SYSTEMIC VIEW ON THE PROBLEMS OF SUSTAINABILITY OF THE ECONOMIC SYSTEMS AND THE SPECIFICITY OF PERFORMANCE EVALUATION OF PUBLIC CONTROL IN CONTEMPORARY RUSSIA

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ABSTRACT

The development of the approaches based on the theory of systems and the institutionalism, explaining the mechanisms for ensuring the sustainability of the economic systems at various levels, is analyzed in this article. It is shown that the key contribution to the development of the system sustainability problems, beginning with work on tectology and ending with a synergetic direction was made by the representatives of the system approach. At the same time, the adequate explanation of the control mechanisms for the economic systems sustainability is objectively hampered by the difficulties in interpreting the categorical apparatus of systems and synergetic theory. Therefore, a parallel use of the other methodological approaches, in particular, the institutional theory method, seems to be a promising direction for describing the processes taking place in the economic systems in the course of their interaction with the negative factors of the external environment.

Keywords: Control, Sustainability, Economic System, System Approach, Synergetics, Institutionalism.

INTRODUCTION

In accordance with the mathematical definition of sustainability, the trajectory is called sustainable if for arbitrarily small limiting deviation determining the sustainability corridor one can indicate such restrictions for perturbations under which the system does not leave this corridor (Bobylev et al., 2015). In other words, speaking of sustainability, it is necessary to determine-the invariance of which properties of the economic system are significant and to what extent. Moreover, it is necessary to characterize the perturbation, concerning which the economic system will be sustainable. Obviously, more the significant of the external impact, less is the system is able to maintain the original parameters. Therefore, in the scientific literature, new methods of assessing the sustainability of economic systems are investigated both in general (Chechushkov et al., 2018) and in certain spheres and sectors (Chernikova et al., 2018; Ciambriello & Dimitri, 2015; Strielkowski & Astachova, 2017).

METHODS

Theoretical and Methodological Approaches to the Problems of Control of the Economic Systems Sustainability

The sustainability of the economic systems can be considered at different levels of the economic relations. At the macro level, the sustainability issues are directly related to ensuring the macroeconomic equilibrium, with two main types of sustainability-the adaptive sustainability and the sustainability of substitution. The first type is based on the mechanism of compensation of the internal or external disturbing influences, while the second one implies the possibility for the economic system to evade completely the effect of the disturbing factors and not to have appropriate compensatory mechanisms. The sustainability at the meso-level is determined by the viability of the system, taking into account the specifics of this region. Economic sustainability at the micro level is manifested in the sustainability of the functioning parameters of certain economic agents. For example, a fundamental condition for the successful operation of any enterprise is the provision of a sustainable financial state (Abrashkin et al., 2017).

In terms of this article, taking into account the importance of the managerial aspect, it seems expedient to pay special attention to the existing theoretical and methodological approaches that reveal the mechanisms for ensuring the sustainability of the economic systems. The development of this problem is closely connected with the evolution of the methodological directions of the system approach.

One of the first issues of sustainability in the context of a systemic worldview was explored in the early twentieth by Bogdanov in the course of development of the tectology "*General Organizational Science*" (Bogdanov, 1989). In this regard, the conclusion that the sustainability of the equilibrium of all organizational forms is determined by the sustainability of the weakest link is extremely relevant for the modern times as well. The modern system of banking regulation and supervision is essentially based on this thesis-the timely removal of financially unsustainable credit institutions from the market is the key to the sustainable functioning of the banking system as a whole.

The significant stage in the development of the system approach is the scientific papers of Bertalanffy, who is considered to be a founder of the general theory of systems (Bertalanffy, 1969).

Further development of the system approach and the understanding of the regularities of ensuring the system's sustainability are associated with cybernetics and homeostatic. Being a science studying the control systems, cybernetics in matters of sustainable development focuses on direct and reverse communications. If the direct communication is the direct influence of the control subject on the object, then the feedback is the response of the object to the managerial impact (Wiener, 1958). Note that the special attention is paid to the concept of feedback in the homeostatic approach, because it allows us to explain the internal mechanisms for ensuring the sustainability of the systems. The homeostasis is understood as the self-regulation, the ability of an open system to maintain the constancy of its internal state through coordinated reactions aimed at maintaining a dynamic equilibrium (Savello, 2011).

A classic example of negative feedback is the mechanism of market pricing. So, with insufficient volume of production of goods, there is an increase in prices, which, in turn, is an economic stimulus to expand the production and, in the future, leads to lower price levels. The model described is also true for the opposite direction. Thus, the traditional mechanism of interaction between supply and demand reflects the mechanism for the achievement of the

homeostasis through the action of negative feedbacks. The positive feedback, on the contrary, is expressed in an increase in the change in the variable and therefore does not lead to the homeostasis, and therefore, has a destabilizing effect.

The conclusions of homeostatic indicate that the sustainable systems need the combinations of both types of feedback.

At the same time it should be noted that within the framework of traditional dialectical terminology, the changes of the first type are called evolutionary, the changes of the second type are called revolutionary. In this connection, one cannot but agree with the point of view of Savello and Andreev: "*The homeostasis in social and economic systems has its own dialectic. On the one hand, it must ensure its equilibrium state at a certain historical moment of the development of the society, on the other hand, it must show the flexibility (sensitivity) to the ripened changes in the socio-economic structure of society, proceeding from the trends of its progressive development*" (Savello, 2011).

Further, a significant contribution to the development of the methodological aspects of the sustainability of economic systems was brought by the new direction of interdisciplinary research, called synergetics.

Synergetics "*began*" in 1973 with the report "*Cooperative phenomena in highly nonequilibrium and nonphysical systems*" made by Stuttgart professor Haken, who studied lasers, which combine the natural and the artificial, the ordered and the disordered, the equilibrium and the non-equilibrium, the quantum and the classical. Haken discovered that the cooperative phenomena were observed in a variety of systems: phase transitions, hydrodynamic unsteadiness, the dynamics of populations, the autocatalytic reactions were the examples of the synergetic effects. Moreover, when passing from an unordered state to the order, all these systems behaved in a similar manner (Haken, 1985: 1980).

In the most general form, synergetics is an interdisciplinary science that studies the general patterns of phenomena and processes in the complex non-equilibrium systems (physical, chemical, biological, environmental, social and other) on the basis of their inherent principles of self-organization. At the same time, the sustainability of the systems functioning, being organically intertwined in the processes of self-organization is one of the most significant objects of research in synergetics. It should be clarified that the self-organization in synergetics differs significantly from the cybernetic understanding. In cybernetics, it is customarily understood as the stabilization and the preservation of a given order or structure, while in synergetics, the self-organization is connected with all processes of self-construction, self-regulation and self-reproduction of the systems of various nature (Klimontovich, 1986).

In other words, the self-organization is the process leading to the formation of the new structures. Therefore, synergetics relies more on the principle of positive feedback, when the changes, occurring in the system, are not suppressed and corrected, but, on the contrary, are gradually accumulated and result in the destruction of the old structure and the emergence of a new one.

RESULTS

The Specificity of Performance Evaluation of Public Control in Contemporary Russia

From the point of view of the problems of control over the sustainability of the economic systems, it is important to take into account a number of fundamental aspects.

First, the development of an open economic system, in the long run, is accomplished through the periodic change of sustainable and unsustainable conditions.

Second, the sustainability or unsustainability of the system is determined by the type of feedbacks (positive or negative), prevailing in the system.

Third, during the period of the unsustainable state of the system, the significance of the effect of damping of the fluctuations made on the existing adaptive mechanisms, increases.

Fourth, the choice of the desired trajectory of the system development after passing through the bifurcation point is possible based on the correction of the interaction between the systemic elements in the process of creation of a new dissipative structure oriented to the given characteristics.

It is of fundamental importance to clarify that unsustainable conditions are inevitable. But the dynamics of the process, the periodicity and the frequency of crisis situations can be influenced. Simultaneously, the synergistic mechanism to describe the processes of self-organization of the economic systems illustrates the complexity of the external managerial influences aimed at ensuring the sustainability of the systems functioning.

The attempts to synthesize the methodology of synergetics and institutionalism have recently become increasingly popular (Vakhrushev, 2004: 2010; Terentyev, 2012). Thus, Lisichkina combines the synergistic and institutional approaches to create a reliable and adequate economic model of investment, while directly affecting the sustainability of the economic systems (Lisichkina, 2009). In the context of a deeper understanding of the totality of cause-effect relationships in economic phenomena, the hypothesis of Islamutdinov, saying that "*the economic evolution has a clear focus on reducing the entropy of both the economy as a whole and the individual economic actors, and the institutional environment only contributes to the natural processes of self-organization and the reduction of entropy*", is very productive in the framework of the methodological synthesis of synergetics and institutionalism. "*Moreover, the evolution of the economic institutions also goes in the direction of increasing their entropic efficiency*" (Islamutdinov, 2010).

DISCUSSION

The Sustainability of the Economic Systems Based on the Methodological Synthesis of Synergetics and Institutionalism

In terms of this article the attention should be paid to two key aspects, directly related to the issues of deeper understanding of the sustainability of the economic systems on the basis of the methodological synthesis of the system approach, synergetics and institutional theory.

Thus, the sustainability of the economic system, its ability to compensate for the internal and external fluctuations and to their adaptation is determined by the sustainability of the norms of economic behavior of the specific individuals and the groups of them. The combination and harmonization of personal and public economic interests are carried out through the institutions-the norms and the rules of behavior, and the institutes-as the formally constrained behavioral interactions. Within the framework of the system approach, it is due to the totality of the institutions and institutes (in case of their adequacy) that the interaction between the economic entities within the system leads to the generation of a much larger result compared to the cases when the subjects act independently.

This effect is called synergetic. Moreover, often the understanding of the synergetic effect is directly related to the sustainability of the economic systems.

The first aspect of understanding of the sustainability of the economic systems from the standpoint of institutional theory is related to the fact that the very ordering of the economic relations through the availability of a set of different norms leads to the equilibrium and sustainability of the economic system, understood as previously described, through its (system) ability to restore the initial or close to the initial mode of functioning under the external influence.

The second aspect is related to the ability of the institutions, as the regulators of the economic behavior, to change over time. In this case, we are talking about the concept of institutional inertia-which, in turn, is a particular case of inertia of economic matter as a whole. The inertia of economic development is often called an effect of its historical conditionality (path-dependency) (Dementiev, 2005).

In terms of the ability of an object to maintain its own state, the inertia is fairly close to sustainability. Moreover, it is the inertia (in this aspect of consideration-the institutional inertia) that largely explains the reasons for the sustainability of the systems-the economic relations, being in some way ordered through a system of formal and informal institutions, are not able to change instantly. The external fluctuations that change the environment will not immediately lead to the transformation of the institutions, since the behavior of the economic agents is routine for the most part. The routines reduce the information and the monitoring costs for the enterprises, prevent the opportunism, form the continuity and predictability in the process of everyday life arrangement in the households and individuals and determine directly the priorities in making the economic decisions (Oleynik, 2005). Therefore, in the process of sustainability control in a particular economic system, it is necessary to take into account the degree of sustainability of the set of formal and informal norms governing its functioning, as well as the number of elements, the complexity of the links and the ways of institutional interaction between them.

CONCLUSION

Thus, the sustainability of the economic systems is expressed in their ability to withstand the changes in the external and internal environment, which manifests itself in the fulfillment of the system's basic functions and the preservation of the basic structure. The explanation of the mechanism for ensuring the sustainability appears to be quite productive on the basis of the methodological synthesis of synergetics and institutionalism. The synergistic approach makes it possible to describe the complex mechanism for the transition of an economic system from a sustainable to an unsustainable state as a process of self-organization of a given system due to its interaction with the external environment, through the identification of the interaction between positive and negative feedbacks as well. However, this creates an objective difficulty related to an adequate interpretation of the synergetic conclusions in relation to a particular economic system. In this regard, the reliance on the methodology of institutionalism, aimed at identifying the sustainable rules of behavior for the economic agents, makes it possible to discover the internal mechanisms for the self-organization processes of the economic systems and to explain the nature of their sustainable or unsustainable functioning. This is due to the fact that the sustainability of the economic systems is based on the sustainability of the institutions and the institutional inertia.

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