Dynamics of Labor Productivity. Law of marginally decreasing Productivity

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Abstract

The dynamics of productivity, its growth, is an objective necessity of development and progress for each economic agent, and of the society as a whole. The productivity increase, generally, and especially of labor productivity, has a lawlike character because it reflects the causality reports between the efficiency of labor spending and the degree of economic development.

Key words: *productivity, labor, progress, factors, causes*

The main condition of the economic and social progress of a country is the dynamic character of productivity. The evolution of productivity is determined by indices, reporting the productivity level of the current period at the one on the base period, that is: $I_w = (W_1/W_0)\times 100$.

The dynamics of productivity(I_w), its growth index, is depending on the dynamics of production (I_Q) and the dynamics of the production factor (factors) (I_{FP}). The evolution of productivity can be: ***growth***, when $I_w>1$; ***stagnation***, when $I_w=1$ and ***reduction***, when $I_w<1$. Evidently, it can be understood that, in the first situation, the increase index of productivity surpasses the one for production factors, in the second situation, the respective indices are equal, and in the last case, the index of production is lesser than the index of production factors.

Labor productivity represents, also, the main expression form for efficiency at which labor is consumed, by it there can be appreciated the use degree for human resources, the social labor economy, the progress of a nation. Also, the categories of labor efficience and productivity express the ratio between effects (results) achieved and expenses (efforts) assumed by the effects. Therefore, often, the productivity of labor is defined as the economic efficiency of spending the labor force, in given conditions of production and

time. But, between the ***category labor productivity*** (as fruit of labor, the possibility of labor to create, during a timeframe, a volume of goods, to execute some works or to provide some services) and the ***category of economic efficiency*** there are also ***differences***,[1] such as:

a) economic efficiency covers a wider comprehension sphere than the productivity of labor;
b) economic efficiency is pursued in all domains of economic and social life, while labor productivity is determined, especially, in the sphere of material production;
c) economic efficiency uses numerous systems of indicators, while the productivity of labor is calculated directly.

The increase of labor productivity manifests itself in the ***time saving,*** this being the resource whose price increases the fastest in report to the other resources. The importance of time, in contemporary conditions, increases, because in a world full of events, which cannot be predicted in a determinist fashion, the economic science has accepted the uncertainty and risk, the intensity of time usage, the better integration of economic components in the natural ambiance. In this context, progress and property are on the side of those who better manage, on the long run, the production factors they are using and the time. The law of time economy, of increase the labor productivity, under the present conditions, manifests itself on the following advantages:

a) increase of production with the same volume of production factors and the savings of factors for the achievement of a production unit;
b) reduction of production costs and, on this basis, the increase of profit, of profitability (appropriation of an economic unit, of a product or a resource to bring profit, following encashments from a given period that are higher than expenses);
c) establishing prices and the possibility to reduce them;
d) increase of products competitiveness on the national and global market;
e) increasing the incomes of economic agents;
f) decrease of labor time and increase of free time;
g) improvement of the position and power of a country in the global economy.

[1] *Economie politică*, vol. I, Editura Porto-Franco, Galaţi, 1991, p. 332-333.

„the real economic progess of a people is the increase of the level of average labor productivity, the rise of the level of wealth "[2].

The law of labor productivity increase, and implicitly of time economy, in contemporary economics, overcomes the sphere of material production because, really, the finished product means information, services, experience, cerebral contribution.

Related to the dynamics of production factors productivity, economic thinking appreciates the existence of a ***law of decreasing marginal productivity,*** also known as the universal law of decreasing fertility (decreasing results) or the law of non-proportional results. This law was observed, first, in agriculture, and is linked to the interpretation of economic efficiency of investments in this branch. Later, a series of authors explain that this law has a wider area of existence, it refers to any activity domain.

The adepts of marginalist theory hold firm that from a given point on, additional capital investments in agriculture are not coming together with an increase, in the same measure, of the results and productivity of labor. Subsequently, investments become less profitable, and products, more expensive. Of course, these limitations are linked by the very boundaries of the knowledge level of agricultural sciences and technologies. Together with scientific and technical progess, the limits of agriculture outputs modify.

The law of decreasing marginal productivity manifests in a production process that calls for the use of more production factos, so if one of them increases, the others being constant, the volume for the additional production occurring after each increase of this factor (marginal productivity) tends at first to increase, then, passing a maximum point, always ends by diminishing. Depending on the specificity of the production sector and the possible combinations of production factors, usually, it can be ascertained that the productivity or output of the production factors is an issue of marginal productivity evolution. The laws of decreasing marginal productivity is valind under the following limits: a) it assumes that additional increasing size of the variable factor (most likey, labor) combined in the production process with the constant factor (the capital) always put into action the whole of this fixed factor; b) it acts only when additional investments are made for manufacturing equipment at the same level with previous investments; c) it acts when technique progresses.related to the output of variable factor, two situations can be found in practice:

[2] Mihail Manoilescu, *Forţele naţionale productive şi comerţul exterior. Teoria protecţionismului şi a schimbului internaţional,* Editura Ştiinţifică şi Enciclopedică, Bucureşti, 1986, p. 122, 314, 319.

1) even if increasing quantities from a variable factor are mixed with a given quantity form the fixed one, there is a situation when both marginal and average productivity decrease, so each additional unit of the variable factor contributes in a smaller measure to the increase of total production than the previous unit, the marginal and average productivities decrease;
2) for a certain period, the same marginal productivity holds, even if the use of variable capital increases, that is the situation of constant productivity and output.

The two situations are encounterend when we take into consideration the fact that one of the factors is fixed and production increases only by consecutively incrementing the other one. This is a restrictive situation and therefore is to be also taken into consideration, the evolution of both factors at the same time. This is where production functions come into action.

If all production factors lead to simultaneous and proportional increase of production, scale outputs are achieved, whichare occurring on long time periods (in the sense of large production series). If we assume that all factors are doubled, either the production is doubled and we have scale constant outputs, or if the production increases more than double, there are progressive outputs or if th production decreases below double, decreasing scale outputs.

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