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Research of the existential processes of the economic system

Zigmas Lydeka *

Abstract. The paper is devoted to explanation of natural existential phenomena of the economic system, its existential forms, revelation of their essence and connection. In this paper, the natural and artificial processes of the economic system are described as well as its self-organisation and organisation of its existence. The existence process of the economic system is defined on the basis of the method of inductive logics by distinguishing certain states within the process; the essences of self-development, development and transformation of an economic system have been established and compared. No attempt is made in this paper to provide exhaustive, complete or undeniable theoretical generalizations, systemize all current economic and political events or draw on their possible or modification tendencies. Furthermore, there is no attempt made to support each theoretical conclusion with a concrete fact. Abstract theoretical statements are formulated on the basis of Lithuanian economy practice transformation of the as well as relying on similar processes, happening or having happened in other countries and described in the scientific literature.

Key Words: existential processes, economic system, self-development, development, transformation.

Introduction

In the last decade Economics and Management have confronted a rather complicated theoretical problem of how to explain the phenomena of movement and transformation since the former of objectives of the economic processes are ignored and their historical and spacial definition is in many cases unknown. D. North, when delivering a lecture on the occasion of his being awarded the Nobel Prize in 1993, declared that the failures of development economics are not accidental. The reason for them is very simple and can be explained by the lack of analytical knowledge about the evolution of economics in time. Neoclassical theory is an ordinary instrument incapable of analysing or creating such policies that would stimulate development. This theory provides understanding of how markets function but it does not explain how they emerge and develop. Neoclassicists focus their attention on technological development and finance of the human capital, but ignore both motivational structures existing in institutions and other phenomena determining economic development (North, 1994).

Transformational phenomenon is a unique case of an economic system existence which is distinguished through its own logics and contents. Its development has caused a chain of social and economic problems, the knowledge and explanation of which depends on the objectives, tasks and methods of their investigation. The economic research becomes of real value when it is supported by the methodology of systems and systematic analysis. The structure of the social matter is perceived as a hierarchy of inter-connected systems. Most frequently occurring concepts used in systematic research are 'system', 'structure', and 'organization.' Practically, scientists do their best to study and describe such objects under research as system, structure or organization.

Despite the fact that systematic analysis predominates in the world of science, engineering and practice, no generally acknowledged methodology for economic systems investigation, or unified research methods and means have been created. Individual researchers or their groups employ different methodological regulations, cognitive principles, and means of modelling economic reality on the whole or partially. Therefore, the end of the 20th century is facing not only vital sci-

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entific problems, such as economic, social, biological, linguistic, or any other system, but also the problem of how they are or might be investigated.

The investigators of the existential processes of an economic system tackle a vital methodological problem when handling theoretical and practical issues of transformation: a real confrontation occurs between the nature of the investigated object and the cognitive means (instruments) employed in the research. Although the researchers use diverse analytical means and methodological assumptions as a basis for formulating various concepts of economic existence and transformation, the comprehension of the named methodological problem is not fully perceived. This creates the ground for errors in economic policy and illusions of social consciousness.

In order to obtain comprehensive knowledge of the existence of an economic system and its temporal state, i.e. the transformation process, one should purposefully employ sufficiently diversified scientific knowledge. I would suppose that it is important not only to understand the constraints of application of separate elements of scientific knowledge but to unite philosophical and methodological fundamentals of different sciences into a unified whole. These fundamentals should help to acquire knowledge about the regularities of the transformation of complex social systems and the unique peculiarities of a certain transformation.

The subject matter of research undertaken in this paper is to model existential processes of economic system.

The major objectives of the paper are:

- to compare economic systems according to their universal qualitative features;
- to define the existence of an economic system pointing out certain states within it;
- to reveal the twofoldedness of naturalness and artificiality of an economic system;
- to analyse the self-organisation and organisation of an economic system;
- to establish and compare the essences of processes of self-development, development and transformation of an economic system.

The main research methods involve logical abstraction that includes and combines generalisation of theoretical statements of economics; system analysis, synthesis, idealisation and modelling of existential processes of economic systems.

The axis of the research methodology is the concept of universality of quality definition and existential processes of dynamic economic systems. The formulation of the concept was influenced by works devoted to nonlinear studies by V.Arnold, E.Kniazieva, N.Kondratyev, S.Kurdumov, E.Laszlo, J.Osipov, I.Prigogine, I.Stengers and I.Shurgalina.

The twofoldedness of the nature and the existential forms of an economic system

The internal mechanism of the existence of an economic system that guarantees the interaction of economic phenomena is twofolded by its nature. The existence of a system can be expressed in terms of various dichotomies such as: objectivity - subjectivity; naturalness - artificiality; self-organisation - organisation; accidentality - regularity; chaos - order; appearance - disappearance; complexity - simplicity; closedness - openness; statics - dynamics; stability - variability; freedom - compulsion; influence of personalities - influence of political groups; etc.

The twofoldedness of an economic system existence has an objective and subjective foundation: on the one hand, the existence is determined by regularities of functioning of the major complex systems; on the other hand, their dynamics is affected by the subjective factor, its diverse forms of manifestation, including the intellect that can foresee the variants of system development and turn it in the desirable direction. People can recognise processes and influence them. People can create new life styles and alternative behaviour patterns.

I would assume that some kinds of twofoldedness of existence of an economic system should be considered initial ones transferring essential natural features onto others. The comprehension of the natural twofoldedness is an important step in modelling derivative, transitional pe-

riods. *To natural twofoldedness could be ascribed naturalness - artificiality, and self-organisation - organisation.*

The economic system is determined by the way of its self-organisation on the whole (Principy, 1993; Osipov, 1995). *Self-organisation of an economic system is a universal and general principle for its emergence and existence that does not depend on time and place (in place and time, only the form and range, the acknowledgement and negation, the limitation and encouragement of self-organisation may differ). Self-organisation could be treated as a natural (innate, genetically inherited) quality of the existence of an economic system, the universal form of movement of social material.* The universal features (subjects, environment, and motivation for activity performance) of quality definition of the economic system could be regarded as innate natural phenomena of self-organisation of that system. They are peculiar to any economic system although they differ in concrete forms of manifestation.

A concrete economic system is noted for its exact way of *external organisation*, i.e., a concrete economic system has its own specific features. *The organisation of the economic system depends on time and place, on goals of subjects participating in it and on their competence.* In other words, different economic systems are noted for different ways of conscious organisation. *Organisation could be regarded as a quality consciously ascribed to the economic system, and improvement of the universal form of movement of the matter.* If we want to understand the peculiarities of this economic system or other, we have to identify its structure and special ways of organisation. The improvement of the universal features (subjects, environment, motivation for activity performance and improvement of concrete forms of its manifestation) of quality definition of the economic system could be regarded as artificial phenomena of this system's organization.

The principles of organisational existence of an economic system should be following:

- the main criterion for distinguishing organisation and self-organisation is the origin of processes taking place, i.e., their naturalness or artificiality. Each economic system is noted for the ratio of naturalness and artificiality;
- as the economic system is becoming more complex, its self-organisation and naturalness become more intertwined with conscious external organisation and artificiality. While self-organisation guarantees continuity of economic life (and, at the same time, existence of the humankind), organisation ensures its progress, changeability and contradictoriness;
- with regard to origin, functioning and possible transformations of the economic system, the following organisational forms of its existence should be specified:
 - a) *economic self-organisation* that describes economy as a spontaneously developing, self-renewing, continuous phenomenon;
 - b) *economic organisation* that introduces economy as an externally developed artificial phenomenon;
 - c) *economic disorganisation* that expresses partial or complete destruction of organisation of the system and describes economy as an externally improved and modified artificial phenomenon;
 - d) *economic reorganisation* that involves partial or complete construction of organisation of the system and describes economy as an externally renewed artificial phenomenon.

The states of movement of an economic system that are limited by time and space could be characterised by existence (behaviour) of that system. Self-development, development and transformation should be regarded as universal states of an economic system existence. These forms should not be treated as independent stages of continuous linear development only. First of all, they are phenomena having unlinear development character.

The forms of economic existence are intertwined in time and space and are, also, interdependent. Due to this reason economic systems become increasingly complex and open. It is clear that the laws and mechanisms of complex systems existence are not identical to those of ordinary systems. They do not necessarily have to be more complex. I would assume that the laws and mechanisms of existence of complex economic systems are principally different from those of

ordinary systems. The co-existence of existential forms is most evident in the event of transformation, therefore the economy of the transitional period functions in the regime of bifurcation, indetermination and disorder. To overcome them is the main task for the subjects of the transformation process.

The dynamics of systems undergoing transformation can not be fully perceived by applying the knowledge that is sufficient when analysing ordinary systems. I would presume that the economic systems of developed countries are less complex than those of post-socialist countries experiencing system transformation. This statement justifies once more the limitedness of simulating economic practice.

Unlinear development means that one single correct variant of strategy and tactics of transitional period is impossible. Their alternatives that are conditioned by the double nature (bifurcation) of the macrotrajectory of movement are possible (Arnold, 1990; Laszlo, 1991). Thus, there emerges the problem of alternative systemic reorganisation, inter-comparison of strategies and optimal choice.

Self-development of the economic system is characterised as a form of spontaneous movement according to its innate macrotrajectory employing and increasing internal and external possibilities (Schumpeter, 1991; Seers, 1969; Todaro, 1994; Kondratjev, 1989; Majeuskij, 1994). Thus, the main feature of economic system development is the global tendency of movement that corresponds to the term of genetic vector used by modern evolutionists. Picture 1 shows different macrotrajectories of economic system development (they are illustrated by lines A, B, and C marked with arrows). Due to the simplicity of explanation and graphical vividness, each system is noted for possible quantitative changes in the same interval (the changes are illustrated by parallel broken lines on both sides of the macrodirection). The movement macrotrajectory (A) illustrates the most progressive economic system (market economy, for instance). It is characterised by the outstanding potential range of economic progress (illustrated by segment (a_m)) that can be reached in the shortest time (illustrated by segment (a_1)). In the meantime, macrotrajectory (B) illustrates another, let us say, command economy, with lower potential range of economic progress (illustrated by segment (b_m)) that can be reached over a longer period of time (illustrated by segment (b_1)). The least progressive economic system, for example, the traditional economy, is illustrated by macrotrajectory (C). It is characterised by the lowest range of economic progress (illustrated by segment (c_m)) that can be reached over the longest period of time (illustrated by segment (c_1)).

As it can be seen from the description given above, the movement macrotrajectories of different systems indicate uneven potential ranges of economic progress that can be achieved over different periods of time. Quality features that define the nature of movement macrotrajectory in each economic system encode the quantitative ranges and speed of self-development.

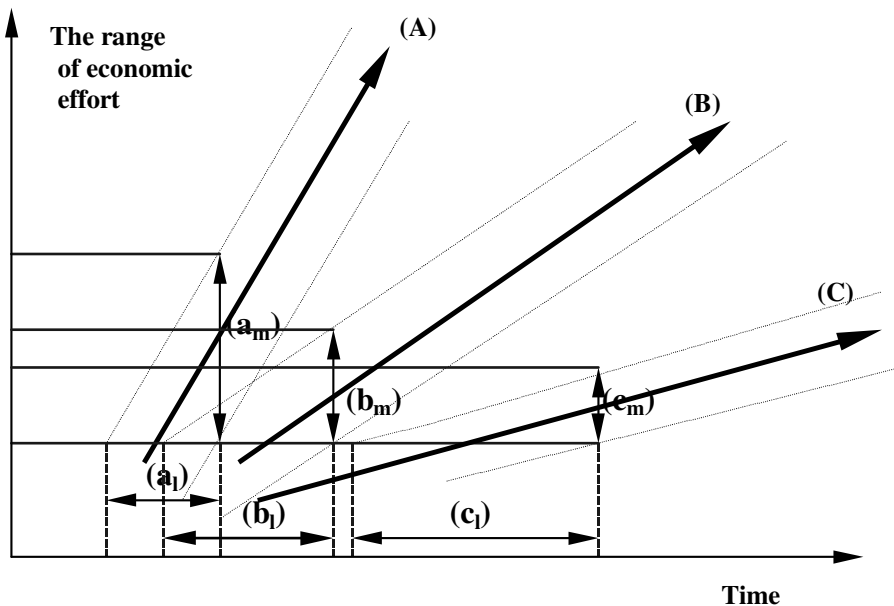
The development of the economic system means its compulsory movement towards the natural macrotrajectory of development supplying it with additional external possibilities (Kvedaravicius, 1997). Two circumstances determine the necessity and range of development actions:

1. The distribution of the economic power among its three subjects - consumer, manufacturer and state (government). Each economic system has its own particular scheme of economic power distribution as well as the scale of development.

2. Critical situations in the economic system's existence which can be either objectively conditioned (as a result of self-development) and imaginary (as a consequence and cause of governmental actions). The long-term negative consequences of critical situations justify the necessity and scale of development.

If self-development is a natural internal determination of a system, then development is an externally imposed scheme of behaviour. The development of the economic system is conditioned by the influence of its external macroenvironment on the economic subjects as elements of the system. The development actions are performed by macroenvironmental institutions that occupy an external position in regard to the economic subjects. When carrying out the steps of development the macroenvironmental institutions pursue their goals and regard the elements of the economic system as means for achieving them. If the change of development is not purposeful,

then the self-development may lose the macrotrajectory characteristic of it. The changes conditioned by development may acquire the nature of accidental (or even catastrophic) processes.



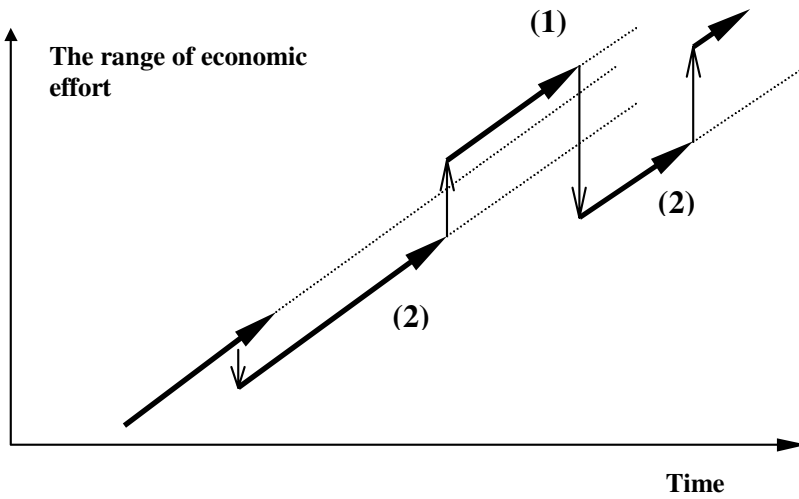
Picture 1. Graphical Modelling of Self-Development of the Economic System.

The development of the system by providing external possibilities for its change accounts for its partial quantitative changes which can be perceived either as economic growth or downfall. In other words, the changes in governmental economic policy can be graphically illustrated by certain movements of the macrotrajectory without change in its direction. In Picture 2 this is shown by movement of the macrotrajectory up-line (see direction (1)) due to growth, or down-line (see direction (2)) due to unsuccessful step in development the consequence of which is decrease in scale of economic progress, or, simply downfall. After some time unsuccessful development can be corrected by implementing a calculated successful development program. The implementation of such program could be shown as movement up-line. The macrotrajectory here does not change throughout the development: the newly shown directions (1) and (2) are parallel to the initial macrotrajectory. Each step of development might be mean thought to different qualitative rate of economic progress growth. This is where the difference between development and self-development lies - the latter conditions an even range of economic progress and its quantitative rate (under the same trajectory, certainly).

Transformation of the economic system can be characterised as the replacement of the natural macrotrajectory caused by quantitative and qualitative changes that disturb the quality definition and integrity of the system. When self-development and development of the economic system reach their critical level, the systemic transformation occurs, which means that a transfer from one historical economic system to another has taken place.

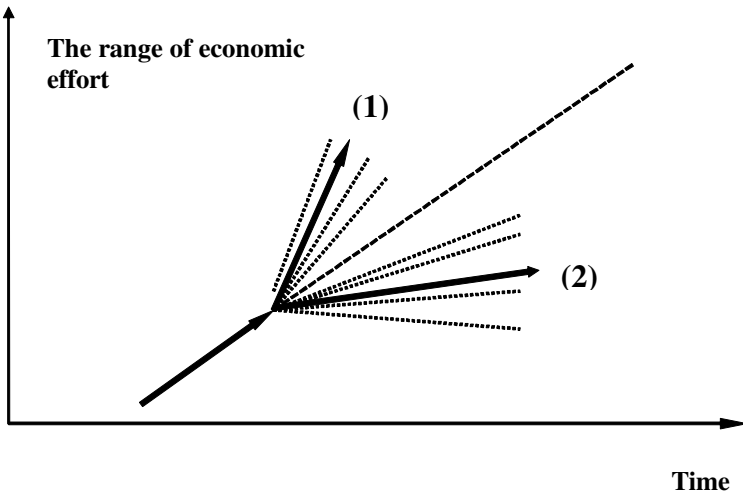
Systemic transformation marks the end of existence of one economic system and the beginning of a new one. Transformation should not be regarded as a single act. The socio-economic content of transformation is:

- the fact of changeability of economic systems;
- the transformation itself or the transformation period;
- the mechanism of change of form.



Picture 2. Graphical Modelling of the Economic System Development.

During the transformation the macrotrajectory undergoes a change. Picture 3 illustrates two possible variants of transformation: direction up-line (1) when the economic system becomes more progressive (in this case a larger potential range of economic progress will be ensured and it can be achieved withing a shorter period of time); direction down-line (2) when the economic system regresses (in this case a smaller potential range of economic progress may occur and it can be achieved withing a longer period of time).



Picture 3. Graphical Modelling of the Economic System Development.

It is obvious that the rise of the new macrotrajectory that brings forth a certain new potential for the economic progress is not an ordinary single act. A new macrotrajectory may come into existence after a long search, experimentation and errors. This kind of search involves substantial economic and social costs. Alternatives for macrotrajectories (1) and (2) are possible. In Picture 3

they are marked by dotted lines. The search for these macrotrajectories can be treated as a partial moment of bifurcation process.

The beginning or end of each economic system can be characterised by the critical limit (catastrophe) of systemic transformation. *Between the critical levels, the system retains its quality definition and stability, whereas overstepping them the system falls into the regime of transformation.* A hypothesis could be drawn that complex systems, with regard to time and space, possess certain critical levels the information about which might help to reveal the mechanisms of system destabilisation. I would suppose that, *in their development, economic systems approach the critical limit and enter the bifurcation regime quite invisibly and unexpectedly.* The reason for this is *that limit values of parameters in complex socio-economic systems are usually unknown and theoretically even unpredictable.*

The closer the economic system approaches to the limit of its systemic transformation, the greater is the possibility for it to lose its stability. Besides, the system, having approached a critical limit, becomes more susceptible and sensitive to external influence. And, on the contrary, the farther the system is from the critical limits of existence, the more stable and less susceptible to changes of self-development conditions and external influence it becomes.

The system that has approached a critical level of self-development may not withstand insignificant external or sometimes even internal influence. The latter, due to cumulative effect and because of meager possibilities of adaptation, can instantly destabilise the system and initiate the collapse.

The modern science acknowledges that unevenness, cyclic recurrence, critical moments of existence and their overcoming are considered universal forms of organisation and movement of the substance. This is characteristic both of the elementary particles and the social organisation of the substance. *The analysis of the role of critical moments in the economic systems existence helps to reveal the peculiarities of cyclic recurrence and change in the movement of social substance.* In its development humankind has faced numerous critical moments and has managed, one way or another, to overcome them.

It would be possible to distinguish the following forms of critical moments: critical situation, crisis and catastrophe. Critical moments in the economic movement are the consequences of self-organisation and organisation. *Theoretically in each economic system the critical level of self-organisation can be defined and its damage might mean collapse of the system.* This would happen because consciously organised artificial processes would take over the system. *I would assume that each economic system has a certain proportional ratio of self-organisation and organisation and its disturbance would mean crisis or systemic transformation.* This ratio is unequalized equilibrium of organisation and self-organisation.

In planned economy external organisation predominates. As long as the volume of the external organisation exceeds the volume of self-organisation, this kind of economy tends to remain the command economy. Whereas in the market economy self-organisation apparently prevails. In principle, after the ratio of self-organisation and organisation that is characteristic of the market economy has been damaged, the systemic transformation should occur.

Conclusions

The solution of the tasks raised are justified by these general conclusions:

1. In its nature, the mechanism of the existence of the economic system that ensures interaction between the economic phenomena is twofolded. Each economic system has a certain ratio of twofolded phenomena. The damage of this ratio would mean the change in the state of existence or even change of the economic system type. The shift of the system from one side (limit) of the twofoldedness to the other causes the rise of contradictions, critical moments, critical limits, and regimes of bifurcation. They destroy the old system is quality and compel the subjects to consolidate their internal and external possibilities, to perform the necessary organizational steps and create a new quality. The twofoldedness of the system is characterised by the following dual processes:

- **naturalness – artificiality.** With regard to the system, naturalness and artificiality can be analysed as processes of revelation of the world existential forms. It is not easy to give priority to either type: natural and artificial processes manifest themselves, to a certain extent, in each economic system. It is especially problematic to distinguish naturalness from artificiality during the change of economic systems. To understand the economic system existence the following theoretical conclusions might be handy: 1) natural processes are infinite; their beginning and end are hard to define; 2) natural processes are inevitably supplemented by artificial ones, they intertwine; 3) the beginning and end of artificial processes should be tied to willful actions of subjects; 4) the processes of movement of the substance, the beginning and end of which is hard to trace, should be called naturally artificial (if the naturalness element dominates), or artificially natural (if the artificiality element dominates); 5) in the movement of the substance, artificial processes become increasingly dominating which, causes certain contradictions and critical moments that arise due to their incompatibility with the natural origin of movement;
- **self-organization – organization.** The wider the economic process is, the longer time period is needed to analyse it, the more difficult it is to trace its naturalness (i.e., beginning and end); the more it is characterized by self-organization. The economic system, in its nature, is a phenomenon of natural self-organization, the universal form of existence of the social substance. If it is possible to register (or foresee) the beginning or end of the economic process, then the organizational phenomenon will be its characteristic. Organization could be treated as a feature consciously ascribed to the economic system, the improvement of the universal form of existence of the social substance. The organizational forms of the existence of an economic system are as follows: economic self-organization; economic organization, disorganization and reorganization.

2. The economic system existence is a combination and change of the universal states of its movement. Their combination means that, within certain time and space, the economic system can be characterized by a variety of forms (existence is a multi-folded phenomenon, e.g., self-development is inevitably combined with development and partial transformation). In the meantime, the change of existential forms means that: 1) having fully exhausted the internal and external possibilities of its existence, the economic system rejects its current movement trajectory; 2) the previous preconditions for strive for equilibrium are disturbed; 3) old conservative structures are destroyed as they do not comply with the changed internal and external conditions; 4) the potential of further development is freed; 5) the freed potential creates preconditions for the new state of equilibrium; 6) the new macrotrajectory is chosen and, thus, other qualitatively new premises for strive of equilibrium are created. *The universal stages of an economic system existence are as follows:*

- **self-development of the economic system.** This is an innate movement of the system along the dominating macrotrajectory by employing and increasing internal and external possibilities;
- **development of the economic system.** This is a compulsory movement towards the dominating macrotrajectory of development by supplying it with additional external possibilities;
- **transformation of the economic system.** This is the replacement of the natural macrotrajectory caused by quantitative and qualitative changes that disturb the quality definition and integrity of the system. When the self-development and development of the economic system reach their critical level, the systemic transformation occurs.

3. During the transition period from the command economy to the market economy the process of transformation of the economic system occurs: the old economic system is destroying itself (or is destroyed) and the new one is creating itself (or is created). Thus, the process of transformation of development models of the economic systems of particular countries is taking place.

Transformation should not be regarded as a single act. Its socio-economic content includes: the fact of the change of forms of economic systems; the transformation itself; the mechanism of the change of form. *The essential problems of the transition period are three intertwined partial transformations:*

- ***the transformation of the new macrotrajectory.*** It is directly connected with the purposefulness of the socio-economic processes during the transformation period and the rate of the new system formation. *The rise of the new macrotrajectory is not a temporary single act.* Due to the phenomenon of bifurcation, alternative macrotrajectories that possess a different range of economic progress become possible. *The existence of alternative macrotrajectories is determined by:* 1) a possible variety of economic programs offered by different groups of people; 2) the implementation of each program conditions certain short-term or long-term results that can be criticised; 3) different attitudes towards the rate of reforms, costs and determination of citizens. This explains differences of the reforms that are introduced. Some of them are called ‘the shock therapy’ and others are ‘socially oriented’, etc.
- ***self-formation of the macroeconomic environment.*** The distinctive features of the period of economic system transformation are contradictoriness, indefiniteness and chaos. It should be noted that the transformation period ought to be finalized with some kind of established economic order (in the opposite case, we will have to acknowledge the involution of the whole civilization or of its part). If certain public institutions that would help to establish some order in the economic chaos are not organized, then the transformation period is likely to last long enough. Thus, the formation of the macroenvironment depends, first of all, on the consolidated effort of the population and the governmental institutions;
- ***subject transformation.*** In fact, a new economic system emerges together with the economic subjects, as a result of their thinking and acting. Without the subject of a certain quality there is no system of that quality. In other words, *a law of quality correspondence between the economic system and its subjects can be formulated.* The subject is the spokesman and executor of the economic system, whereas the economic system is the way and mechanism of the subject existence. One does not exist without the other. On the other hand, the economic subject performs a special role of the intermediary between the economic system and its environment, the society and culture. Namely, *the economic subjects, at the same time performing the function of active elements of the economic system and sociocultural environment, ensure the correspondence between the system and the quality of its environment.* The environment of the market economy is not concerned with the external institutions that affect the subjects one. It also, implies rules of the game, certain type of behaviour, relations and connections.

4. *The uniqueness of the development of transformation lies in the fact that its success depends on the activeness of its subjects.* The external premises of the transformation period were equally favourable for individual persons and for their groups to become subjects of the economic development. This is a potential possibility the benefit of which depends on the skills of individual persons or their groups, their aspirations and efforts taken. Active subjects, taking advantage of the opportunity offered by the transformation period, take the risk and responsibility for the perspectives the country development. *The economic activeness will be determined not by the existence of the conditions for the economic activity (e.g., property) but by understanding the application of those conditions.* The objective, as much as subjective, reasons account for ***business persons*** becoming the vital subjects of the country’s economy development.

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