IMPLICATIONS OF THE TIME FACTOR IN ECONOMIC DEVELOPMENT

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Abstract

Time is one of the essential coordinates that all activities report in all fields of economic-social life, the passage of time confirms or infirm the efficiency of phenomena, processes, taken decisions.

The action of time on the investment process is manifested in the connection with the length of design and execution of the objective, with the scheduling mode in time of expenditure of those funds, earlier entry into operation, achieving the designed technical-economic parameters and with the efficient lifetime.

The demand for the products of a company and the rentability constitutes the two motivational factors of investments. The essential role is of request.

Key words: *investments, time, the economic processes, economic development, economic efficiency*

1.Introduction

The investments of a company have as consequence the fact that they determine other companies to produce more, develop the own existing production capacities and offer of goods and services.

The effects of investments are amplified on the chains of relations between different elements of the economic system, becoming causes that determine demand for additional quantities by stimulation, from primary factors of production for which new attributes are needed. The proportion of the effects of investments in the economic system has as main premise the unit of reproduction phases, the existence of some technical and economic correlations, objectives between production, repartition, exchange, consumption.

An initial investment has a multiplier effect on economic activities, determines their revival by triggering favorable movements.

In the reproduction process, the investments fulfill the role of leverage in economic developments when directing the materialization processes of the technological progress in time and space in accordance with the earning interests of economic agents. The perfection of the factors of production process are ensured and on this base the ascendant evolution of economy.

The investments distribute and amplify their influence on the entire structure of the national economy through the stimulation effects, generating effects in the structure and capacity of economic growth factors as they have not only adding effect, but especially a stimulation effect though which the new capacities determine the design and performance of others, but also the elimination of those that suffer the moral wear and become incapable from the economic point of view.

2. The economic time

In the relationship time – investments – economic development, the efficient investments may act as a support of economic development, while the lack of investments or the performance of inefficient investments is manifested in destructive forms on the economic and social mechanisms.

The need of taking into consideration the influence of time is imposed by the difference that appears between the investment efforts and effects. There must be spent in a certain interval a work quantity destined to create production means that used in the following years to ensure the performance of the desired activities.

Time acts in the context of economic and financial phenomena and processes, both as source of certain measure and as influence factor.

Time is analyzed under double aspect in the relation time - investments – economic development: time considered as, economic resource, a resource that presupposes minimal and maximal duration that must be respected in the economic processes. Time is an economic resource because time represents use and saving rules like all the other resources of economy in relation to the limits of the human society; time considered as influence factor on the economic processes as they "invisibly" act on the effectiveness of each decision and activity of people. Time is an economic factor, it leads the multiplication, growth, valorization of certain effects or leads to the restriction, destruction or devaluation.

There is a positive or negative influence of time as resource and factor in the relationship time – investments – economic development.

It is necessary that time to have been essentially taken into consideration for the growth of investments, in all substantiation and choice calculations of the optimal decision. Time is considered the key to success, the main element of increasing efficiency because to the same investment effort, that certain variant performs a better relationship time – investments – economic development and will become more efficient.

The economic processes and phenomena consume time. Time factor frequently appears in the research of economic phenomena and processes. Time factor manifests as complex and alternative as calendar time, economic time and social time.

The calendar time is an integrator element of processes in nature not being storable, time exists objectively, infinite and irreversible.

Time, as space, represents an essential form of the material existence, as it cannot imagine the existence outside time, as it cannot imagine the existence outside space.

The economic processes and phenomena, similar to biological, natural, social, etc. ones, start and end at a time, consume time, so it is under the incidence of time factor. Time factor appears more frequently in the research of economic phenomena and processes.

Time factor is manifested in a complex and alternative mode, as it can be noticed in the analysis of economic development and economic growth process, like: calendar time, economic time and social time.

The calendar time is physical time, integrator element of processes in nature not being storable. It is emphasized the fact that time exists objectively, is infinite and irreversible under this aspect. This alternative of time makes necessary and possible the framing of processes, economic and noneconomic activities in the grading scale, their measurement in calendar time units.

Time is passing and still in a state of eternal present, fact that – as N. Georgescu-Roegen said – determined many philosophers to believe that *Time* is pure illusion.

The economic time expresses the dynamic character of economic processes. It is a general economic category that expresses the economic relations established between the members of the society regarding the distribution and use of time (as physical, natural reality and as natural resource) that the society disposes of on the whole, the companies and each member of society.

The economic time thus reflects the relationship regarding: a) the planned or spontaneous distribution of time on branches and sectors; b) the optimization of rhythms and the development conditions of economic activities and c) the acquiring mode of results using time.

The economic time marks duration and the succession of changes that intervene in the economic processes, by the three coordinates: past, present and future. Past, as a coordinate of the economic time is presented by the past work materialized in the production factors and in consumption goods; the past becomes a production force put into function in present and in the future. From here, the possibility of the "accumulation" of economic time and of elaboration of the economic forecasts depending on the three sequences of time and of contradictions between them. The passage of economic time reflects its "price". This "price" is greater as the changes that intervene in economic phenomena and processes are more consistent. The "paradox" of growth in the price goods parallel with the increase of work productivity is explained like this – namely many products are created in the unit of time, but an expensive unit of time.

Some economic processes are directly focused on the economic time. They varied, specifically reflects this fact, as it follows: the recovery period attached to the investments as expression of economic efficiency; the rotation speed of working capital, as expression of efficiency to use the trading capital; the wear, amortization and renewal of fixed means, as reflection of economic efficiency of the production-exploitation processes; the correlation between the reproduction of working force and the growth of work productivity; the report between the rhythm of economic growth and dynamic economic equilibrium; the implications of time factor in the external economic relations; the action of the general la of time economy, in the specific mode, in each social-economic arrangement.

3. The social time

The social time is an own instrument to measure economic time, reflecting the result of flow of the economic time. The social time is the work time socially necessary, in the context to measure the value of goods.

The social time has three components: a) the working time, in which the use values are created; b) *intermediary time*, in which are satisfied the physiological needs (food, rest, transport, etc.) and c) *free time*, entertaining. There is a contradictory connection between three components, reflects the law of time economy, according to which the essential scope of approach would be the performance of certain structural movements to free time.

The economy constitutes the environment in which the alternatives of time factor implication is especially revealed, by the interrelation degree and by the place and role that the economic time has as the *economic resource* and as *influence factor of the economic processes*.

In economy, the processes and activities specific to this field know an accentuated dynamism as a consequence of the scientific and technical progress that stimulates the economic growth, the economic and social development. In

time, the staggering of resources for different activities, obtaining effects, it is not identical, which impose comparisons, on the time scale, between values.

There results that in economy the passage of time is materialized, potentially, in different trajectories of economic growth, element that makes possible the quantification of influence of this factor.

Time is an economic resource as although it is infinite, it is in the same time irreversible, objective reality with special implications in economy. Thus, consuming time, the economic processes and phenomena must develop in certain limits of time. If the economic processes do not start in the corresponding moment, then the level of micro system generates losses, rough and impossible to recover, without an additional consumption of resources.

Time is an economic resource, because its economy, at a given level of productivity, determines obtaining a productivity increase, namely the net income. As a consequence, time presupposes the same rules of use and saving as all the other resources of economy: material, human, financial, etc.

Time also represents an economic factor, though the effects that they stimulate its passage, more precisely other phenomena amplified by time. Thus, the process that implies a "multiplication" of the economic effects and on the contrary their "devaluation" is the technical and scientific progress. Due to this, an hour of work laid in present cannot be compared with the one performed 10 years ago or with the one that is going to provide in 10 years. Due to the technical and scientific progress in the same time unit, but in different moments, higher or lower amounts of products, the situation that must be included in the economic calculations.

The theory and practice of investments reveal the variety of hypothesis in which time, especially the economic time have implications in the investment process. We will retain between these hypotheses: time as reflection of the "gestation" period of investments (concepts, formulation and substantiation of the investment opinions); b) time, as reflection of the proportion between engaged investments on varied execution periods (under one year; between 1-3 years; between 3-5 years; over 5 years); c) time, as reflection of the execution duration of an investment objective; d) time, as reflection of commissioning, on stages, of the investment objective; e) time, as reflection of assimilation period of the designed technical and economic parameters; f) time, as reflection of the recovery duration of the investment effort, imposed by the performance of an economic objective; g) time, as reflection of the operating-exploitation duration of economic or social objective as investment; h) time, as proper moment, to replace the used machinery and equipment.

The simple enumeration of the hypotheses in which the time factor has implications in the investment field, reveals the request to identify the frame and the manifestation modalities of influence and, of course, finding the quantification solutions.

The investment activity constitutes a process with productive character that develop in time and which presupposes a rational consumption of social work. The stages of this process are, in the same time, the stages of design work and the execution work. These stages are: the scientific research, prognostication, marketing and planning, design, notice and approval of technical and economical documentations, the performance of the investment and, in the end, commissioning to the designed technical and economic parameters. All develop under the incidence of time.

1. Science represents one the essential factors of material and spiritual progress of society. Today it appears more than ever as a motor force of economic and social progress, which revolutionizes and modifies the structural assembly of the production forces. The passage of time of scientific research is a necessity and it is dictated by the fact that the average duration of this stage is now still relatively high. The decrease of this duration would equate with a significant increase of the income, including from investments.

2. In order to enlarge the economic efficiency of investments, a special role is played by *the elaboration of technical and economic documentations based on prospecting the internal and external market, by marketing studies*.

The investors must take into account not only the current requests of the internal and external market, but especially, by future requests. They should establish the assortments, quality and parameters of goods that are going to be manufactured in the new productive objectives.

Taking into consideration the time factor with the help of marketing studies in investments, it is possible by considering the economic life of products. It is known that the commercial cycle, depending on time, has many phases: launching the product, rise, climax, saturation of market and decline. Making an analysis of the position of product in the cycle, there are obtained elements to determine the efficiency of investments, of the possibilities to recover the invested funds, their opportunities. The analysis avoids the constitution of production capacities destined to produce goods encountered in the aging, saturation or decline phase.

3. The design activity plays a determined role in sizing efforts and effects of an investment objective. Any delay in the projection of an investment objective involves the offset all future activities, determining the delay of commissioning of the investment objectives.

The projection influences the minimization of social work consumption and ensures by this the increase of economic and social results. In the stage of work design of the investment objectives, the immobilized funds do not represent large amounts, instead the number of implicated personnel (engineers, technicians, economists, etc.) is large.

The designers can adopt the most economic solutions through the technical and economic documentation, taking into account the current and perspective needs, for these to ensure a high efficiency of investments.

4. The influence of time factor on the economic efficiency of investments imposes that the preparation and organization of the process to perform investments to be made detailed so that to reduce the time necessary for the execution of works. The time necessary for the performance of investments influences the size of the investment effort and so, implicitly, the level of economic efficiency of the investment variants.

The performance of each investment presupposes the existence of two different moments: a) the consumption of material and money means in a certain interval; b) obtaining the intended effects in an ulterior period. Looked in their organic relationship, these two stages lead to the conclusion that together with the management of the investment resources, the insurance of a higher or lower degree of economic efficiency also depend on the size of the execution duration and the terms of start-up of the investment objectives. It is necessary to evaluate as exact as possible the influence of time factor on the size of investment expenses, for the solid substantiation of the efficiency of different design variants.

The technological specification of performing each activity is the one that the execution phase consumes time, takes place in a certain period of time, longer or shorter, depending on the influence of multiple factors. Regardless of the influence nature and size of different factors, the investment process consumes time, thus creates a difference between the time allocation of financial, material resources and the time to obtain the results.

This difference in time between the allocation of resources and obtaining results is the necessary objective, does not depend on the investor's will, of the decision organs. In the same time, the size of the difference, its reduction has a subjective nature, depend on the technical and organizational possibilities of the contractor, investor, suppliers of utilities, etc. This period can be shortened, but will never entirely disappear, though a corresponding cooperation of these factors, by a superior organization of production and work in the execution phase of investments.

Consequently, the economic nature of time influence on an execution period of an investment objective is of loosing certain economic effects, naturally assimilated to the expenses that generated them, being objective, real and measurable. In order to reduce these losses, there can be acted on time consumption assigned to the activity, consumption that can be reduced by a better organization of the activity, ensuring the necessary material conditions, the concentration of efforts on a reduced number of objectives, partial start-up and others.

5. Another aspect of time influence, in the investment field, regards the *effort-effect discrepancy*. This fact is determined by the circumstance that their performance consumes resources, but distributed in different moments, on a certain time period (lifetime of the economic process or phenomena).

The calculations of economic efficiency needs summing all resources, namely of the economic efforts, at a time, to construct indicators reflecting the volume of the effects obtained to one spent leu or, on the contrary, the spent value to perform one leu effects.

A normal question is asked in these conditions: are these amounts comparable in time (expenses, namely effects) to be directly summed? Obviously, the answer is definitely NO and is based on the implications of the scientific and technical progress on economy.

There can be obtained larger or smaller used values (they influence by work productivity) due to the technical progress, in the same time unit, but in different moments. In other words, in different moment, the same amount represents another mass of use values, aspect that has to be taken into account in the economic calculations. It results that time factor can also be reckoned from the nonequivalent point of view of some incomes or some expenses, registered in different moments, because the level of their efficiency varies with the passage of a certain number of years.

The technical progress influences the non-equivalent in time of the values and by their repercussions on the improvement of product quality and so on the people's demand, on the structure and quality of raw materials, etc.

Thus, both the investment expenses, for the same objective, but allocated in different time, and their obtained economic effects, also in different time, belong to certain different periods, characterized by different levels of work productivity, economic efficiency, product quality, are no comparable among them, although they are expressed in the same monetary unit. As a consequence it is necessary a certain technique to "mobilize", to synchronize both the economic expenses and effects in a certain time, in order to make them comparable and operable in the economic efficiency calculation.

This is why we say that to quantify the influence of time factor is necessary the recalculation, namely "the exhibition" of values in a unique time, then they are spaced in time to more than one year. Actually, time does not determine the mobilization as direct effect of its action (like in the case of immobilization), but only the non-comparability of values spaced to more than one year, for this reason we have to bring them to a unique time (so to "equate" them). In conclusion, the recalculation as influence direction of time refers both to resources (expenses), and to the economic effects which, if they are not spaced to more than one year, they must be equated in time (displayed), in order to be correctly used in the economic calculations. This equivalence (recalculation) is practically performed by using the update technique.

The dynamic evolution is a calculation system of certain value indicators, which takes into account the implications of time factor on the processes and phenomena that those indicators reflect. The dynamic evolution has relevance when the values, the parameters of the activities, the economic processes conduct an ongoing, an evolution in time and when the display or insurance of the comparability of data in a certain time is imposed.

The dynamic evaluation consists in the recalculation of certain values or string of values to establish how these values represent over a certain time, in a certain moment in the future or in the past. It responds to the desideratum to determine the value of money in time.

The dynamic evaluation imposed with predilection in the investment field due to the fact that, in appreciating the economic efficiency, the investment effort and the effects do not synchronize in time. The effort usually precedes the effect and determines it. Ensuring the comparability of data, in the analysis of investment projects, imposes their recalculation, their display depending on the unique reference time (taking the decision to invest, starting the investment works, start-up the objective or even its shutdown).

4.Conclusions

The discussed problem needs an answer to certain questions, namely: Which is the information area? What is the application of dynamic assessment method? What effects does it generate for the project analysis?

The information area is represented, on the one hand, by the static parameters of the activity or project (the value of the investment, the value of the production, the exploitation costs, profit, depreciation, etc.) as base and forecast of the value of these parameters in the considered time horizon. On the other hand, the parameters of dynamics, the values recalculated represent the base for the construction of the indicators of dynamics, appreciation of the activities or project efficiency.

The application of the dynamic method actually consists in applying the updated procedures (by composition or discounting) as applicable, to the parameters that characterize the process or project (the value of the investment, the project incomes and cost, profit or net flow of treasury) in time.

The effects of applying the method are varied and complex and they consist of: facilitating to determine some dynamic, value indicators, among which the most representative are the net current value, the coefficient of investment advantageousness, the internal rate of advantageousness, the updated recovery time, etc.; ensuring a complex analysis of investment economic efficiency by combining the dynamic indicators with the static indicators; increasing the degree of substantiation of project variants.

The dynamic evaluation of economic efficiency of investment projects can be directly performed (without update calculations) or by update techniques.

By direct evaluation of the influence of time factor on the economic efficiency of investments, the fructification potency of the performed or non-performed investment effort is taken into account, as a consequence of the development in time of the investment process and so the immobilization in the of the allocated funds. Mainly, the influence of time factor is generated and is in correlation with the *immobilized valued with the economic efficiency normative and with time* in which funds are immobilized.

The above listed factors can be aggregated in varied calculation models, being able to establish the following indicators: *the additional effort owed by the immobilization of investment funds in the construction period; the economic effect of reducing the execution period; average value of immobilizations; the value of losses for the society* (due to the immobilization of the investment funds in the construction period); *the economic yield; equivalent expenses, equivalent incomes; recovery speed of the investment funds*.

Large investment funds are consumed during the performance of works, which are gradually immobilized, until the startup of that fixed means. The volume of immobilizations becomes larges as the resources are dispersed on many objects that are found in the simultaneous execution. The immobilized investment funds, in a period, on the construction sites do not bring any useful effect, namely any production, any income. These fund immobilizations are equivalent to losses named in the literature "conventional losses". These loses take place in a normal period for the execution of the investment objective. "Real losses" appear besides the conventional losses when the effective construction period is larger than the normal period.

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