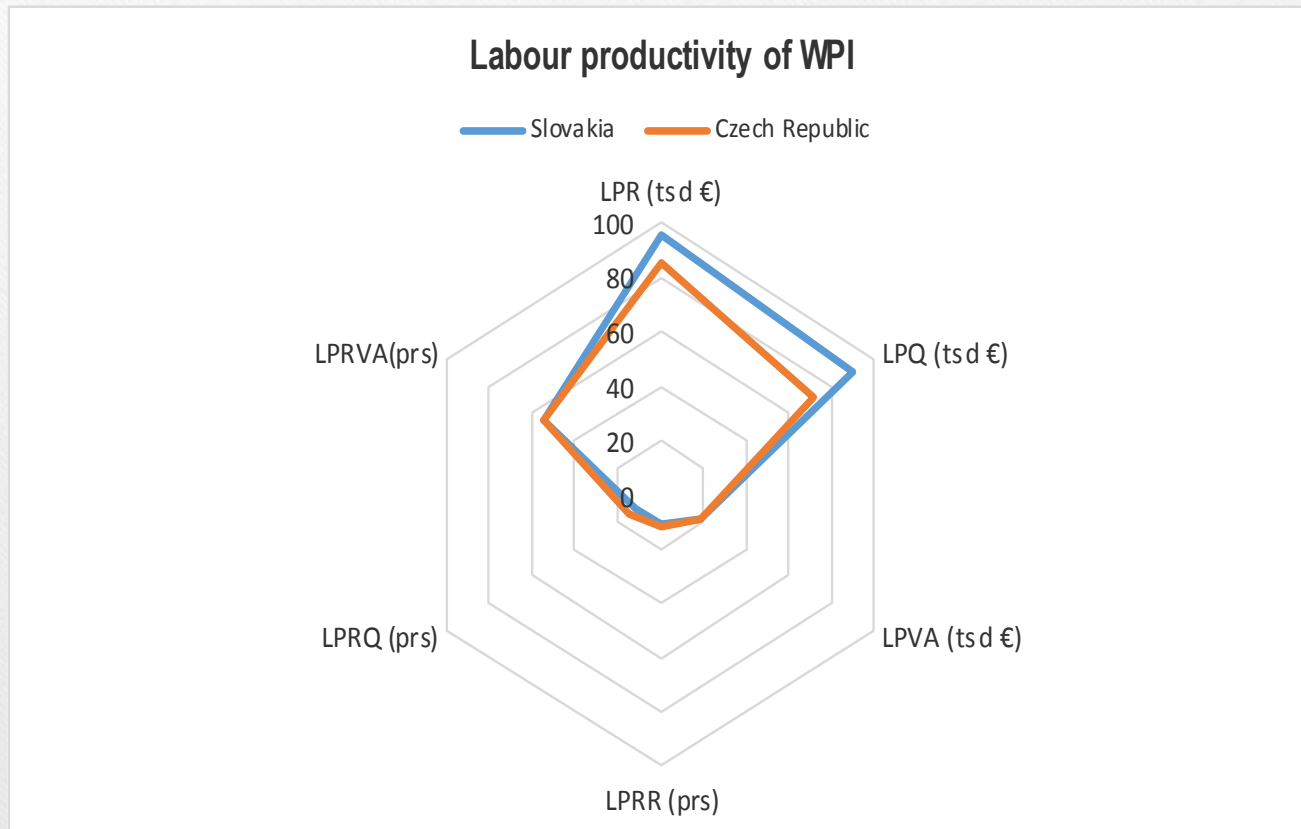
WPI in the Czech Republic:

- **Labour productivity:** Positive increasing trend (lower level and smaller rise as in Slovakia)
- **Rate of labour productivity:** increasing trend = negative (despite decreasing number of workers)
- **Marginal labour productivity:** the change of employees' number caused a rise of economic indicators.

The interesting results: in year 2006 and 2007 in both countries the labour productivity increased by increase of number of employees.

COMPARATIVE ANALYSIS

Basis for the analysis: mean (average) and median values of indicators representing labour productivity



CONCLUSION

Labour productivity is an important factor in determining the productive potential of the economy.

- **Achieved results of labour productivity in wood processing industry showed better results in Slovakia than in the Czech Republic.**
- **The positive decreasing trend by indicators of labour productivity rate is connected with lowering number of employees in the industry.**
- **Marginal labour productivity showed only little influence of change in employment in WPI on economic indicators**
- **The results showed that labour productivity has increased also by the rise of employment.**

Thanks for your attention