

U.D.C. 332.14

**keywords:** adaptation of the regional socioeconomic system, crisis, risks, regional adaptation mechanisms

S.V. Doroshenko

## REGIONAL SOCIOECONOMIC SYSTEM ADAPTATION MECHANISMS IN THE TIMES OF CRISIS<sup>1</sup>

*The article specifies the concept of regional socioeconomic system adaptation and describes its mechanisms proceeding from its constructive value, admittedly the most significant criterion in the times of crisis. On the basis of comparison of separate of the interrogations spent in 2004 and 2009, through allocation of mechanisms of adaptation of region, and also the characteristic of the general level of its adaptation, the perception of actions of governing bodies of Sverdlovsk region is presented by representatives of regional business community.*

What makes the socioeconomic systems different from all others is largely the fact that they are made up of active agents that perform purposeful work in accordance with the decisions they make and that are capable of giving a good account of themselves and other agents.

The ability of the agents to act purposefully increases the importance of adaptation processes in socioeconomic systems. At the same time despite the inner controversy of these systems the logic of adaptations is that of external nature. Adaptability, i.e. ability to adapt, and, consequently, ability to resist external influences, is determined by the ability to cohere, i.e. ability if individual subsystems and system constituents to synchronize on the basis of mutual decisions.

Therefore, the concept of socioeconomic system development is no longer understood as just projects designed in accordance with the elementary rules of linear development aimed at achieving a final objective but rather as self- developing adaptable systems [7] following non-linear guidelines.

Particularly interesting are regional socioeconomic systems which have all features of complex systems capable of self-development due to successful adaptation, these features are:

- fixed objectives to be reached and the criteria of their achievement;
- openness and interaction with the environment;
- irreversibility of the processes under way manifesting itself in the fact that if a certain operation is effected in the system and then repeated later the result may be entirely different;
- flexibility of the inner structure as a quality endowed by the functioning of the system;
- a unique combination of certain resources;
- seeking competition due to shortage of resources;
- an ‘inside manager block’ completing purposeful selection;
- cyclic development;
- ability to adapt actively, including instances when a management decision is made and carried out;
- implementing certain development scenarios depending on the outside influence.

It is interesting to note that predominance of the regional self-development paradigm in Russia became particularly obvious in the years of crisis in the 90ies of the XX century. It is during this period that the concept of inner resources and mechanisms of territorial self-development was given prominence to, more specifically as ‘technoparks’, ‘technopolis’, ‘entrepreneur zones’, and different forms of encouraging small and medium innovational businesses. In the past few years the interest to regional self-development has not diminished. There is much valuable research work done in this field [3; 9; 10].

The ability of a region to develop itself is determined by its endogenous features. However, the architecture and performance of the environment is no less important, the more so because today the role of the exogenous influence is increasing making it more preferable ‘to work initiatively and actively in strategy and practical policy understanding and forestalling the current and oncoming changes and thus preventing the imminent problems and risks’ [4, p. 163].

Therefore, a scientific study of the ability of regional socioeconomic systems to resist modern challenges, and evaluation of their further prospects

<sup>1</sup> The research is part of the project ‘Regularities in forming self-developing economic systems and their functioning (decision-making agents, territories, regions) using advanced organizational and management technologies’ which is included into the Program of fundamental research No.26, Russian Academy of Sciences Presidium and supported financially by the Russian Humanitarian Scientific Fund (grant 07-02-04009a ‘Scientific basis for innovational development of the territorial socioeconomic systems’).

require an analysis of their ability to adapt as an adequate response to the inside and outside instability so typical of today.

The processes of regional socioeconomic system adaptation and its mechanisms have not yet been sufficiently studied because there are no basic concepts, nor theoretical and methodological approaches and corresponding methodological tools.

Proceeding from the interdisciplinary approach based on the achievements in management, regional administration, as well as economic sociology and psychology the article is going to study the adaptation mechanisms of a region both as one whole and as a socioeconomic system with its own inner structure which is open to management monitoring including situations when the economy is in crisis.

Mathematically speaking crisis is defined as *momentum* of program change in *the development of a system* [1]. The nature of crisis thus understood is closest to the concepts and principles used by evolutionary economics [8]. Being a developing system a region accumulates changes and at the same time in the process of its development it acquires new qualities [5]. Thus, in the course of time there appears a necessity in qualitative transition from one condition to another. Partly this transition is effected by taking management decisions. Frequently crisis may be the condition for this transition.

One of the most outstanding works studying the theory of crisis is A.A. Bogdanov's 'Tectology' [2]. From the point of view of the adaptability approach two of his basic assertions are particularly significant and interesting: crisis is a change of the organizational forms of the complex (here — *system*), the general tendency of the crisis can be foreseen. The latter statement is essential for defining the criteria to evaluate adaptation mechanisms in the region.

The regional socioeconomic system adaptation is understood as a process leading to developing a unique complex of specific features determined by how the region integrates into the system of environmental interaction and how the outside influence has to be resisted.

To such features belong, first, qualities that determine the structure of the socioeconomic system and forms of its existence and, second, features that underlie the processes of its inside and outside interaction.

It is understanding adaptation as a process that allows to speak about its continuity. The above definition specifies the objective — diminishing the influence of the environment, the result — development of specific features, the cause of this development — interactions both inside the region

and with other territories. Relationships like 'nature — economy', 'economy — population', 'economy — politics', 'administration — population', 'state — private enterprise', 'federal center — region', etc., determine the unique combination of regional specific features.

The definition excludes expectations of only positive results of adaptation, this allows to evaluate it considering negative consequences too.

The world financial and economic crisis of 2008 demonstrated that frequently regions which were better off in usual conditions of steady development found themselves in a relatively greater plight in the period of bifurcation compared to ordinarily weaker regions. Situations like that give grounds to identify the nature of the crisis proceeding from adaptation when the crisis is defined as reaching the limit beyond which it is no longer possible to follow the previously set guidelines of adaptation using its old mechanisms.

Creating adaptation mechanisms of any system is the key problem in studying the development of this system. Adaptation mechanisms are best studied in biology, psychology, and sociology. Certain results have been achieved in analyzing adaptation mechanisms of individual companies, firms, and enterprises. And, in fact, no research of adaptation mechanisms has been done on the level of regional systems.

As a terminological expression adaptation mechanisms of a regional socioeconomic system means the combination of conditions and activities which determine the process of its adaptation.

The above definition allows to turn away from the purely instrumental understanding of adaptation as a number of means aimed at making the system's adaptive potential work. However, the necessity to use certain means by carrying out activities which imply the existence of such means is also taken into account.

The very fact of adaptive activities gives sufficient ground to speak about adaptation mechanism no matter what its result is, i.e. any result of the adaptive process has to be considered including the many scenarios of adaptive activities which do not meet the principle of successfulness.

Adaptation of socioeconomic system is effected by its direct participants monitoring it. That is why when studying the adaptation mechanisms proper and considering that it is an analysis of a socioeconomic system which follows the development vector determined by management decisions in the first place we used the approach that operates psycho-social issues. It allowed to construct an adaptation model that includes: 1)

independent conditions/tendencies of vitality;  
 2) reflection of such conditions/tendencies in an individual's evaluations, expectations and projects;  
 3) non-objective (internal) and behavioral effects resulting from the interaction of the above elements.

This model is used in different disciplines and the reason for that is the growing significance of non-objective influences in social processes. When this model is put into effect the evaluation of the adaptation mechanisms of a regional system taken as a whole implies an analysis of motivation in the system of administration and management in the region. In view of the above the influences affecting the adaptation mechanisms of a regional socio-economic system can be defined as follows:

- specific orientation in the socioeconomic areas;
- activity/passivity of administration and management bodies in achieving results meeting 'private' interests of the region;
- creativity in decision making;
- acceptance of 'new values' including 'freedom of choice' and an ability to make this choice.

By analogy with the concept of "workers' consciousness" the term "managers' consciousness" is introduced to help better understand an individual's behavior on the labor market and describe a regional official's performance. It includes two contents:

- 1) the system of knowledge, relationships, and feelings related to the socioeconomic life of the regional community and to its integration into the national and world socioeconomic system;
- 2) the system of knowledge, relationships, and feelings related to oneself as one participating in the socioeconomic life of the region.

The interaction of these two invokes in a representative of the administration and management certain ambitions, guidelines, self-regulation techniques which influence readiness to act in a particular way and in combination with the latter affect the regional specific adaptation mechanisms generally (the same holds good for the representatives of other regional communities).

The main adaptation criterion during the crisis is constructiveness, on its basis one can distribute all adaptation mechanisms between two groups: constructive and destructive [5; 6].

An indication of constructiveness is not just aiming at a really positive socioeconomic result (for example, reaching an acceptable quality of life or an advanced level of economic development), the decision to be made must have an element of innovation.

Proceeding from this approach and, also, taking into account results of research in social

economy one can speak of the following destructive mechanisms:

— *self-protecting evasive behavior*. It is typical that in some cases the managing system tries to ignore the problems it faces and does not attempt to look at the situation realistically. In other cases they do their best to keep off any proposals and situations that require effort, persistence, and new approaches. In such instances the outside circumstances restrict all activity of the regional system. No attempts are made to see parallel ways of development or follow them. The public is firmly convinced that it is impossible to alter the situation and all activity is useless;

— *chaotic search*. Activity without proper evaluation of decision variants and their consequences. On the face of it this kind of behavior can do some good when things are coming to a crisis but it is our belief that if it is prone to a downfall of the level of life and regional economy it automatically lowers the status of the region which may entail general discontent, socioeconomic instability, growing aggressiveness;

— *search of decision when management lacks efficiency and information*. This form of activity occurs due to inadequate qualification of the regional administration and management officials though they are ready to act and are willing to solve the problems they face. This kind of search is close to the previous one. If it lasts too long it may have a negative forecast.

— *rental relations with the state*. The managing bodies of the region are in no hurry to undertake any active measures as long as the state transfers enough budget money to maintain relative socioeconomic stability. In planning the beginning of search is directly linked with cuts of financing when money injections become insufficient for the viability of the region.

The underlying concept for defining constructive mechanisms is the notion of 'coping behavior' which is now widely used in sociology and psychology. In socioeconomic system 'coping' is a mechanism of management's sensible monitoring both its own activity and that of the regional community as a whole aimed at optimum interaction with the new circumstances or at their change in pursuit of the set objectives with limited resource opportunities. In practice it means that the very existence of a certain group of regions makes coping a fact of socioeconomic development which must be taken into account in regional projects and programs. For example, it is important to 'weigh' (evaluate) regions or groups of region from the point of view of their preparedness not for just adaptation but for

coping behavior, i.e. for constructive adaptation in which an important role in regulating the situation and achieving socioeconomic welfare is given to conscious efforts of the participants. With reference to regional systems the constructive adaptation mechanisms used in sociology are treated in the current research as:

— *revealing the region's own resources in their intensive use;*

— *evaluation of a constricted situation as one offering new or additional chances;*

— *a multiple outlook on how potential opportunities can be made good of;*

— *clear definition of the mobilization resources, intentions, and plans.* One may possess a sufficient potential but it is the ability to focus on a certain problem or situation that gives a real mechanism which translates experience into efficient activity;

— *accumulation of free market experience helping to work out an efficient strategy;*

— *using personal contact resources, lobbying region's interests at higher levels of the hierarchy.*

The latter mechanism can be considered constructive only if this activity is not effected on a long-time basis, otherwise it can lead to rental relationship with the state.

This article does not directly treat of the adaptation mechanism architectonics though it is certainly very important and the author is engaged in its research [5]. We must only mention that the above mechanisms are all individual and are determined by the resource opportunities and the management decisions made. On the whole all the described mechanisms are interrelated and may interact within one and the same regional system. Studying individual adaptation mechanisms of the regional socioeconomic systems is a necessary prerequisite of their safety.

The degree of safety also depends on how the performance of the regional administration and management is apprehended, by business community primarily. It can be explained by the fact that most of the decisions that are made and effected are aimed at creating favorable conditions for entrepreneur activity as one of the chief elements in the general adaptation process of the region. Detection and evaluation of such apprehension is a separate subject of both scientific research and management studies.

Thus, in 2004 the Institute of Economics, Russian Academy of Sciences, Ural subdivision, and Strategic Research and Investment Fund of the Ural federal district held an opinion poll among businessmen and managers of Sverdlovsk region who represented different businesses: industrial production, trade, services. The total number of

200 people represented more than 70 different business structures. The purpose of the study was the influence of inner and outward uncertainty upon the adaptation process of the region. In a way the researchers obtained a situational view from the inside without any statistic data or official judgment [6].

The years 2003—2004 were the period of stabilization and relative improvement of the socioeconomic development in Sverdlovsk region and in Russia generally. The economic downfall that started in the country in autumn of 2008 and which still continues affected all spheres of activity and can be translated into figures. However, the crisis is also reflected in an individual's mind influencing apprehension of the policy being carried out and the decisions made by the administration to prevent disastrous consequences. Eventually this personal perception reveals itself in the decisions the agents make.

The purpose of the second opinion poll was not just to find out the change of its results that came round under the influence of time and circumstances but to evaluate indirectly how Ural business community appreciates the current activity, that of the regional authorities primarily, because what is on people's mind today largely determines the development vector of tomorrow.

By way of reference we must note that according to different economists Sverdlovsk region has high socioeconomic potential. It is one of the most developed industrial areas in Russia. The industrial complex accounts for 40% of the regional gross product. The total number of people employed in different branches of industry is 565 thousand. According to regional official bodies Sverdlovsk region is one of the territories that offer favorable conditions for developing business community [13].

Starting 2004 international rating agencies estimate the region's credit rating at B+ (forecast 'Positive'). On December 5, 2008, Standard & Poors Agency confirmed the long-term rating of Sverdlovsk region estimating it at 'BB' level though the rating forecast was lowered from 'Positive' to 'Stable'. Giving the 'Stable' forecast Standard & Poors believe that in the years 2009—2010 the administration of Sverdlovsk region will manage to hold back the increase of expenses and will maintain budget balance without decreasing the current average proficiency below 5% of the current expenses. Besides, Standard and Poors proceeded from the assumption that the debt of the region will remain low [14].

However, in today's crisis Sverdlovsk region and 17 more territories are among the arrears where the

situation is the gravest. The industrial production, the investment activity tumbled down here more than in other areas and the social tension grew. About 25% of the employees in these regions are involved in the industrial branches which are subject to crisis. At the same time according to the statistics of November 2008 Sverdlovsk region is one of the leaders in the race of credit debts. The regional authorities assure they are taking all necessary measures to improve the situation [15].

The current opinion poll, similarly to the first one, was held among businessmen and managers of Sverdlovsk region working in different branches of economy including industry, wholesale and retail trade, services. We must emphasize that the questionnaires were distributed among agents of the companies that continue their operation and, besides, have good prospects to overcome the crisis successfully. Probably if the opinion of a less fortunate group of businessmen had been considered the appraisal of the situation would have been much tougher.

The scope of this article does not allow to cite all the results which were received. We will only give a comparative review of the answers that are related to the issues discussed in the article: risks of management decisions, adaptive mechanisms, regional adaptation level.

The indefiniteness arising in connection with the management decision to be made is one of the sources of risk which they link with the realization of the taken decision. In quickly changing situations the degree of risk is rising. It is due to this dependence that it is necessary to look for new variants of solving various problems.

As is well known there are plenty of different methods and approaches in risk analysis, regional ones. However, according to experts studying risks there cannot be only one true concept of risk [11]. When the poll was held we introduced the concept of environmental risks which extends the risk theory to the regional level and which implies particular phenomena or various circumstances that raise the danger of undesirable development of socioeconomic processes in the situation in which a decision has to be made.

The respondents were offered to indicate risks which influence regional decision making most of all (table 1).

The Table shows that political events are still rated first by most of the voters. "Inefficient resource distribution" continues to rank second. The risk of 'Decision error' gained nearly the same number of votes. Then follow 'fluctuations in the economy' and 'decrease of investment activity'

— their influence now is placed higher than in the previous period. The risk of 'public discontent' went down slightly. Like it was five years ago the experts believe that today again opposition's activity is no longer of so great importance. Thus, according to our respondents management socioeconomic decisions in the region are still dependent chiefly on political events and on the so-called of the regional 'administrative resource'.

Table 1  
Evaluation of risks affecting management decision making in the region

Risks	Expert opinion, %	
	2004	2009
Public discontent	11,8	9,1
Activity of the opposition	7	2
Stand still of business	3,9	5,2
Political events	18	19,4
Inefficient distribution of resources	17,3	17,2
Fluctuations in economy	13,4	15
Investment activity slow down	11	13
Ecological situation	2,3	2,1
Decision error	15	17

The arising risks tend to accumulate since the decisions made are always linked with risky consequences which entail further reaction also prone of risks [12].

The taken decisions form a basis for different adaptation mechanisms of the region. It should be noted that in the poll the mechanisms are deliberately listed without dividing them into constructive and destructive ones.

The results of the poll are given below (table 2).

In Table 2 the constructive mechanisms are printed in boldface and the italicized mechanism is an intermediate instance still treated as a constructive one.

Like in the previous period the mechanism of using personal contact resources, in other words — lobbying region's interests at higher levels of the hierarchy, rates highest, it is an adaptation mechanism which we treat as a constructive one but which in reality occupies an intermediate position.

The constructive mechanism of 'accumulating free market experience helping to work out an efficient strategy' gained a higher position as compared with the previous period.

On the whole one can note that the constructive mechanisms (without the mechanism of using personal contact resources) have slightly increased their percentage: 38,1% against 37%. However, if the mechanism of experience accumulation is not taken into account the rest of the mechanisms show a decrease.

Table 2  
Mechanisms of regional administration adaptation behavior  
as viewed by business community representatives

Adaptation mechanisms	Expert opinion, %	
	2004	2009
Revealing the region's own resources in their intensive use	7.3	5.3
Evaluation of a constricted situation as one offering new or additional chances	4.9	4.5
A multiple outlook on how potential opportunities can be made good of	8.2	8.1
Clear definition of the mobilization resources, intentions, and plans	4.1	3.9
Accumulation of free market experience helping to work out an efficient strategy	12.3	16.3
Personal contact resources, lobbying region's interests at higher levels of the hierarchy	30.3	26.3
Self-protecting evasive behavior	11.5	10.1
Chaotic search	9.8	10.3
Search of decision when management lacks efficiency and information	6.6	7.7
Rental relationship with the state	9.0	7.5

Alongside of it such destructive mechanisms as 'chaotic search' (activity without proper evaluation of decision variants and their consequences) and 'search of decision when management lacks efficiency and information' have increased their percentage. Though, certainly, one cannot but notice the promising decrease of votes in favor of such destructive mechanisms as 'self-protecting evasive behavior' and 'rental relations with the state'. There is no doubt that the above mechanisms can intervene and work in one and the same region simultaneously. The respondents were offered to make a choice of several options (up to four). Nearly one third of them think that the regional administration and management bodies go through a 'mixed' process of adaptation, i.e. both constructive and destructive adaptation mechanisms are involved. The other respondents rather clearly express their

opinion either in favor of constructive or destructive adaptation mechanisms.

Generally speaking, businessmen still do not appreciate highly the performance of the regional administration striving to adapt the region to the new conditions.

The same result 'emerged' when the respondents evaluated the region's general level of adaptation to the requirements of the environment (fig.).

The above diagram shows that the number of respondents who evaluate the adaptation level as 'medium', 'tending to high', and 'high' has diminished. Correspondingly, the number of those who evaluate it as 'tending to low' has increased. This opinion has certainly been influenced by the current negative processes when many macroeconomic indicators have seriously deteriorated. The scale of this deterioration turned out to be quite unexpected for both the federal and regional authorities.

On the whole, despite its being, to a certain degree, non-objective the comparison given above still allows to summarize the opinion of business society concerning the decisions made at the regional level.

We must emphasize once more that the attitudes formed today have a strong effect on the economic agents' performance fostering not only entrepreneur activity in the region but the development of shadow processes too. Therefore this sort of social study should be done alongside of the socioeconomic monitoring of the crisis and its consequences.

### References

1. Crisis anatomy / A. D. Armand, D. I. Luri, and others.-M.: Nauka, 1999, 366 pp.
2. Bogdanov A.A. Tectology. Universal organizational science. Books 1, 2. M.: Economics, 1989.
3. Buvaltseva V. I. Regional economy stability, actualizing the principle of self-development (using Kemerov region as an example): doctorate thesis in economics: 08.00.05: Kemerovo, 2002. 335 pp.

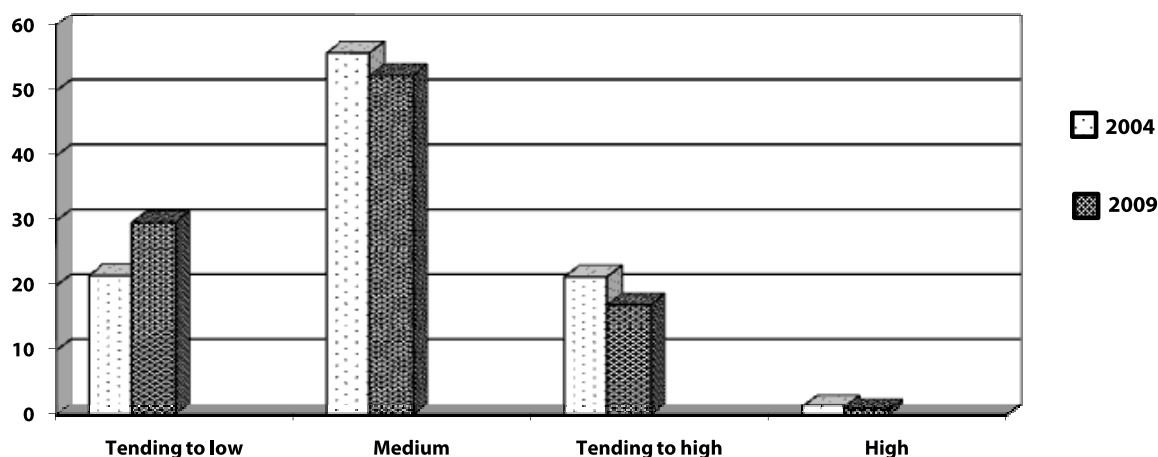


Fig. Evaluation of the region's level of adaptation to the new environment

4. *Davydov V.* First and second generation reforms in the process of adaptation to the economic globalization (Latin America experience) // *Society and economics*, 2003. No.1 pp. 163—184.
5. *Doroshenko S. V.* The theory of evolutional regionomics / general Editor professor *Popova E.V.*, Ph.D. in economics. — Ekaterinburg: Institute of economics, Russian Academy of Sciences, Ural subdivision, 2003. p. 177.
6. *Doroshenko S. V.* Adaptation mechanisms of the regional socioeconomic system: theoretical issues // *Ural Technical University Bulletin, 'Economy and management'*, Ekaterinburg, Ural Technical University, 2004, No.4, pp. 88—95.
7. *Molodchik A. V.* Theory and Practice of a self-developing organization. — Ekaterinburg, Institute of economics, Russian Academy of Sciences, Ural subdivision, 2001, 286 pp.
8. *Nelson R., Winter S.* Evolutional theory of economic change. — M.: 'Finstatinform', 2000.
9. *Tatarkin A. I.* Regions and territories: self-development opportunities // *'Business. Management. Law'*. 2008. No. 2. pp. 100—110.
10. *Tatarkin A. I., Tatarkin D. A.* Self-development of regions in the context of federal relationship // *Spatial economy*, 2008. No. 4. pp. 60—70.
11. *Douglas M.* Risk and Blame: Essays in Cultural Theory. L.: Routledge, 1992.
12. *Luhmann N.* Risk: A Sociological Theory. N.Y.: Walter de Gruyter, Inc., 1993.
13. Analytical review // <http://www.regnum.ru/news/1107433.html> (reference date: 06.04.2009).
14. Situation evaluation for Sverdlovsk region // <http://www.midural.ru/economy> (reference date: 06.04.2009).
15. Sverdlovsk region suffered from the crisis more than others // <http://www.66.ru/news/business/32755/> (reference date: 06.04.2009).