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SYSTEM-SYNERGETIC VIEW OF THE ECONOMIC SECURITY MANAGEMENT AT ENTERPRISE

Objective. *The objective of the article is to ground the conceptual approach to economic security management from a perspective of system approach and synergism.*

Methods. *In the course of research were used: monographic method – while studying literary sources; analysis method – while studying particularities of micro-level social-economic systems; synthesis method – while studying the system characteristics of such categories as «economic security management» and «economic security of the enterprise»; abstraction method – while development of conceptual regulations of economic security management at the micro-level.*

Results. *According to the results of done research the scientific-technical approach is proposed, which allows to define the base characteristics of economic security management at enterprise at system-synergetic principles. The studying of the system particularities of economic security reflected opportunities of the further development of security theory on the basis of the modern synergetic paradigm.*

Academic novelty. *The further scientific-technical approach to economic security management at enterprise was developed which, unlike the existing ones, takes into consideration the system characteristics of such categories as «economic security management» and proximately «economic security» at the social-economic micro-levels.*

Practical importance. *The obtained results are aimed at the improving of economic security management at enterprise, taking into consideration the system characteristics of this process at the micro-level.*

Key words: *economic security, economic security management, synergetic, system approach.*

Problem definition and its connection with the most important scientific and practical tasks. The modern trends of the world and national economics development confirm the existence of two main interrelated, but parallel processes. On the one hand, there is a growth of integration and business globalization rates is observed. On another hand, the social crisis phenomena are also observed. The domination of each process causes either development or on the contrary, the risks of socio-economic systems default, including micro-level systems, i.e. enterprises [1].

The tendency of enterprises to survive in any conditions requires searching of universal rules of conduct, i.e. requires the formation of conceptual vision of management mechanism of secure functioning and development using acknowledged

scientific-practical approaches, among which the system and synergetic approaches are of paramount importance.

The latest research and publications review. A great contribution into synergetic theory development made scientific achievements of many our compatriots: V.I. Vernandsky, B.P. Belousov, A.M. Zhabotinsky, Yu.M. Klimantovich, A.M. Kolmogorov etc. But the main features of synergetic theory as a discipline are stated in the works of G. Hagen [2,3], I. Prigozhin [4,5], G. Nikolas [5], written in 70ies of the twentieth century. Nowadays synergetics as philosophy of scientific thinking is reflected in the works of T.A. Akimova [5], A. Atkisson [6], J. Garaedagi [7], K. Maintser [8], L. G. Melnik [9] etc. On the contrary, such aspects as applied use of output data and basic principles of synergetics for economics security management of enterprises are not fully developed in national science.

The objective of the article is to ground the conceptual approach to economics security management of enterprise on system-synergic basis.

The main research subject summary. The actuality of scientific-practical interest for synergetic basis of formation of the mechanism of economics security management is connected principally with universality and interdisciplinary of opinions concerning the development processes and self-organization of compound free form and structure systems, which are the main in synergetics.

The main principles as for necessity of deeper study of mechanism of economic security management of enterprise from the position of synergetics consist in systems characterizing and possibilities to project synergetic world vision on particular socio-economic systems, which are enterprise, its management system and economic security etc. G. Haken states the following basic characteristics of systems, which can be self-organization (in accordance with scientific principles of synergetics) [2]:

- 1) Researched systems complexity and its heterogeneous components interrelation;
- 2) nonlinearity and openness of the system;
- 3) energy exchange between system and its environment;
- 4) existence of internal and external vibration sources (fluctuations);
- 5) system can lose stability
- 6) qualitative character of changes which appear because of qualitative pile-up of certain deformations of vital parameters;
- 7) emergent properties existence in basic and recreated systems;
- 8) Appearance of new dimensional, time or combined functional structures;
- 9) Order or randomness of system structure;
- 10) Capability of mathematical formalization

Socio-economical systems, to which enterprise belongs, are ordered, entire, functionally and technically heterogeneous, hierarchical in structure, dynamic from quantitative and compositional elements. Such systems are very steady, which at the same time develop, evolve and transform into more compound forms (though sometimes they can also become fixed or even degrade). This development proceeds under the influence of inconsistent interrelation of external and internal factors, which intensity can differ. That is why the process is erratic, can be interrupted and

not always foreseen. Small modifications of only one element can lead to serious problems of the whole system, that's why by means of circumspect actions betimes great desired results can be achieved.

The listed characteristics of socio-economic system, enterprises in particular, stipulate the specific point of view at economic security as the dynamic category, which requires the necessity to protect the development of enterprise by means of creating the steady state conditions using preventive measures for stabilization of the system and internal or external fluctuations.

The enterprise as a compound socio-economic system consists of two elements: manageable and managerial subsystems. For the enterprise each system can be considered as a compound system of the lower range. The manageable subsystem within the given context means economic security, formed by its main functional components: informational, technical, financial, personnel, resource, logistic, marketing, productive, innovative etc. the managerial element is management system which characterizes by a certain system configuration, level of centralization or decentralization, formalization and regulation, acceptance or non-acceptance of external factors. According to the system approach, the subject and the object of management are closely connected and interrelate with environment.

For management can be regarded as the system, it is reasonable to define the management mechanism of economic security from the position of the system approach and synergetic.

Economic security management is the set of elements or its particular parts (subsystems), which are defined by interdependency concept and necessity of the steady conditions support (dynamic balance) of enterprise. Though these subsystems are relatively independent, they interrelate differently inside the system: in the simplest form they are very close and have the common aim, while in compound forms the formation of one element is caused with existence of another, and moreover these elements influence sufficiently on each other. The main condition of the system integrity is balanced interrelation.

In the course of interrelation the elements form system-wide features, which are proper to every element and to the whole system. The elements features define their significance in internal organization of the system and realize in its functions. So, economic security, being organic component of socio-economic system, has such system characteristics, which can be realized via stabilization functions of the system and the steady development support. It reflects itself through the certain influence on the other internal system elements (finances, personnel, information, technology etc.) and objects which are beyond the enterprise, but which are able to accept this influence, transform it and vary (first of all, these are elements of direct influence of the system).

One should understand that any system has its boundaries, which separate it from the environment. These boundaries can be both transparent, which allow the system to accept the environmental elements, and nontransparent, which isolate the system from the environment. The systems, involved into the line processes and environment, are open ones. The other systems can be regarded as the closed ones, which, according to some scientists' opinion, can hardly be met [6].

According to synergetic principles, one of the main conditions of the steady and continuous existence of the system is the minimal energy dissipation or entropy decrease [9, c.45], i.e. the matter of the socio-economic security management is management of processes of entropy formation and elimination. In other words, the functioning of the mechanism of economic security management at enterprise should be aimed at support of sufficient volume and quality of input resources stream, their effective reallocation among system elements, and from another side, output streams should meet expectations of the environment. So, the objective of economic security management of the enterprise must be support of the internal balance and interrelation with environment. It will stimulate optimal adaptation of the system (enterprise) to environment.

The open systems are aimed at constant changes by means of specialization, differentiation and integration of the elements. It results in connections complication, improvement of the system itself and gives many opportunities for goals achievement, but it also requires the additional resources.

The enterprise as the socio-economic system has its certain structure, i.e. the regulated set of interrelated elements. The regulation gives the system internal organization, where the elements interrelation subordinates to certain principles and rules. The more system is compound, the more compound structure and interrelations it has, so the more probable is the formation of nonlinear processes, which provide the further development of the system. The complication of organizational structure of socio-economic system causes changes in the mechanism of economic security management, and also the shift of emphasis concerning its support, because of the sudden increase of both numerous risk factors and the ways of their neutralization.

The existence in the socio-economic system of the certain system feature, which reflects in every subsystem, provides its integrity and wholeness. The sources of such quality can be either the nature of system (internal source) or integral beginning (external source). But anyway the possibility to realize the relations and features of the system on the united basis makes the system unique. In the centre of this system feature lays the goals integrity, i.e. the reason of a certain system existence. From this it follows that economic security as the system of a certain level is the organic element of socio-economic system. The particularities of its support are defined by the source of formation of the system and its purposiveness.

The socio-economic system is multi feature one, because of its numerous interrelations, which exist at its various levels. At the same time the features of microeconomic system define particularities of interrelation of functional components of economic security, transforming them into united subsystem, which is subordinated to necessity of goals achievement. The ability to provide the correspondence of features of economic security subsystem to the features of the enterprise as micro system defines the power of the latter.

One of the main characteristics of the systems, socio-economic as well and enterprises in particular, is so called emergence, i.e. the appearance of new particularities, which are not proper to its elements. In other words, characteristics of the whole are not equal to the total of particles, though they depend on them. On the

contrary, elements which are united into system, can lose their extra systemic properties, or obtain new ones.

Nonidentity of the total of the elements to the elements of the system is caused in general by the structure existence, that's why the structure transformations can lead to quality ones, but the latter can proceed also due to quantitative changes. Thereby, the system can be transformed qualitatively, without its structure transforming, while inside the same qualitative group several qualitative conditions can exist.

According to emergence properties, the integral level of economic security of the enterprise will exceed total sum of its functional levels. At the same time the complication of internal structure of microeconomic system will cause absolutely new qualitative and higher quantitative levels of economic security support.

It should be said, that exactly the emergence is the basis of obtaining of synergetic effect as the result of different elements and subsystems interrelation. The meaning of synergetic effect in socio-economic systems management is acknowledged by many distinguished scientists [9, p. 127; 10]: their works set the great stage for the further scientific research as for realization of the system and synergetic approaches for steady and secure development of the enterprise.

Conclusions. The result of conducted theoretic – methodological research of economic security management of the enterprise on the basis of synergetic and system approaches in their integrity and interrelation is understanding that the dynamic steadiness of socio-economic system of any level can be reached with the help of the managerial element, which not only implements its separate links integration, its functioning control, resources supply, refuse disposal, obtained results but also can resolve all these processes. It is proved that the main condition of successful self-development and self-reproduction of the system is correspondence of level of complexity of the managerial system to the level of complexity of manageable one. The use of the system approach and particularities of economic security management process from synergetic point of view allowed to make a conclusion that exactly the system particularities in economic security, its position as of the element of enterprise management create the new base for synergetic effect obtaining, which, under the reasoning of the mechanism of economic security management at enterprise can be the object of further scientific-practical exploring in this field in future.

References:

1. Kovaliov, E.V. (2012), “*Ekonomichna bezpeka Ukrainy v umovakh suchasnoi kryzy globalizovanogo svitu*”, *Pravo i Bezpeka*, Vol. 43, No. 1, pp. 255-261.
2. Haken, G. (1980), *Sinergetika* [Synergetic], Mir, Moscow, Russia.
3. Haken, G. (1985), *Sinergetika. Ierarhiia neustoichivostei v samoorganizuiushchikhsia sistemakh i ustroistvakh*, [Synergetic], Mir, Moscow, Russia.
4. Prigozhin, I. and Nikolis, G. (2008), *Poznanie slozhnogo. Vvedenie. Sinergetika: ot proshlogo k budushemu* [Cognition of difficult. Introduction], LKI, Moscow, Russia.
5. Akimova, T.A. (2010), *Teoriya organizatsii* [Theory of organization], JUNITI-DANA, Moscow, Russia.

6. Garaedagi, J. (2010), *Sistemnoe myshlenie: kak upravljat' haosom i slozhnymi procesami: Platforma modelirovanija arhitektury biznesa* [System thought], Grevtsov Buks, Minsk, Belarus.
7. Majntser, K. (2009), *Slozhnosistemnoe myshlenie: materija, razum, chelovechestvo. Novyj sintez* [System thought: matter, reason, humanity], LIBROKOM, Moscow, Russia.
8. Melnik, L.G. (2006), *Ekonomika razvitiia* [Economics of Development], University Book, Sumy, Ukraine.
9. Ansoff, I. (1999), *Novaja korporativnaja strategija* [New corporate strategy], Piter Kom, SPb, Russia.
10. Hiroyuki, Itama and Roelf, Tomas H. (1987), *Mobilizing Invisible Assets*, Harvard University Press, Cambridge, Mass.