Economic Security of a System for Territorial Life Support in Perm Region: Theory, Methodology, Practice

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Abstract: the article addresses the architectonics if "security" notion and explains utter importance of security for modern Russia, including its constituent entities. The challenges which are now faced by the territorial life support system control bodies in the housing and utilities sector (HUS) are considered. The author proposes methods of evaluation of the level of economic security of territorial life support system of housing and utilities sector which will allow to reduce risks, increase the level of and quality of life and facilitate national security as a whole.

Key words: Territorial life support system · Housing and utilities sector · Economic security · Indicators of economic security · Threshold values of economic security of territorial life support system of housing and utilities sector

INTRODUCTION

Unbalanced mechanism of development of HUS, absence of efficient economic levers for regulation of relations between economic entities, high levels of monopolization and criminalization did not allow to introduce significant changes in housing and utilities sector. In conditions of transition to market relations and low level of paying ability of the population housing and utilities sector organizations faced the necessity to find principally new approaches to assessment and provision of economic security which demanded complete transformation of all the defense system of economic interests.

Housing and utilities sector industry as socially-oriented economic sector can not behave in full accordance with market laws-this greatly deteriorates its activity not allowing to use market mechanisms in full.

Security of housing and utilities sector to a great extent depends on financial and economic conditions of the organizations. By now about 27% of all housing and utilities sector organization of Perm territory are bankrupts.

Depreciation of fixed assets of housing and utilities sector is about 50% which influences negatively technical and technological conditions of the organizations and does not allow to provide high level of economic security of territorial life support system of housing and utilities sector.

Territorial life support system is rather broad notion which includes food supplies and nonfood items supplies and a number of housing and utilities services etc. This study addresses the territorial life support system within the sphere of housing and utilities sector.

Generally speaking, the notion "security" has very broad meaning and means the state of protection of life-important interests of a person, society and the state from internal and external threats. Such generalization does not allow to perform investigation within PhD thesis, that is why from all the list of the security kinds economic security was chosen; the second reason of choice is social significance of HUS.

One of the first people who thought about economic activity was Aristotle, he divided economic sphere into 2 subdivisions [1]:

- Economy-positively assessed human activity in land cultivation, handicrafts and trade;
- Chremastics-negatively assessed human activity in the area of big business bargains with the purposes

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of speculation and money-landing, the size of treasures created here is not limited. Priorities of security lie predominantly in economy but they are not fixed. They are changing depending on historical period of state development and because of the situation in the world [2-3].

Security in V. Senchagov's opinion is the state of an object in the system of its relations in terms of the abilities to survive and develop under internal and external threats [4].

From the beginning of intense development of society people started to monitor ecological conditions, in order to allow future generation to use natural resources and environment necessary for living activity. A number of well-known scientists believe that ecological security is of key importance because human existence depends on it.

Performing its transition to market economy Russia started to get close to European countries in terms of demographic trends. Thus, at present time the process of long-term reduction of population is observed in the Russian Federation which is called 2nd demographic transition. [5]. Principal quantitative feature of 2nd transition-reduction of birth rate from the level a bit higher than simple re-production to the level below simple re-production.

We can only guess about the reasons of such situation but the most obvious ones are absence of stability and confidence in tomorrow which results in de-motiviation to have children. R. Lesthaege [6] proves that urbanization, industrialization and secularization were indirect determinants of the first period. In parallel people started to strive not for quantity but for quality, that is why reduction in number of children led to great attention to their education, upbringing and development etc. In the same time V. Lutz, W. Sanderson and S. Shcherbov [7-8] predict growth of population to impossible limits by the middle of XXI century mainly thanks to African and Asian countries, which in turn proves Lesthaege theory-the population of these countries live behind the poverty level and correspondingly sees reproduction as the key interest.

Reduction of developed countries' population is determined to a rather big extent by AIDS, HIV-infection, tuberculosis, drug-addiction, alcohol-addiction, solvent abuse and oncologic deceases connected with fall of moral and worsening of ecological environment in these countries. This is proved by investigations of Russian and European experts [9] and by data of World Health Organization [10].

Demographic security directly depends on economic security component because without financial support parents can not allow themselves to have more children because this can end badly.

Economic security can not be analyzed on one level. On every level its own conditions and factors exist. Without taking them into consideration it is not possible to assess economic security and describe it.

Economic security is not only protection of national interests but the readiness and ability of power institutions to create the mechanisms for realization and protection of national economy interests, to support socio-political stability of society [11].

This definition focuses on very important aspects – "development" and "stability" and for the first time national interests are viewed as object of economic security.

A. Illarionov believes that economic security is "a mode, state, legislative atmosphere, which automatically provides and guarantees the reliability of efficient functioning of economic entities of our country..." [12].

E. Ivanov considers economic security as "combination of economic, political and legislative conditions which provide sustainable in perspective production of maximum number of economic resources per 1 person in the most efficient way" [13].

Illarionov' and Ivanov's definitions are to a great extent similar: they believe that economic security must integrate economic, political and legislative conditions and in this way the state of an object can be assessed in complex way.

I. Neganov and N. Tarasov believe that economic security is a "qualitative core characteristic of economic system which determines its ability to support normal conditions of population life, steady supply of resources into national economy and serve a series of national and state interests of the country". In our opinion this definition does not contains attitude to conditions of stability of production and provision of economic security. [14].

A. Michailenko believes that there is no comprehensive definition of economic security (ES) yet. He explains it by the overlapping of law and economy at this point and little interest from the scientists in solution of this difficult task. We agree in full at this point of view [15].

V. Pankov believes that ES is "a state of national economy which is characterized by its stability, immunity to the impact of internal and external factors which break normal functioning of the process of public reproduction,

undermining achieved level of life and provoking social stress in the society and the threat to existence of the state" [16].

Pankov's approach is the most socially-oriented which makes his vision of economic security different from other experts' opinion. He considers ES as socio-economic category and precisely defines the threats.

In A. Tatarkin, A. Kuklin and other Urals scientists'opinion [17] economic security of the Russian Federation is a complex of economic, geo-political, ecological, legislative and other conditions which provide:

- Pre-conditions for its survival in the conditions of crisis and future development;
- Defense of core national interests in regard to its resource potential, balanced development and growth;
- Formation of internal immunity and protection from external de-stabilizing impacts;
- Competitiveness of the country in world markets and sustainability of its financial conditions;
- Decent conditions of life and sustainable development of a person.

Definition given by Urals scientists, in our opinion, the most precisely reflects the complex of conditions intended for sustainable development of Russia.

O. Belkov thinks that 'economic security is qualitatively definite state of country's economy which in terms of society must be either preserved or developed on progressive scale" [18].

Yu. Vladimirov and A. Pavlov believe that "economic security is core qualitative characteristic of economic system which determines its ability to sustain normal conditions of population life, steady supply of resources into national economy and prioritized realization of national interests" [19].

E. Bukhvald, N. Glovatskaya and S. Lazarenko propose to understand economic security as the level of economic development which an provide economic, socio-political and military stability under the impact of hostile factors [20].

In our opinion, economic security is guarantee of independence and sustainable development of economic entities of different levels (territory, sphere, organization). Concept of economic security can not be developed and implemented without aid from science.

Thus, in our opinion, economic security of territorial life support system of housing and utilities sector is a state when economic interests of the participators of housing and utilities services market are protected from internal and external challenges which appear in the process of interaction of the parties, providing security of living activity of the consumers and sufficient volume of production and allowing manufacturers to work in conditions of honest competition.

Having defined the level of economic security of housing and utilities sector we must establish core areas of activity of organizations and the ways by which it will be possible to increase their economic security. Generally speaking, economic security strategy is a choice by the company of key directions of its development, setting global aim and elaboration of the ways of achievement of economic stability, neutralization of threats and minimization of risks for administrative-economic activity.

The order in evaluation of the level of economic security of housing and utilities sector must be as follows:

- To select objects of housing and utilities sector for investigation;
- To identify indicators of economic security of housing and utilities sector for every object of investigation;
- To collect input data for further calculations of proposed indicators;
- To calculate current values of indicators.
- To form threshold values for indicators on the base of specific features of housing and utilities sector activity;
- State of economic security must be assessed by every indicator-comparison of current values with threshold ones;
- To analyze possible reasons of deviation of calculated current values of economic security from their threshold values.
- To develop measures by which it will be possible to increase level of economic security of housing and utilities sector.

Indicator is the limits of economic indicator of the participator in economic activity within which sustainable development and functioning is occurs.

While determining the level of economic security of the territorial life support system of housing and utilities sector the use of indicators system intended for other industries will inevitably result in calculations errors. The precise data is of utter importance because development strategy and managerial decisions depend on it. To identify threshold values both of indicators and of modules we must transform different units of indicators to index (standartized) form for calculation of their values [17].

In our opinion the indicators of economic security of housing and utilities sector must be grouped in modules which correspond to different aspects of activity and have different objects to which measures of economic security must be applied:

- Module of evaluation of security of housing and utilities sector services;
- Module of evaluation of the degree of protection of consumers and manufacturers of housing and utilities services.

The list of indicators of every block is very specific and differs greatly but all of them to some extent influence the level of economic security in the housing and utilities sector. Contents and the calculation algorithms for every block of indicators we shall consider below.

Module of evaluation of security of housing and utility services. This module is intended for evaluation of security of housing and utilities services and their correspondence to the requirements stated in regulatory documents. In order to calculate indicators within this module data is taken directly from the collection books of statistical reports of Federal service of state statistics.

In order to assess security of housing and utilities sector services it is necessary to group indicators in 6 groups:

- Group of quality of provided housing and utilities sector services;
- Group of price level of housing and utilities sector services;
- Group to show degree of provision of consumers with housing and utilities sector services;
- Group of indicators of accidents rate in networks of housing and utilities sector organizations;
- Group of losses incurred by housing and utilities sector organizations;
- Group of stable functioning of housing and utilities sector organizations.

In order to calculate presented above groups of indicators we have enough data and the calculation of modules' indicators will allow to define their values very precisely.

Synthetic Indicator of Quality of Housing and Utilities Sector Services:
- Specific weight of dilapidated houses and houses in critical condition in the total area of all houses.

- Specific weight of houses in good conditions provided with all utilities
- Synthetic indicator of depreciation of fixed assets of housing and utilities sector organizations.
- Depreciation degree of fixed assets of organizations supplying houses with energy and heating.
- Depreciation degree of fixed assets of water supply organizations.
- Depreciation degree of fixed assets of wastewater disposal organizations.
- Proportion of expenditures on innovations in total expenditure volume.

Synthetic Indicator of Prices of Housing and Utilities Sector Services:
- Consumer prices index of housing services.
- Consumer prices index of utilities services.
- Share of consumer prices of housing and utilities services in minimum costs of living.
- Share of costs of housing and utilities sector services in average wage.
- Synthetic indicator of degree of provision with housing and utilities sector services.
- Coefficient of provision with water supply network, km/1000 people.
- Coefficient of provision with wastewater disposal network, km/1000 people.
- Coefficient of pp with heating network, km/1000 people.

Synthetic Indicator of Accidents Rate in the Networks of Housing and Utilities Sector Organizations:
- Accidents rate in water-supply network, number of accidents per 100 km.
- Accidents rate in wastewater disposal network, number of accidents per 100 km.
- Accidents rate in heating network, number of accidents per 100 km.

Synthetic Indicator of Losses Incurred by Housing and Utilities Sector Organizations:
- Losses because of accidents in water supply networks, million roubles.
- Losses because of accidents in heat supply networks, million roubles.

Synthetic Indicator of Stable Functioning of Housing and Utilities Sector Organizations:
- Share of loss-making organizations in total number, %.
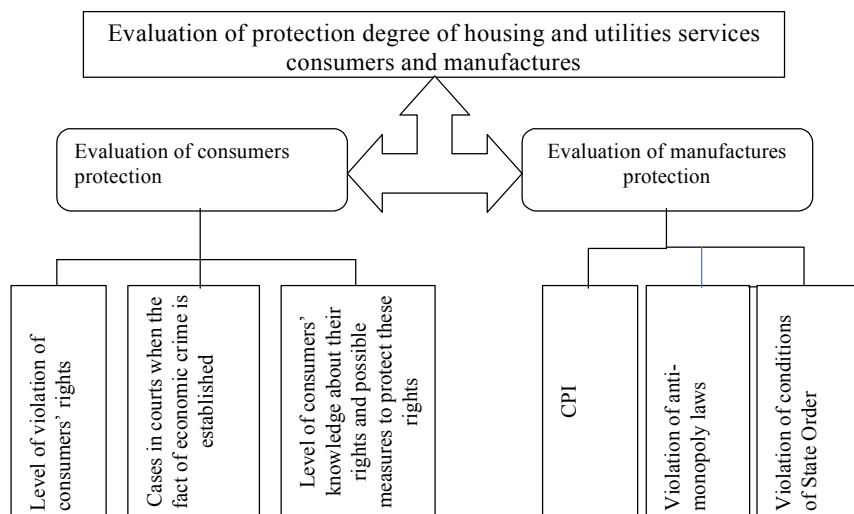- Ratio of debit to credit, %.

Fig. 1: Module structure of housing and utilities services consumers' and manufacturers' protection

Module of evaluation of protection degree of housing and utilities services consumers and manufactures. 2 groups are assessed:

- Protection of consumers.
- Protection of manufacturers.

Here every group consists of certain number of indicators (Figure 1).

Module is intended for analysis of influence of consumers' and manufacturers' protection on the level of economic security of housing and utilities sector, which increase the accuracy of the results and allows to see real advantages and disadvantages of legal aspect of economic relations.

Synthetic indicator of consumers' protection can be calculated by the following formula:

$$I_{consum.protect} = \frac{I_{crv} + I_{ccl} + I_{cons.inform}}{3}$$

Where

$I_{consum. protect.}$-synthetic indicator of consumers' protection;
I_{crv}-indicator of the level of consumers' rights violation;
$I_{ccl.}$ indicator of the level of cases in courts;
$I_{cons. inform}$ indicator of the level of informativeness of consumers.

1.1 Total level of consumers' rights violation

$$I_{crv} = \frac{N_{crv}}{N_{popul} - N_{popul (0-6)}} \times 100$$

Where – I_{crv} is the indicator of the level of consumers' rights violation;
N_{crv}-number of established violations of consumers' rights in housing and utilities sector (Article 14.4 of Administrative Offences Code of the Russian Federation, Article 14.6 of Administrative Offences Code of the Russian Federation, Article 159 of Criminal Code of the Russian Federation);
N_{popul}-population number, thousands of people;
$N_{popul (0-6)}$-number of population at the age of 0-6, thousands people.

Total level of consumers' rights violation

$$I_{ccl} = \frac{\left(\frac{N_{rv}}{N_{established\ rights\ violations}} \right)}{2}$$

where

I_{ccl} = indicator of the level of cases at courts;
N_{rv}-the number of courts decisions in regard to violation of consumers' rights in the area of housing and utilities sector services (Article 14.4 of Administrative Offences Code of the Russian Federation, Article 14.6 of Administrative Offences Code of the Russian Federation, Article 159 of Criminal Code of the Russian Federation);
$N_{established\ rights\ violations}$-number of established rights violations ib housing and utilities sector (Article 14.4 of Administrative Offences Code of the Russian Federation, Article 14.6 of Administrative Offences Code of the Russian Federation, Article 159 of Criminal Code of the Russian Federation);
N_{popul}-population number, thousands of people;
$N_{popul(0-6)}$-population number at the age of 0-6, thousands of people.

General Level of Consumers' Informativeness: Because of the absence of official data necessary to calculate this indicator the investigations must be carried out in this sphere, the following data must be analyzed:

- Activity of mass media information support of consumers in housing and utilities sector;
- Implementation in a constituent entity of the Russian Federation of special information support program in regard to housing and utilities sector;
- Level of consumers' knowledge about their own rights and possible measures to protect these rights;
- Degree of satisfaction of consumers with the level of protection of their rights;
- Opportunity to use informative and legislative data-bases free of charge;
- Housing and utilities services manufacturers' knowledge about law norms of consumers' rights protection.

This indicator can be calculated by methods of sociological study or experts' estimates.

Because of the absence of accurate date this indicator's value can be reduced up to 15%.

Synthetic indicator of manufacturers' protection can be calculated by this formula:

$$I_{manuf.protect.} = \frac{I_{corr.perc.} + I_{honest\ comp.\ violation} + I_{state\ order\ cond.violation}}{3}$$

where

$I_{manuf.protect.}$-synthetic indicator of manufacturers' protection;
$I_{corr.perc.}$-indicator of corruption perception in housing and utilities sector;
$I_{honest\ comp.\ violation}$-indicator of violation of honest competition in housing and utilities sector;
$I_{state\ order\ cond.violation}$-indicator of violation of the state order conditions in housing and utilities sector.

Corruption perceptions index (I_{cpi}) is taken directly from the company "Transparency International" [21].

CPI measures the level of perception of corruption in public sector and is calculated for the whole country, regioning of it is not provided.

Index of violation of honest competition rights in housing and utilities sector.

$$I_{hcrv} = \frac{N_{number\ of\ establ.violations}}{N_{HUS\ ee}}$$

where

I_{hcrv}-index of violation of rights of honest competition;
$N_{number\ of\ establ.violations}$-the number of established violations of honest competition rights in housing and utilities sector;
$N_{HUS\ ee}$-number of economic entities in housing and utilities sector;

Index of violation of legislature in the sphere of state order.

$$I_{sov} = \frac{N_{sov}}{N_{establ.v}}$$

where

I_{sov}-index of law violation in regard to state order conditions;
N_{sov}-number of violations of the conditions of state order;
$N_{establ.v}$-number of established administrative economic violations of law in housing and utilities sector (Article 7.30 of Administrative Offences Code of the Russian Federation, Article 7.31 of Administrative Offences Code of the Russian Federation, Article 7.32 of Administrative Offences Code of the Russian Federation).

In our opinion in order to calculate economic security of housing and utilities sector it is necessary to establish threshold values-marginal values, exceeding (or non-achievement) of which will result in destructive, non-regulated processes. Table 1 gives some threshold values:

Our investigation has found a number of unique indicators and their threshold values for housing and utilities sector.

In order to assess economic security of housing and utilities sector it is appropriate to use indicator approach because it is the most optimal and efficient. It also allows to assess economic security of housing and utilities sector both on municipal and federal/regional levels.

Economic security of housing and utilities sector can be assessed by a set of indicators. Selection of indicators, give them qualitative and quantitative characteristic, to establish threshold values can be done by the method of experts' estimates. This method can be used both for assessment of current state of the object and for forecasting its future state.

Proposed by us system of indicators for assessment of economic security of an organization takes the particularities of the sphere into account and can be adjusted in accordance with organization's purposes.

Table 1: Threshold values of economic security of housing and utilities sector of Perm Territory

Indicator	State of the object assessed by the indicator					
	ПК1	ПК2	ПК3	К1	К2	К3
Module of evaluation of security of housing and utilities services						
1. Synthetic indicator of quality of housing and utilities sector services	-					
1.1. Specific weight of dilapidated houses and houses in critical condition in the total area of all houses.	1,8	4,5	7,1	9,8	13,0	16,2
1.2 Specific weight of houses in good conditions provided with all utilities	90	85	80	75	69	63
1.3 Synthetic indicator of depreciation of fixed assets of housing and utilities sector organizations.	-					
1.3 .1 Depreciation degree of fixed assets of organizations supplying houses with energy and heating.	10	13,33	16,67	20	24	28
1.3.2 Depreciation degree of fixed assets of water supply organizations.	25	30	35	40	46	52
1.3.3 Depreciation degree of fixed assets of wastewater disposal organizations.	25	30	35	40	46	52
1.3.4 Proportion of expenditures on innovations in total expenditure volume.	16	14	12	10	7,6	5,2
2. Synthetic indicator of prices of housing and utilities sector services.	-					
2.1 Consumer prices index of housing services.	105	110	115	120	126	132
2.2 Consumer prices index of utilities services.	105	110	115	120	126	132
2.3 Share of consumer prices of housing and utilities services in minimum costs of living.	12,5	16,67	20,84	25	30	35
2.4 Share of costs of housing and utilities sector services in average wage.	5	6,67	8,33	10	12	14
3. Synthetic indicator of accidents rate in the networks of housing and utilities sector organizations.	-					
3.1 Accidents rate in water-supply network, number of accidents per 100 km	3	10	17	24	32,4	40,8
3.2 Accidents rate in wastewater disposal network	2	4,7	7,3	10	13,2	16,4
3.3 Accidents rate in heating network	2	4,7	7,3	10	13,2	16,4
4. Synthetic indicator of losses incurred by housing and utilities sector organizations.	-					
4.1 Losses because of accidents in water supply networks	5	11,7	18,3	25	33	41
4.2 Losses because of accidents in heat supply networks	5	11,7	18,3	25	33	41
5. Synthetic indicator of stable functioning of housing and utilities sector organizations.	-					
5.1 Share of loss-making organizations in total number, %.	3	10	17	24	32,4	40,8
5.2 Ratio of debit to credit, %.	1	1,67	2,33	3	3,8	4,6
Module of evaluation of protection degree of housing and utilities services consumers and manufactures.						
6. Synthetic indicator of consumers' protection	-					
6.1 Average level of consumers' rights violation	15	31,7	48,3	65	85	105
6.2 Average coefficient of cases in courts	0,6	0,5	0,39	0,29	0,166	0,042
7. Synthetic indicator of manufacturers' protection	-					
1.2. CPI	8	6,7	5,3	4,0	2,4	0,8

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