LABOUR PRODUCTIVITY AS A FACTOR OF THE ECONOMIC SUSTAINABLE DEVELOPMENT

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Abstract

Romania aims at reducing the economic and social gaps to the EU developed Member States. This requires an economic sustainable growth. An increased labour productivity is one of the main factors of competitiveness at national level and of sustainable economic development.

Key-words: *labour productivity, sustainable development, economic growth*

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In order to promote an economic growth, we need strong macroeconomic strategies to support development, employment and price stability.

A dynamic economic activity and increased productivity result in:
− encouraging competition on the goods and services market;
− integrating the capital market;
− promoting investments in knowledge (3% of the GDP), innovation and new technologies;
− increased contribution of the public sector to the economic growth.

An increased labour productivity is one of the main factors of competitiveness at national level. The productivity sustainable growth and an increased workforce usage rate on medium-term are two major objectives of Lisbon Strategy.

In Lisbon, the European Union sets two strategic objectives to be attained by 2010:

1) developing the most dynamic economy in the world, focused on sustainable development and social cohesion;

2) making the EU enlargement a success, through an increased living standard within the new Member States.

The attainment of these objectives involves a sustainable economic growth process. The economic growth modern theories promote:

♦ The technological changes in line with the market requirements;

♦ The efficiency of the factors of production;

♦ An increasing employment rate and income redistribution which are interconnected.

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The economic growth is based on well-established macroeconomic and social cohesion strategies. Therefore, in the European model, social cohesion, stability and economic growth are complementary processes, for a high economic growth rate leads to long-term economic stability and social cohesion.

From a positive perspective, the economic growth stimulates the technical progress unlimited potential supported by knowledge, thus saving all the factors of production.

The European model is economically and socially bivalent and also multidirectional, because it covers the aspects inside and outside the market.

The new European economy reveals unconventional resources such as knowledge potential and the human capital innovation capacity. The economic/social balance ensures the EU stability (diagram 1)
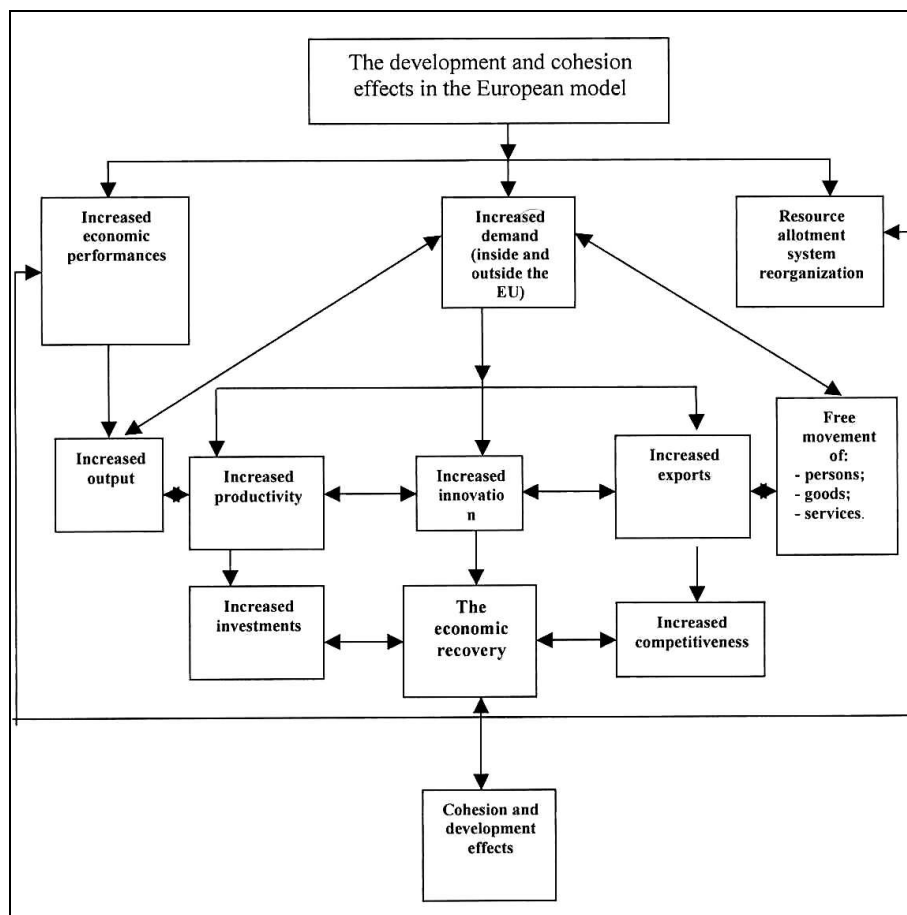
Source: Marin D., Socol C., Marinaş M., *Economie europeană. O prezentare sinoptică*, Economica Publishing House, Bucharest, 2004.

Diagram 1. *The development and cohesion effects in the European model*

An efficient economic growth implies a permanent improvement process:

Stage 1: *Factor-based economy*

– the primary factors of production are the competitive edge sources:

♦ cheap workforce;
♦ access to natural resources;

Stage 2: *Investment-based economy*

‒ improves output efficiency;
‒ improves the quality of goods and services;

Stage 3: *Innovation-based economy*

‒ the competitive edge resides in the capacity to develop innovative goods and services by using state of the art methods in line with the global technology.

At national level, competitiveness must be analysed primarily in point of productivity, salaries and costs and subsidiarily in point of the business environment, the economic and technological infrastructure, education and competences, innovation and creativity.

We may say that the access to information and knowledge is a driver of the future economic development. The competences and the intellectual capital are the factors of the economic competitiveness, the way to increase labour productivity and to develop new products.

Innovation is the key to capitalize competitiveness, facilitating a sustainable economic development.

The manufacturers must have in view that productivity is the prerequisite to survive in a globalizing market.

We will analyse the economic growth issue on an increased labour productivity background:

• *the quality and performance of tangible assets* – equipment, infrastructure used in the production process;

• *the quality of the human capital* – the people holding management positions must adjust to new technologies and work practices;

• *innovation and technological progress* – an increased productivity results in:
‒ technological development;
‒ investments in human capital and modern tangible assets;
‒ new working practices and technologies.

• *competition* – stimulates:
‒ the production and management sectors;
‒ cost reduction;
‒ output efficiency.

An increased productivity requires a proper financial support. We must have in view that sustainable development involves the reorganization of the increased productivity and output process. We must also analyse the shapes productivity takes in relation to:

‒ the output;
‒ the value of the sold goods;
‒ the gross added value.

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The productivity may also be expressed through: GDP/inhabitant; GDP/employee; GDP/working hour; productivity/employee; hour productivity.

At macroeconomic level, the state must:

− develop a favourable business environment leading to increased productivity and economic growth;

− maintain the macroeconomic stability;

− develop the microeconomic environment through:

o *the commodity market* – which will pressure upon the production sector (by minimizing the production costs, increasing the demand, increasing the prices and the like);

o *the labour market* – which contributes significantly to the economic growth (through increased supply, a more flexible labour market, fair salaries according to performances and the like).

Sustainable development correlates elements as:

o expansion;

o growth;

o progress;

o development and underdevelopment;

o economic and human development.

Human development is a sustainable process especially because it involves people and their participation in the economic outcomes and fair income distribution. The human potential must be improved. This translates in investments in education, culture, professional training and health. Knowledge is accessible to anyone.

Productivity reflects the efficient use of the factors of production (workforce – N and capital – K).

The factors of production are seen as inputs, while the production as output:

$Q = f (K, N)$

Therefore, we will analyse:

− the global productivity: $w = Q / K + N$;

− the partial productivity:

▪ capital productivity $w = Q / K$;

▪ labour productivity : $w = Q / N$.

At national level, the GDP and the total number of employees ($\sum N$) may determine:

− the social labour productivity: $W = PIB / \sum N$;

− at the level of each branch (W_i), the individual productivity results from the gross added value of the branch (VAB_i) plus the number of employees from the respective branch (N_i): $W_i = VAB_i / N_i$.

We know that the GDP value results from the sum of the VAB_i of each branch:

$$PIB = \sum VAB_i; \quad VAB_i = W_i N_i$$

Then, the productivity at national level (table 1) is calculated as follows:

$$\mathbf{W = PIB / \sum N = \sum VAB_i / \sum N = \sum W_i N_i / \sum N = \sum W_i\ g_i}$$

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Table 1

Social labour productivity/branches in Romania

Branch	Gross added value VAB i	The employed Ni	Labour productivity / branch Wi	The employed structure gi	**Wi gi**
Agriculture and forestry	34448,2	2421	14,23	28,40	4,04
Industry	117995,7	1919	61,49	22,51	13,84
Constructions	54538,2	680	80,20	7,98	6,40
Trade	53635,1	1170	45,84	13,73	6,29
Other branches	197872,2	2334	84,78	27,38	23,21
Total	**458489,4**	**8524**	**53,79**	**100,00**	**53,79**

Source: INS-THE 2007 *Statistical yearbook.*

The social labour productivity: $\mathbf{W = PIB / \sum N = \sum VABi / \sum N = 39,13.}$

The agriculture and forestry sectors record the lowest level in point of labour productivity/branch (14,23%), while the constructions one records the highest level (80,20%); the "other branches" category includes branches experiencing a high productivity rate (mail and telecommunications services, financial and banking operations, real estate transactions and the like). If we perform a comparative analysis of the number of employees and the labour productivity/branch, we find that agriculture is the sector with the highest workforce share (28,40%) and the lowest labour productivity rate (14,23%), while at the opposite side lies the constructions sector with the lowest workforce share (7,98%) and the highest labour productivity rate (53,79%).

That's why we must analyse the labour productivity different values/branches and the economic differences in various regions. An increased labour productivity level determines an increase in the real income leading to a significant economic growth. Therefore, labour productivity is an important economic growth factor in our country. The transition to the market economy entails a drastic fall in the GDP during the 90s, followed by an economic growth period (between 1993 and 1994) and a new economic downturn (between 1997 and 1999) marked by massive privatisation. The economic reorganization strikes the mono-industrial regions, deepening the economic gaps in different areas of Romania. In 2000, the economic recovery process is hindered. The GDP per inhabitant / labour productivity relation may be analysed as a variation of two qualitative variables. By means of GINI inequality coefficient, such variables may indicate the extension or the reduction of the economic gaps, depending on the economic growth or fall recorded in various countries or regions.

The GINI inequality coefficient (CG) measures the income uneven distribution. It can be used to measure any type of irregular distribution. The index's values range from 0 to 1.

- Ø – indicates a perfect equality (all the people have the same income)
- 1 – indicates a perfect inequality (*a person* is fully remunerated, while the others' income is 0)

$$CG = \sum (2i - n - 1)*xi / n \sum xi$$

Where: xi – the values of the analysed variable.

The GINI coefficient disadvantage resides in the fact that an income distribution comparative analysis in various countries may be a difficult task, for the benefit system may vary from country to country.

Data collection (income) is difficult as a result of the regular or fortuit errors; the GINI coefficient cannot work with less accurate data.

Examples: Gini coefficient:

U.S.A.	– 1970	– 0,394
	1980	– 0,403
	1990	– 0,428
	2004	– 0,408
Japan	2004	– 0,249
Germany	2004	– 0,25
France	2004	– 0,327
Russia	2004	– 0,456

The GINI coefficient in Romania (table 2):

Table 2

Year	*GINI* inequality coefficient	
	GDP/ inhabitant	Labour productivity
2000	0,1719	0,1749
2002	0,1760	0,1464
2003	0,1631	0,1211
2004	0,1621	0,1112

The GDP / inhabitant and labour productivity values recorded in Romania are far below the EU average (table 3)

As a rule, the GDP is expressed in comparable prices: **PIB comp 1=PIB1 / Ip**

Where: **Ip** – the price index;

PIB 1 – the GDP expressed in actual prices.

Table 3

The average labour productivity in Romania compared to the EU 27 countries (EU -27) (EU 27=100)

Country	Labour productivity / employee								
	2000	2001	2002	2003	2004	2005	2006	2007	2008
Romania	**23,6**	**25,6**	**29,3**	**31,1**	**34,5**	**36**	**39,6**	**44,1**	**47,7**
Germany	108,0	106,8	106,4	108,6	108,2	109,4	108,9	107,7	107,6
France	125,1	125,0	125,5	121,6	120,7	122,2	121,5	122,1	121,1
Italy	126,0	125,5	117,7	115,5	112,2	111,0	109,7	108,6	108,3
Bulgaria	30,4	31,4	33	33,4	33,7	33,6	34,7	34,9	36,5
Hungary	63,8	68	71	71,3	67,3	67,3	68,1	68,0	69,3

Source: EUROSTAT.

Between 2000 and 2008, Romania records the lowest productivity rate, compared to the EU developed Member States, yet experiencing an increase from 23,6% in 2000, to 47,7% in 2008.

Among the economically developed EU Member States, Germany and France record constant labour productivity values between 2000 and 2008, while Italy, enjoying the highest value (126%) in 2000, experiences a permanent fall down to 108,3% in 2008.

Hungary records higher productivity rates than Romania. Therefore, in 2000, the labour productivity value reaches 63,8%, in 2003 it goes up to 71,3%, then it goes down, to reach 69,3% in 2008.

Compared to our neighbouring country, Bulgaria, we record similar values and although in 2000 Bulgaria's productivity rate exceeds 30,4%, in 2008 it only reaches 36,5%, therefore Romania is ahead by 11,2%.

A comparative analysis between Romania and the EU Member States may be made in point of productivity/working hour (W/h) as well – table 4.

Table 4

Productivity/working hour (EU 15=100)

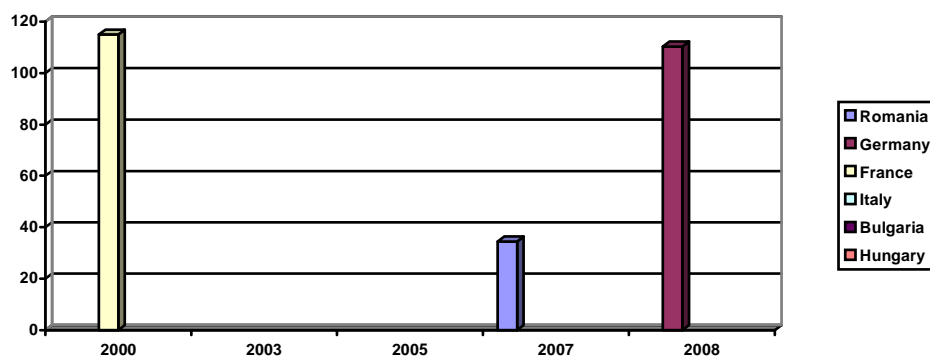| Country	2000	2003	2005	2007	2008
Romania	18,6	24,7	28,5	34,5	-
Germany	107,3	110,1	111,8	110,5	110,4
France	115,0	115,7	114,9	115,5	-
Italy	99,1	92,3	89,5	87,8	88,2
Bulgaria	27,1	29,7	29,7	30,8	-
Hungary	45,3	52,1	49,4	50,2	51,2

Source: EUROSTAT.

Fig. 4. *Productivity / working hour within the EU-15 between 2000 and 2008*

Even in point of the productivity/working hour Romania records the lowest value. Although in 2000 our country records a 18,6% rate, it enjoys a slow yet permanent growth, reaching 34,5% in 2007, surpassing Bulgaria which records 3,8% in the same year. Compared to the EU Member States, Romania records a low productivity level because:

– France records the highest rate, from 115% in 2000, to 115,5% in 2007;

– Germany records a high rate, from 107,3% in 2000, to 110,4% in 2008.

– Hungary surpasses both Romania and Bulgaria, recording a 45,3% value in 2000 and reaching 51,2 in 2008.

Table 5 reveals the annual EU real productivity (taking the year 2000 as basis):

Table 5

The annual EU real productivity 2000 = 100

Country	2000	2003	2005	2008	2009	2010
Romania	100	131,5	117,8	128,2	121,9*	126*
Bulgaria	100	111,5	118,9	130,4	126,7*	129,5*
Germany	100	102,1	138,6	148,2	140,6*	144*
France	100	101,4	98,2	97,3	93,8*	95,2*

Source: EUROSTAT.

*If we tackle the real productivity rate/employee (taking the year 2000 as basis).

Therefore, Germany has a high real productivity rate (148,2% in 2008) estimated to reach 144% in 2010.

France's real productivity level (97,3%) is below Germany's (148,2%), Romania's (128,2%) and Bulgaria's (130,4%).

The forecasts for 2000 show an increase in the real productivity level compared to the basic value (100 in 2000) but also to the previously recorded progress.
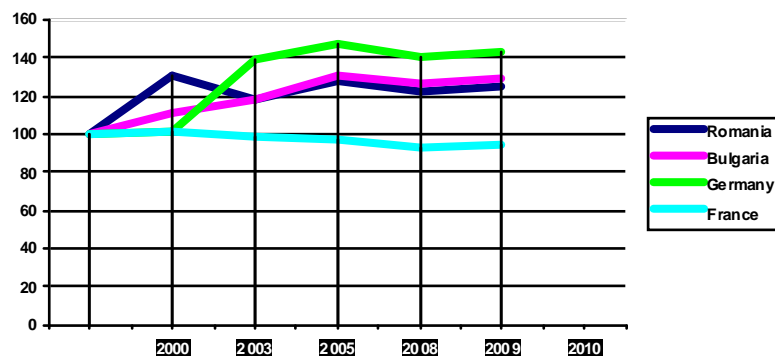

Fig. 4. *Real productivity in the EU taking the year 2000 as basis (2000 = 100)*

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Another important aspect is the labour productivity (W_{mc}/wage increase correlation). Between 2000 and 2006, this fundamental economic correlation is applied; starting from 2007, however, along with a sudden wage increase, it undergoes significant changes translating in the wage dynamics (**22,2%**) in the January – September 2008 interval exceeding the W_{mc} dynamics (**9,8%**).

This phenomenon impacts the *inflation process* and the *export*, entailing difficulties in *controlling inflation*.

Export, as an economy driver, is an important factor, having in view that the internal absorption – based models are limited.

However, Romania allots **62,2%** from the GDP in 2008 compared to the European countries allotting between **71** and **14,8%** from the GDP, because we're not supported by exporters.

Although Romania experiences a sustainable increase in the GDP/inhabitant (74% between 2003 and 2008), this deepens the macroeconomic imbalances (budgetary deficit, deficit in the current account BPE), making it hard to maintain the GDP dynamics in this uncertain international environment.

An economic sustainable growth in Romania requires *low inflation rates*. Inflation may entail *economic, social and environmental instability* as well as increased uncertainty and risk.

Reduced inflation and costs involves primarily increased competitiveness and labour productivity and subsidiarily, wage increase.

The economic growth involves high employment rates correlated with a decrease in the unemployment level (down to its basic value – 4,5%).

The sustainable development concept is very popular in the contemporary world bringing innovative ideas in line with the markets' goals.

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