THE IMPORTANCE OF LABOUR PRODUCTIVITY FOR THE ROMANIAN INDUSTRY FOR THE GROWTH OF ITS COOMPETITIVENESS

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Abstract: During the actual stage, especially after our country's accession to the EU, competitiveness is a major feature of Romania's economic capability to confront with market pressures on the European market. This paper presents a central indicator used for the analysis of the competitiveness degree of any economy – labor productivity, an if this is compared to the labor force cost per unit, then we can obtain a series of information concerning the efficiency of firms' economic activity and the effects on the national economy as a whole. Article financed by UEFISCSU through the program IDEI, Contract CNCSIS no. 826/19.01.2009

Key-Words: efficiency, labour productivity, competitiveness, industrial production indices, incies of the average number of employees, labour productivity indices

1 Introduction

The ability of the Western market economies to provide the members of the society with material goods and services made them be envied by many other societies and it is one of the strongest arguments through which one can use the market as a way of organizing the society. The markets are able to focus the individual imagination and creativity in order to produce material goods and services. They manage this by offering the people some stimuli in order to deliver goods and services for the market.

But, any enterprise has limited resources, and this fact can also be seen in its activity. In order for the entrepreneur to earn more, he has to increase the volume of the economic goods which were produced and sold. Taking into account the fact that the production factors are limited, we can appreciate that in order to attain this objective, the entrepreneur has to follow the growth of the efficiency, and to rationalize its activity.

The synthetic expression of the efficiency of using the production factors in the activities which produce economic goods is the productivity. The productivity means the efficiency with which the production factors are consumed.

The size of the productivity can be determined according to the company, the branch of activity and the national economy. For any company, or entrepreneur, obtaining a high level of productivity means the growth of the efficiency, obtaining bigger effects with the same volume of production factors used or obtaining some given effects with a smaller volume of production factors.

In this context, for any entrepreneur or even for the national economy, the growth of the productivity has a special importance, because it presupposes that more wealth shall be produced with the same volume of production factors and this allows a better satisfaction of the needs.

2. Theoretical and conceptual aspects regarding labour productivity

The first evaluations of the productivity took place in USA at the end of the 19th century and were circumscribed to a single production factor – the labour factor – under the form of labour productivity. This can

be explained through the active role of the labour in the economic activity and the importance of the labour in the production factors.

The labour productivity is the efficiency with which a certain quantity of human labour is used in the given conditions. As a consequence, the labour productivity can be interpreted as the efficiency of the human factor, in technical determined circumstances. The labour related to the economic activities can be an individual and a social labour, which makes the labour productivity to have two instances: individual and social.

The productivity of the individual labour is the efficiency with which the human factor is used at the level of each economic agent according to the specific conditions, organization, qualification and intensity of the work. It can be measured by the quantity of the goods or services obtained in the time unit (W).

The growth of the labour productivity means the process through which the same volume of work is materialized in a bigger quantity of goods or, the same quantity of goods can be realized with a smaller volume of work. This process presupposes essential changes in the entire labour process, in the usage of the production factor. Because of these changes the labour time for the production of a good is reduced, so that the same quantity of work gains the property to produce a bigger quantity of goods. There is an objective tendency to save the social labour and it is expressed by the law of the growth of the labour productivity, which reflects a causality report between the level of the development of the material factors and the efficiency of the human factor.

The progress of each society is realized by the reasonable use of the available work time, resource that is limited, perishable and irrecoverable. In the same time, the needs that must be satisfied from the same resource manifest a growth tendency, imposed by the production increase and variety.

In this context, the economy of the work time becomes a vital need for the whole economic and social activity, for the acceleration of the material, scientific and cultural progress of the country.

The special complexity of the correlation that exists between the results of the production and the consumption of work used in this sense, their profound interferences, on different plans, are determined by an ensemble of factors that influence the components of both elements, determining them to have different specific forms and ways of interaction.

After their nature, the factors of the productivity growth are divided in:

a) natural factors (climate and fertility conditions, the depth and the concentration degree of the mineral deposits);

b) technical factors (the level reached by science and technical development and the degree on which the technical process can be applied);

c) economic factors (the way of development and organisation of the economic activity and the qualification degree of the employees etc);

d) social factors (the level of life, the labour conditions, the responsibility and the seriousness);

e) psychological factors (the labour motivation, the familial climate and the labour relations climate);

f) structural factors (the evolution of the production structure, of the branch structure, and of the technical or property structure of the national economy);

g) factors which come from the integration degree of the national economy in the international economy (technical or economical specialization types, the degree of performance and competitiveness of the national products of the international market).

The operation of these factors takes place inside a national economy, with a determined structure and a certain way of organization of the production, and especially with a certain technical device of the production which is materialized in the volume and the efficiency of the capital which was used.

The fact of making evident these factors and the effects on the mentioned correlation allows the settlement of the nature of their influence and of the changes which take place in their structure and in their independencies system. As a consequence, the work productivity can be considered a characteristic (W) or a function [W(x)], whose level was formed as a result of the influence of certain factors $x_1,x_2\ldots,x_n$. Mathematically, this relation can be expressed in this way:

$$W(x) = f(x_i) \quad (1)$$

where: $W(x)$ = the values of the resulting characteristic, respectively of the work productivity, depending on the variables x_i;

x_i = the values taken by the factorial characteristics ($i= 1, \ldots x$)

In the case of the work productivity, the factorial characteristics or the variables (x_i) are phenomena, processes of economic, technical, political, social nature, etc., that increase the capacity of the work force of creating, in the same time unit, a raised quantity of products. These variables, which take the form of a factor, implicitly become elements of causality and conditioning compared to the work productivity.

The essential problem that must be solved is that of establishing the influence order of the factorial characteristics, as well as the intensity of their action. For this aim, the realization of a rigorous scientific classification for the increase factors of the work

productivity is imposed, as well as the elaboration and the use of an unitary system of them, so as to create the possibility to form a hierarchical system with them, according to their place and their importance.

In this context, we can appreciate that the productivity will remain in the next decades the main measurement index for the competitiveness, because it manages to exactly surprise the evolution of the relative resource economy. Because in the competitiveness the aspects related to the consumption of the resources – the main problem which preoccupies and which should preoccupy the humankind in the next future because of the lack of resources – shall be considered as the main, important problems, also more important the problem of the comparative advantage. Obtaining a comparative advantage under the form of a profit, presupposes a growing competition in the competitive economies, and this aspect excludes the cooperation and the accomplishment of a resource economy.

3 Correlations between the labour productivity and economic efficiency

The work productivity and the economic efficiency are economic categories, but in the same time they are considered as economic indicators that derive from the objective economic law of the work time economy.

The preoccupations related to the growth of the efficiency and of the competitiveness have another reference point towards the one of the resource economy: the growth of the social cohesion. The principle of the social cohesion and of removing the social exclusion from the European Union is the social-economic standard which is said to be the closest to the equity principle. Maintaining the equity is a way to accomplish a certain level of efficiency, because one can remove in a certain way some possible social conflicts. Measuring the efficiency of the past actions and finding some better solutions for the future are the basic points which should be respected in order to obtain and/or maintain a certain welfare level. Any misinterpretation of this point can lead to not leading the requirements of the equity principle in following the distribution of the incomes and goods. This can also lead to dissatisfaction and in consequence, social movements which from an economic point of view may generate actions which reduce the total efficiency of the economic processes.

The law of the work productivity acts in all the social orders, asking for a superior level of the work productivity, in each of these, compared to the preceding one. In this way, with all the existing differences from an order to another, the production forces marked a progress in each stage of the evolution and in consequence, the level of the work productivity has been higher. So, we can conclude that this progress has not been accidental, occasional, characteristic only for a certain period in the development of the history, more or less favored by certain conjunctures, but it represents a lawful process of increase of the human work productivity. This does not mean, however that the work productivity must be a strictly increasing function, if we should mathematically formalize it. As far as unequal progresses have been registered in the development of all the production forces, from an order to another or from a region to another, differences of intensity have been registered in the manifestation of this law, sometimes even as a contradictory, sinuous tendency.

We consider that in a realistic approach, the evolution, especially of the labour productivity on the level of the society, should be realized in relation with the development phases of the economic crises.

Such approach is imposed by the fact that the evolution of the labour productivity on the level of the society reflects the efficiency of the whole work. The refreshing or progress, in the economic development, is directly connected to the more intensive use of the production device and of the work force, while, the decline or the stagnation period in the economic crisis, determines a non - use of the production potential, and implicitly of the human potential.

The historical evolution of the facts proved that, in the cyclic development of the economic events, the apparition of the economic crisis has been followed by a period of fall of all the sectors of the economy, with adequate consequences: the production decrease, the reduction of the export, the galloping inflation, the uncontrolled spiral of the prices.

We can conclude that, the use of the law of increase of the work productivity, does not concern only the knowledge of the causality relation that it expresses, but it also supposes to find some practical solutions that should continuously mobilize, the increase of the work productivity depending on these factors, as well as a permanent effort of estimation and quantification of the level of its dynamics, from a period to another.

Although in the reference literature there is a very prevalent point of view, according to which the work productivity represents the fundamental form of expression of the economic efficiency (the synthetic expression of the increase of the production efficiency), with all these, they are different categories from the point of view of their content. So, while the economic efficiency expresses, in the most general way, every report between an economic result and an economic effort, or the vice versa, the work productivity expresses, only a certain report of this type (effects/ effort). In consequence, the relation between the work productivity and the economic efficiency is from a part to the whole and within the framework of the system of indicators of

the economic efficiency, the work productivity has an important place, being a basic vector of it. Moreover, in the economic practice, in order to appreciate the gotten efficiency, we firstly use the work productivity whose level and dynamics give expression to its level.

Also, the economic efficiency characterizes an ensemble of economic, social, cultural, ecological effects, etc., which are immediate or of perspective, material and non – material, measurable and non – measurable, etc.; while the work productivity aims only at the measurable economic results.

In order to assure the increase of the economic efficiency, both at the macro economic level and also at micro economic level (of economic agent), some fundamental correlations must be settled and observed, such as:

a) $I_Q > I_{CF} > I_{NS}$, (2)

where : I_Q = the increase index of the production

I_{CF}= the increase index of the fixed capital

I_{NS}= the increase index of the number of employees

This means that, the volume of the production must increase more rapidly than the volume of the fixed capital and than the number of the staff, this correlation being situated at an optimum level when the number of the employees increases in a slower rhythm than the fixed capital.

b) $I_W > I_{RC} > I_{\hat{I}T}$, (3)

where : I_W = the increase index of the work productivity

I_{RC}= the increase index of the efficiency (the productivity) of the fixed capital

$I_{\hat{I}T}$= the increase index of the technical aptitude of the work

If we observe the above correlation this fact supposes that the work productivity should increase in a more accentuated degree compared to the degree of technical aptitude of the work and to the efficiency (the productivity) of the fixed capital, the optimum level of this correlation being registered when the efficiency of the fixed capital increases more rapidly than the degree of technical aptitude of the work.

c) $I_W > I_{EN} > I_{\hat{I}T}$, (4)

where : I_{EN}= the increase index of the net efficiency of the fixed capital

In this case , the work productivity must increase more than the rhythm of increase of the net efficiency of the fixed capital, this one, at its turn, must exceed than the evolution of the degree of technical aptitude of the work.

d) $I_W > I_S$, (5)

where : I_S= the increase index of the nominal average salary

This means that an economic unit will be registered in an increase tendency of the economic efficiency when the index of increase of the work productivity exceeds the index of increase of the nominal average salary.

4 The evolution of labour productivity on the level of the Romanian industry

In Romania, after 1990, according to the National Institute of Statistics, the labour productivity index is calculated and published under the form of a dynamic index, using the value of the industrial production reported to the number of employees, at the level of the sectors from the manufacturing, mining and quarrying industry and in the energy, water and gases sectors. So, as a consequence the indices of the labour productivity are calculated by reporting the industrial production to the indices of the medium number of employees for the economic operators with industrial activity. At the same time, the evolutions of the labour productivity per employee are also calculated and published (as a ratio between the gross added value and the number of employees), and also the hourly labour productivity (as a ratio between the gross added value and the number of worked hours).

Table 1

The evolution of the industrial production indices, in Romania, between 2000-2008

2000 = 100

Activity (CANE Rev.1 divisions)	2000	2001	2002	2003	2004
Total Industry, of which:	100	108.3	113.0	116.5	122.7
Mining and quarrying industry	100	105.3	99.6	99.2	101.6
Manufacturing industry	100	109.8	116.9	121.1	128.8
Electric and thermal energy, gas and water	100	97.1	93.8	95.4	92.3

continued

Activity (CANE Rev.1 divisions)	2005	2006	2007	2008
Total Industry, of which:	125.1	134.1	141.3	142.5
Mining and quarrying industry	101.0	103.5	103.1	102.7
Manufacturing industry	132.1	142.4	151.6	152.6
Electric and thermal energy, gas and water	90.9	94.9	94.1	99.9

Source: Romanian Statistical Yearbook 2006, p. 639; Romanian Statistical Yearbook 2009, p. 854

Analyzing all the data from table no.1 one can notice that during the 8 years (2001-2008) which were analyzed, having as a pattern of comparison the year 2000, the indices of the production have evolved in the Romanian economy for the branch of the manufacturing industry, reaching the value 152.6%, while the mining and quarrying industry, after it registered a growth of up to 105.3% (in 2001) it started to decrease successively within 2 years, so that the end of the period it should be situated at 102.7% as in the year 2000. The branch of the electric and thermal energy, gas and water registered continuous decreases of the production reaching in 2005 (90,9%), and subsequently this branch has registered a comeback reaching in 2008 the same level as in 2000. In spite of these the total result of industry shows a growth of the production indices, reaching to the level of 142.5% in the year 2008. The branches which contributed the most to this evolution, in the sense that there were continuous growth until 2008: the food and beverages industry (188.3%), the wood and wooden products manufacturing industry (which after a negative evolution in the first years, it registered an incredible growth reaching 187.2%), the rubber and plastic products industry (194.0%). Of all these fields the most important contribution is the one of the means of road transport industry, which during 8 years it tripled its production (296.1%).

Table 2

The Evolution of the indices for the medium number of employees, from the Romanian industry, between 2000-2008

2000 = 100

Activity (CANE Rev.1 divisions)	2000	2001	2002	2003	2004
Total Industry, of which:	100	101.5	101.0	98.7	93.0
Mining and quarrying industry	100	100.7	97.1	91.4	84.3
Manufacturing industry	100	101.9	102.2	101.3	95.6
Electric and thermal energy, gas and water	100	98.3	93.1	80.3	76.3

continued

Activity (CANE Rev.1 divisions)	2005	2006	2007	2008
Total Industry, of which:	89.3	87.1	86.2	83.8
Mining and quarrying industry	81.4	67.9	60.0	57.9
Manufacturing industry	91.3	90.3	89.9	87.7
Electric and thermal energy, gas and water	76.9	74.0	74.0	69.9

Source: calculated on the data given by the Romanian Statistical Yearbook 2006, p.127; Romanian Statistical Yearbook 2009, p. 138

In what the evolution of the medium number of employees from the Romanian industry is concerned, one observes a continuous degrease, because of the migration of the labour force with different qualifications to the countries which are more attractive salaries. Of this decreasing tendency there are some deviations, in the sense that in some branches of the Romanian industry the medium number of employees grew, but this aspect comprises only the manufacturing industry: food and beverages; rubber and plastic products; metallic constructions and metallic products; IT and office means; electric machine and appliances; means of road transport; waste recovering.

Table 3

The Evolution of the indices of the productivity from the Romanian industry between 2000-2008

2000 = 100

Activity (CANE Rev.1 divisions)	2000	2001	2002	2003	2004
Total Industry, of which:	100	106.7	112.0	118.0	131.9
Mining and quarrying industry	100	105.1	102.9	109.1	121.5
Manufacturing industry	100	107.8	114.4	119.4	134.7
Electric and thermal energy, gas and water	100	98.8	100.6	118.7	120.7

continued

Activity (CANE Rev.1 divisions)	2005	2006	2007	2008
Total Industry, of which:	140.1	154.0	163.9	170.0
Mining and quarrying industry	124.2	154.0	171.5	178.9
Manufacturing industry	144.5	157.7	168.6	174.0
Electric and thermal energy, gas and water	118.2	127.9	127.5	142.1

Source: calculated on the data given by the Romanian Statistical Yearbook 2006, p. 640; Romanian Statistical Yearbook 2009, p. 856

As a consequence one notices that at the level of the Romanian industry, the index of the labour productivity, registered some growth from one year to another, according to the industry and to the each branch of the industry reaching in 2008 at 170.1% as in the year 2000. The highest rate growth was found in the manufacturing industry, as it follows: tobacco products (404.6%), means of road transportation (323.6%), chemical

substances and products (279,6%), crude oil processing, coal coking and nuclear fuel treatment (252.1%), manufacturing of construction materials and other products of non metallic minerals (245.2%), metallurgy (217.0%). There were also significant reductions of the labour productivity in the following branches: Electric machinery and appliances (77.9% in 2008 as opposed to 2000) and Radio, TV and communications equipment and apparatus (95.6% in 2008 as opposed to 2000).

5 Conclusions

The settlement of the report between the economic efficiency and the work productivity has constituted and it constitutes a preoccupation of the economic theory and practice from the whole world, especially in the conditions of accentuation of the restrictive character of the resources, of the world crisis, of raw materials and energy, fact that determines the aim of getting, in the same time, both a high level of the work productivity and also a maximal economic efficiency, that would be translated by an increase in the competitiveness of the products both on the internal plan and also on the international plan.

Therefore, it is important for any national economy to know the evolution of such indices, because in the economic policies, which follow the growth of the competitiveness on the internal but also on the international market, there are some measures which have as their purpose the development or dissolution of some industries, branches or types of products. These measures are based on the identification of the favourable influences of the production factors on detailed levels according to the information referring to the modification in time and/or in space of the size of the productivity indices.

In conclusion, all the indices which showed the efficiency should be simple and easy to be understood in order to sustain the actions of a regular person. These indices have to contain the total effects and efforts of each action or analyzed economic process or should refer to the interpretation limits, when these are partial indices. Only in these circumstances we will be able to analyze on the whole an exact situation of the parties and we will be able to support the formation of an economic conception which should support the change of the cultural inclinations towards a resource economy in the future and which should provide a secure existence for the future generations.

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