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LABOUR PRODUCTIVITY GROWTH FOR ECONOMIC DEVELOPMENT

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ABSTRACT
The object of the case-study focuses on the RLP (real labour productivity) per hour worked in EU-27 for the period of 2000-2010. Generally the real labour productivity affects the changing of the economic structure relevant to market conditions. The real labour productivity growth per hour worked can provide the marginal competitiveness either for any economy or for any firm, or transnational corporation.
The study analyses the correlations between the real labour productivity conditions and GDP or general growth of economies based on the statistical analysing methods from point of view of macro economic level. The study makes analyses among member states in EU-27 in field of comparing the real labour productivity growth per hour worked based on using statistical data coming from IMF (International Monetary Found) and Eurostat.
In case of Germany it can be seen that the highest developed economy could also realise less GDP growth in spite of higher growth of RLP, for example 2% of RLP growth, 0.8% GDP growth in 1996, 2.3% of RLP growth, 1.7% GDP growth in 1997, 2.5% of RLP growth, 1.5% GDP growth in 2001, 0.9% of RLP growth, -0,4% GDP growth in 2003. The reason of this contradiction was resulted by decreasing trend and fall of US economy. Even less RLP growth rate can result considerable competitiveness on the world market for highly developed member states of EU, which leads to increase large significant export value for member states. The export oriented strategy of companies is very useful to increase the price incomes also by through of export increase to create higher level of real labour productivity growth.
The world economic crisis affected the economic development of the highest developed economies of EU-27 and by through of these strongest EU member states also affected other less developed member states of EU. The EU-27 could not avoid of the world economic crisis, because this was started by US, as the first foreign economic partner of EU-27. The RLP growth can not affect automatically on the real GDP growth rate volume, because influences of RLP are determined by the foreign economic contacts and foreign trade of the EU-27, which can consequently realise results of the RLP growth for GDP growth. The spirit of the RLP growth is the development of innovation.

Keywords: Labour productivity, Competitiveness, GDP growth, Innovation, Foreign trade

INTRODUCTION

The object of the case-study focuses on the RLP (real labour productivity) per hour worked in EU-27 for the period of 2000- 2010/2011. Generally the real labour productivity affects the changing of the economic structure relevant to market conditions. Therefore the labour productivity can became basis for the economic development within the free market system. The study has importance to analyse correlations between the labour productivity and economic development. The labour productivity growing rate determines the development trends of the economy and affects the employment conditions based on the different economic sectors.
At present the real labour productivity rate concerning the GDP growth is very different in each region of the world economy and main country-group, emphasizing the economic role and conditions in EU-27. These differences in field of labour productivity are very vary in case of regions and show how each country can have more favourable conditions then the other one in field of labour productivity conditions, which can be titled as the important

social approach of the economic growth.
The real labour productivity growth per hour worked can provide the marginal competitiveness either for any economy or for any firm, or transnational corporation. Naturally the real labour productivity and the competitiveness based on either comparative or competitive advantages need for continuous education for employees in order that they become more skilled and satisfactory for demands of the world market (see in detailed NESZMÉLYI, 2001; NESZMÉLYI, 1999).

MATERIAL AND METHOD

The study analyses the *correlations* between the real labour productivity conditions and GDP or general growth of economies based on the *statistical analysing methods* from point of view of *macro economic level*. Naturally the macro economic process can include some main influences on the economic background of firms or mostly transnational corporations, which can develop more the innovation concerning special economic conditions of each country or region and market conditions. The *transnational corporations* have important role in flow of goods, labour force, capital and services. Therefore the transnational corporations emphasize the using the skilled worker in the production works and service activities.

The real labour productivity conditions can be overviewed either at firm level as human resources management or at national level as labour force market conditions. From point of view of macro economic level the study makes analyses among member states in EU-27 in field of comparing the real labour productivity growth per hour worked based on using statistical data coming from *IMF (International Monetary Found)* and Eurostat. The international analyses emphasized the differences among the wage and salary costs, and also non wage costs. This study uses analysis based on per unit of labour input, measured by total number of hours worked.
Some experts emphasize wage conditions of company effecting the RLP growth was to pay for employees, which are as follows (LUPTON AND BOWEY, 1983; COLE, 1988): 1- retain and motivate sufficient numbers of suitable employees to meet production needs; 2- encourage the optimum productivity from employees; 3- ensure of a high level of quality of output; 4- recognise the value of jobs in relation to each other; 5- enable employees to share in the growth and prosperity of the organization; 6- ensure the labour costs are suitably controlled in relation to other costs and in relation to revenues (role of human resources, see in detailed in ZSARNÓCZAI, 1979).

RESULTS

The RLP (real labour productivity) growth per hour worked in % can successfully increase based on the innovation development concerning the competitiveness on the world market and not based on the lower cost of labour force, in spite that this labour cost can also decrease. The RLP sharply fluctuated in Poland, where this was -47.5% in 2000, than it increased by 4.8% in 2003, 3.6% in 2009; in Bulgaria -11.7% in 1996, 10.2% in 2000; in Romania 16.0% in 2002 and -5.1% in 2009 (*Table 3*; *Figure 2*).

Table 1. Real GDP growth rate volume, percentage change on previous year

geo\time	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
EU (27 countries)	1.8	2.7	3	3	3.9	2.2	1.3	1.4	2.5	2	3.3	3.2	0.3	-4.3	2	1.6	0.6	1.5
EU (25 countries)	1.8	2.8	3	3.1	3.9	2.1	1.3	1.4	2.5	1.9	3.3	3.2	0.2	-4.2	2	1.6	0.6	1.5
EU (15 countries)	1.7	2.7	3	3	3.9	2.1	1.2	1.2	2.4	1.8	3.1	3	0	-4.3	2	1.5	0.5	1.4
Belgium	1.4	3.7	1.9	3.5	3.7	0.8	1.4	0.8	3.3	1.7	2.7	2.9	1	-2.8	2.3	2.2	0.9	1.5
Bulgaria	-9.4	-5.6	4	4.4	5.7	4.2	4.7	5.5	6.7	6.4	6.5	6.4	6.2	-5.5	0.2	2.2	2.3	3
Czech Republic	4.5	-0.9	-0.2	1.7	4.2	3.1	2.1	3.8	4.7	6.8	7	5.7	3.1	-4.7	2.7	1.8	0.7	1.7
Denmark	2.8	3.2	2.2	2.6	3.5	0.7	0.5	0.4	2.3	2.4	3.4	1.6	-0.8	-5.8	1.3	1.2	1.4	1.7
Germany	0.8	1.7	1.9	1.9	3.1	1.5	0	-0.4	1.2	0.7	3.7	3.3	1.1	-5.1	3.7	3	0.8	1.5
Greece	2.4	3.6	3.4	3.4	3.5	4.2	3.4	5.9	4.4	2.3	5.5	3	-0.2	-3.3	-3.5	-5.5	-2.8	0.7
Spain	2.5	3.9	4.5	4.7	5	3.7	2.7	3.1	3.3	3.6	4.1	3.5	0.9	-3.7	-0.1	0.7	0.7	1.4
France	1.1	2.2	3.4	3.3	3.7	1.8	0.9	0.9	2.5	1.8	2.5	2.3	-0.1	-2.7	1.5	1.6	0.6	1.4
Italy	1.1	1.9	1.4	1.5	3.7	1.9	0.5	0	1.7	0.9	2.2	1.7	-1.2	-5.1	1.5	0.5	0.1	0.7
Hungary	0.2	3.1	4.1	3.2	4.2	3.7	4.5	3.9	4.8	4	3.9	0.1	0.9	-6.8	1.3	1.4	0.5	1.4
Netherlands	3.4	4.3	3.9	4.7	3.9	1.9	0.1	0.3	2.2	2	3.4	3.9	1.8	-3.5	1.7	1.8	0.5	1.3
Austria	2.5	2.3	3.8	3.5	3.7	0.9	1.7	0.9	2.6	2.4	3.7	3.7	1.4	-3.8	2.3	2.9	0.9	1.9
Finland	3.6	6.2	5	3.9	5.3	2.3	1.8	2	4.1	2.9	4.4	5.3	1	-8.2	3.6	3.1	1.4	1.7
Sweden	1.6	2.7	4.2	4.7	4.5	1.3	2.5	2.3	4.2	3.2	4.3	3.3	-0.6	-5.2	5.6	4	1.4	2.1
United Kingdom	**2.9**	**3.4**	**3.8**	**3.7**	**4.5**	**3.1**	**2.7**	**3.5**	**3**	**2.1**	**2.6**	**3.5**	**-1.1**	**-4.4**	**2.1**	**0.7**	**0.6**	**1.5**

Eurostat
Hyperlink to the table:
http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsieb020
General Disclaimer of the EC: http://europa.eu/geninfo/legal_notices_en.htm
Short Description: Gross domestic product (GDP) is a measure of the economic activity, defined as the value of all goods and services produced less the value of any goods or services used in their creation. The calculation of the annual growth rate of GDP volume is intended to allow comparisons of the dynamics of economic development both over time and between economies of different sizes. For measuring the growth rate of GDP in terms of volumes, the GDP at current prices are valued in the prices of the previous year and the thus computed volume changes are imposed on the level of a reference year; this is called a chain-linked series. Accordingly, price movements will not inflate the growth rate.

Table 2. Unemployment rate by sex, world and regions (%), Both sex/Regions/year

	2000	2004	2005	2006	2007	2008	2009	2010
World	**6.3**	**6.4**	**6.2**	**5.9**	**5.6**	**5.7**	**6.3**	**6.2**
Developed Economies and European Union	6,7	7.2	6.9	6.3	5.8	6.1	8.4	8.8
Central and South-Eastern Europe (non-EU) and CIS	10,9	9.9	9.4	9.3	8.6	8.6	10.4	9.6
Middle East	10.6	11.2	11.2	10.7	10.5	10.2	10.3	10.3
North Africa	**14.1**	**11.9**	**11.6**	**10.5**	**10.2**	**9.6**	**9.9**	**9.8**

2010 are preliminary estimates; 2011 are projections.
Source: IMF, WORLD ECONOMIC OUTLOOK, OCTOBER 2010.

In general the less developed EU member states, for example Romania, were strongly influenced by the world economic conditions. Also the FDI (foreign direct investment) has wide side connections with *Romania, Poland and Bulgaria*, but *FDI* also decreased its investment activities based on the unfavourable world economic changes, which created decreasing trend of RLP in these countries. In spite that centres of transnational corporations are mainly in *Germany, U.K. (United Kingdom) and France*; these member states are not so depend on the direct influences of FDI, their real GDP growth volume has considerably decreased for periods of the world economic crisis in 2008-2009 (*Table 1*). Naturally the RLP growth is strongly depends on the export and by through of its export incomes and price incomes of the companies. The price income fall can decrease the productivity in fields of RLP and generally production.

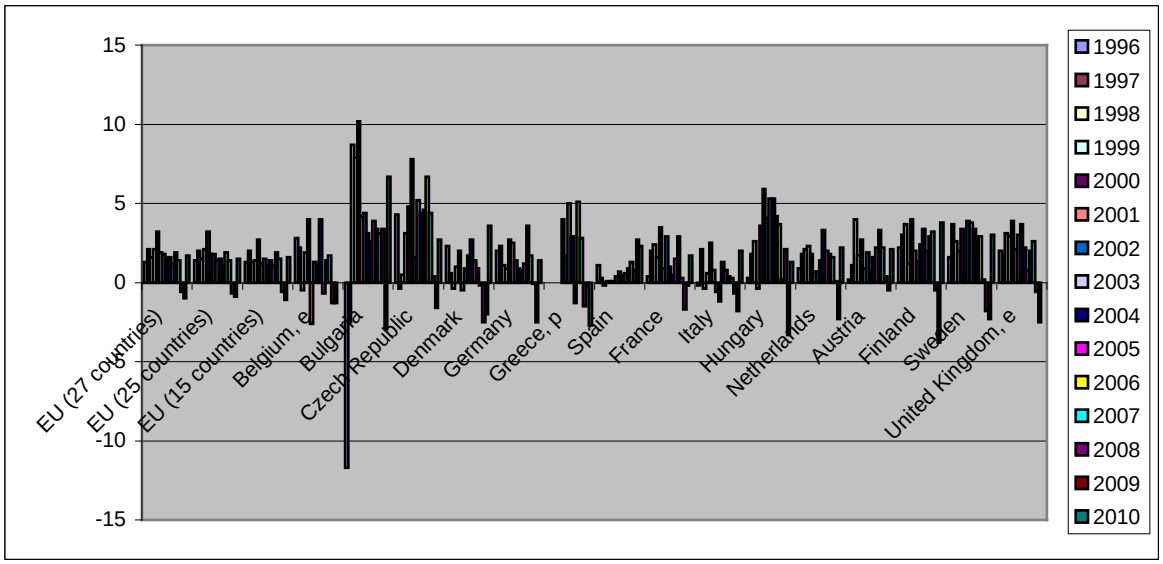

Figure 2. Real labour productivity growth per hour worked, % change over previous year, index 2000 = 100, Percentage change on previous period.

Source: :=Not available e=Estimated value b=Break in series p=Provisional value (2010)
Footnote: http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/Annexes/nama_esms_an2.htm
Source of Data: Eurostat, Hyperlink to the table:
http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsdec310
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In case of *Germany* it can be seen that the highest developed economy could also realise less GDP growth in spite of higher growth of RLP, for example 2% of RLP growth, 0.8% GDP growth in 1996, 2.3% of RLP growth, 1.7% GDP growth in 1997, 2.5% of RLP growth, 1.5% GDP growth in 2001, 0.9% of RLP growth, -0.4% GDP growth in 2003. The reason of this contradiction was resulted by decreasing trend and fall of US economy.
In general, the RLP growth per hour worked results more growing rate of the real GDP growth volume than the RLP's growth rate in member states of EU-27 (*Table 1*; *Table 2*). But even the less decreasing RLP growth rate can stimulate considerable GDP fall in EU. Also less strong economy, for example *Bulgaria*, in spite that the considerable RLP growth rate the GDP implements poorly increasing rate, in 2000 the RLP was 10.2% and the GDP growth was 5.7%. In case of other highly developed economies this difference of the RLP and GDP growth rates can happen, but almost after the economic crisis or recession process.
On the one hand this difference of the RLP and GDP growth rates can be explained that the RLP growth rate can be more difficultly calculated in service sector, than in industry.
On the other hand even less *RLP growth rate can result considerable competitiveness on the world market for highly developed member states of EU*, which leads to increase large significant *export value* for member states. The *export oriented strategy* of companies is very useful to increase the *price incomes* also by through of *export increase* to create higher level of real labour productivity growth.
In general in *Czech Republic* considerable fall has been implemented for two year period, in 1997-1998 in field of RLP, therefore the RLP change could not successfully effect on the GDP growth rate volume. In fact the favourable growth of RLP accompanying with GDP growth has occurred for almost one decade from 1999 to the end of 2007.

Table 3. Real labour productivity growth per hour worked% change over previous year, index 2000 = 100, Percentage change on previous period geo\time

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
EU (27 countries)	1.3	2.1	1.6	2.1	3.2	1.9	1.8	1.5	1.6	1.2	1.9	1.4	-0.6	-1	1.7
EU (25 countries)	1.4	2	1.5	2.1	3.2	1.8	1.8	1.4	1.5	1.1	1.9	1.4	-0.7	-0.9	1.5
EU (15 countries)	1.3	2	1.3	1.4	2.7	1.2	1.5	1.1	1.4	1.1	1.9	1.5	-0.6	-1.1	1.6
Belgium, e	2.8	2.2	-0.5	1.9	4	-2.6	1.3	1.1	4	-0.7	1.4	1.7	-1.3	-1.3	:
Bulgaria	-11.7	-2.5	8.7	7.9	10.2	4.2	4.4	3.1	2.6	3.9	3.4	3.1	3.4	-2.9	6.7
Czech Republic	4.3	-0.4	0.5	3.1	4.8	7.8	1.6	5.2	4.4	4.6	6.7	4.4	0.4	-1.6	2.7
Denmark	2.3	0.6	-0.4	1	2	-0.5	0.9	1.7	2.7	1.4	0.9	-0.2	-2.5	-2	3.6
Germany	2	2.3	1.1	0.9	2.7	2.5	1.4	0.9	0.8	1.2	3.6	1.7	-0.1	-2.5	1.4
Greece, p	:	:	:	:	:	4	1.7	5	2.9	-1.3	5.1	2.8	-1.5	-0.3	-2.7
Spain	1.1	0.3	-0.2	0.1	0.1	0.1	0.4	0.7	0.5	0.6	0.9	1.3	0.8	2.7	2.3
France	0.4	2	2.4	1.6	3.5	0.9	2.9	1	0.5	1.5	2.9	0.3	-1.7	-0.2	1.7
Italy	-0.2	2.1	-0.4	0.6	2.5	0.8	-0.6	-1.2	1.3	0.8	0.4	0.3	-0.7	-1.8	2
Hungary	0.3	1.8	2.6	-0.4	3.6	5.9	4.1	5.3	5.3	4.2	3.7	0.2	2.1	-3.3	1.3
Netherlands	0.9	1.8	2.1	2.3	1.8	0.7	0.7	1.4	3.3	2	1.8	1.6	0.1	-2.3	2.2
Austria	0.2	1.1	4	1.7	2.7	0.9	1.9	0.7	1.6	2.2	3.3	2.2	0.4	-0.5	2.1
Finland	2.2	3	3.7	1.2	4	2	1.3	2.4	3.4	2	2.9	3.2	-0.5	-3.8	3.8
Sweden	1.6	3.7	2.6	2	3.4	0.6	3.9	3.8	3.4	2.9	2.9	0.2	-1.8	-2.3	3
United Kingdom, e	**2**	**1.7**	**3.1**	**2.9**	**3.9**	**2.1**	**3**	**3.7**	**2.2**	**0.8**	**2**	**2.6**	**-0.6**	**-2.5**	**:**

Source:=Not available e=Estimated value b=Break in series p=Provisional value
Footnote: http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/Annexes/nama_esms_an2.htm
Source of Data: Eurostat
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General Disclaimer of the EC: http://europa.eu/geninfo/legal_notices_en.htm
Short Description: Real labour productivity per hour worked is calculated as real output (deflated GDP measured in chain-linked volumes, reference year 2000) per unit of labour input (measured by the total number of hours worked).
Measuring labour productivity per hour worked provides a better picture of productivity developments in the economy than labour productivity per person employed, as it eliminates differences in the full time/part time composition of the workforce across countries and years.
Code: tsdec310
Total Labour Costs (TOT) cover wage and non-wage costs less subsidies. It does not include vocational training costs or other expenditures such as recruitment costs, spending on working clothes, etc.
Wage and salary costs (WAG) include direct remunerations, bonuses, and allowances paid by an employer in cash or in kind to an employee in return for work done, payments to employees saving schemes, payments for days not worked and remunerations in kind such as food, drink, fuel, company cars, etc.
Labour costs other than wages and salaries (OTH - non-wage costs) include the employers' social contributions plus employment taxes regarded as labour costs less subsidies intended to refund part or all of the employer's cost of direct remuneration. The labour cost index covers the following economic activities: - Industry (NACE Rev. 2 sectors B to E); B Mining and quarrying, C Manufacturing, D Electricity, gas, steam and air conditioning supply, E Water supply; sewerage, waste management and remediation activities. - Construction (NACE Rev. 2 sector F). - Services (NACE Rev. 2 sectors G to N);

This was resulted by favourable world market conditions and consolidated economic growth of Germany (ZSARNÓCZAI, 1996), which had considerable economic effects on Czech Republic. Hourly labour costs in the *euro area* (EA-17) rose by 2.7% in the year up to the third quarter of 2011, compared with 3.3% for the previous quarter. In the *EU-27*, the annual rise was 2.6% up to the third quarter of 2011, compared with 3.2% for the previous quarter. Compared with News Release 134/2011 of 16 September 2011, data for the second quarter of 2011 have been revised from +3.6% to +3.3% for the euro area (EA-17) and from +3.4% to +3.2% for the EU-27. (EUROSTAT, 191/2011 – 16. December,

2011). RLP should be developed more in Hungary, even after 2010 and also in agricultural sector (SZABÓ AND ZSARNÓCZAI, 2004).

CONCLUSIONS

In general it can be declared that the *world economic crisis of 2008-2009 caused significant economic decrease of EU-27 in fields of RLP and GDP growth*. The world economic crisis affected the economic development of the highest developed economies of EU-27 and by through of these strongest EU member states also affected other less developed member states of EU. The EU-27 could not avoid the world economic crisis, because this was started by US, as the first foreign economic partner of EU-27. This world economic crisis was first bank- financial crisis, which extended to other economic sectors and the employment conditions.

The RLP growth can not affect automatically on the real GDP growth rate volume, because influences of RLP are determined by the foreign economic contacts and foreign trade of the EU-27, which can consequently realise results of the RLP growth for GDP growth. The spirit of the RLP growth is the *development of innovation*, as the final basic element for the competitiveness of EU member states on the world market. In spite that increasing unemployment rate in EU also after the world economic crisis, the EU can remain its competitiveness because of increasing of its RLP growth (*Table 2*).

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