ISSN 0798 1015

REVISTA ESPACIOS

HOME Revista ESPACIOS ÍNDICES A LOS AUTORES

Vol. 39 (Number 24) Year 2018 • Page 28

Methods for assessment of the economic security level in the region

Métodos de evaluación del nivel de seguridad económica en la región

Victoria V. AKBERDINA 1; Ainura A. KOCHERBAEVA 2; Olga P. SMIRNOVA 3

Received: 30/01/2018 • Approved: 01/03/2018

Content

ABSTRACT:

The essence of economic security is defined and the economic security of the Urals Federal District of Russia is assessed in this article, based on the classification of threats. The purposes and objectives of ensuring the economic security in the region are considered. The method of comparison of the macroeconomic indicators with the threshold values, the method of assessment of the dynamics of changes in the rates of economic growth in the region, and the expert assessment that serves to describe the quantitative and qualitative characteristics of the security level of the region are used to measure the economic security in the region. The indicators of the economic security in the region, which include eight main modules, are presented herein. The consideration of the directions of the state regulation of economic security and the directions of self-organization of economic entities in the region constitutes the feature of the author's approach to the formation of a mechanism for ensuring economic security.
Keywords: economic security, region, potential of the region, maintenance of economic security.

RESUMEN:

La esencia de la seguridad económica se define y la seguridad económica del Distrito Federal de los Urales de Rusia se evalúa en este artículo, basado en la clasificación de las amenazas. Se consideran los propósitos y objetivos de garantizar la seguridad económica en la región. El método de comparación de los indicadores macroeconómicos con los valores umbral, el método de evaluación de la dinámica de los cambios en las tasas de crecimiento económico en la región y la evaluación de expertos que sirve para describir las características cuantitativas y cualitativas del nivel de seguridad de la región se usa para medir la seguridad económica en la región. Los indicadores de la seguridad económica en la región, que incluyen ocho módulos principales, se presentan aquí. La consideración de las direcciones de la regulación estatal de la seguridad económica y las direcciones de autoorganización de las entidades económicas en la región constituye la característica del enfoque del autor para la formación de un mecanismo para garantizar la seguridad económica.
Palabras clave: seguridad económica, región, potencial de la región, mantenimiento de la seguridad económica.

1. Introduction

The issues of ensuring and strengthening the economic security of Russian regions have been considered by such scientists as Vik (2004), Voronin (2001), Dadalko et al. (2014), Chichkanov et al. (2016), Luneev (2013), Rossinskaya (2006), Samoylova (2004) and others. Despite the importance of scientific research in the field of the economic security of the region and risk management, this issue is solved first of all at the level of an economic entity, while the problem of managing the economic security of the region is difficult to attribute to the theoretical systems being formed. In many respects, it is related to the methodology of researching the economic security of the region that has not been fully developed.

Therefore, the purpose of this study is the attempt to reveal the mechanism for ensuring the economic security of the region on the basis of an analysis of the key macroeconomic indicators.

2. Literature review

The politicians, scientists, and experts pay their attention to modern problems of economic security as one of the main conditions for the effective development of the state, society, enterprise and the individual. Therefore, it is so important to identify the essence of the problem, to reveal the existing threats and offer the effective methods for their elimination.

Let us define the following modern trends of the economic security of the country: the unfair competition; a high degree of monopolization in the certain sectors of the economy; the deterioration of the state of scientific and technical potential; the disintegration of the common economic space and a crisis in most regions; the criminalization of certain sectors of the economy; the growth of the influence of administrative risks; the disclosure of trade secrets without the consent of their owners.

Bogdanov (2001), M.D. Kuzmin (2014), Lapygin et al. (1996) and E.A. Kuzmin (2014) interpret the economic security of the region as a certain state of the economy. It should be emphasized that "the overall economic stability and security are the result of selective control over the uncertainty" (Kuzmin, 2015). The basic models of uncertainty in the economy are presented in sufficient detail in the scientific work of Guseva et al. (2017).

Abalkin (1994), and Afontsev (2001) define the economic security as "a combination of conditions and factors that ensure the independence of the economy, its stability and sustainability, the ability to update and improve constantly".

Senchagov (2015) regards the economic security as the willingness and ability of the institutions of power to create the mechanisms for implementation and protection of the national interests in the development of the domestic economy, and the maintenance of the socio-political stability of society.

Summarizing the points of view of the scientists, the authors offer the acceptable interpretation of the concept of “the economic security of the region” as a state of the economy, ensuring a high level of its development, the independence of its economic interests from possible external and internal threats and impacts.

3. Materials and Methods

The economic security should be considered multilaterally. Modern threats to the economic security of the state are both internal and external. Numerous factors: a decrease in the standard of living of the population, considerable inflationary processes, the economic and social gap between the poor and the rich, the possibility of "circumventing" the legislation, create the basis for threats to the economic security of the country and affect adversely the stability of the economic security in Russia.

According to Abalkin, an important aspect of economic security is monitoring and forecasting the factors (Abalkin, 1994) that determine the threats to the economic security of the region.

The assessment of the economic security in the Urals Federal District of Russia is determined by comparing the actual performance indicators to the main indicators: financial, social, production, etc.

The system of indicators of the economic security in the region includes eight modules: the integrated assessment of economic security can be presented in the form of a function that includes the growth rates of the indicators included in the eight main modules.

$$ES = f(ESfin,EStech,ESinn,ESinfr,ESecol,ESleg,ESmanp,ESint) \quad (1)$$

where *ES* is the level of the economic security of the region; *ESfin* is the growth rates of financial indicators in the region, %; *EStech* is the growth rates of technical and technological development indicators of the region, %; *ESinn* is the growth rates of innovative and investment development indicators of the region, %; *ESinfr* is the growth rates of infrastructure development indicators of the region, %; *ESecol* is the growth rates of environmental indicators of the region, %; *ESleg* is the growth rates of political and legal development indicators of the region, %; *ESmanp* is the growth rates of manpower development indicators of the region, %; *ESint* is the growth rates of the intellectual development indicators of the region, %ю

The easy-to-understand scale of relative importance of the priorities and the possibility of assessment of the alternatives according to qualitative and subjectively defined criteria are the advantages of this method. The dynamic model of the regional economic security is built, the negative factors are identified and a mechanism for counteracting the threats to the economic security of the region is developed based on the calculations carried out.

The developed methodology and methodological tools have been tested on the data of macroeconomic development of the subjects of the Urals Federal District of Russia for the period of 2010-2016. In the course of factorial indicators selection, 64 indicators were selected at the first stage. The total number of observations is 630.

4. Results

The economic security should be considered multilaterally. The aim of the regional economic security system is the provision of the sustainable economic development of the country in the interests of meeting social, economic and other needs of the population, the achievement of prosperity, the protection of the economic interests, as well as the economic independence in the most general terms (Konovalov, 2017).

Table 1 shows the dynamics of the main development indicators of the Urals Federal District. The analysis of the dynamics of the data makes it possible to identify the general trends in the structure of the regional economy, since the actual price level reflects the actual changes in the ratio of the shares of the economy sectors.

Table 1

Dynamics of the main macroeconomic development indicators of the region (UFD of the RF)

Indicator	2011	2012	2013	2014	2015	2016	
1. Dynamics of financial indicators							
Gross regional product, %	123.35	112.42	106.62	107.28	110.61	106.62	
Gross regional product per capita, %	123.07	111.91	106.22	106.94	110.27	106.22	
Gross fixed capital formation, %	122.21	110.56	107.05	107.84	100.00	107.05	
2. Dynamics of technical and technological indicators							
Number of enterprises and organizations, %	102.18	96.18	98.45	100.95	102.60	95.71	

Cost of fixed assets, %	115.41	114.72	105.78	113.54	107.94	116.43	
3. Dynamics of innovation and investment indicators							
Investments in fixed assets, %	123.30	110.84	106.39	109.26	99.55	115.82	
Investments in fixed assets per capita, %	123.02	110.34	105.99	108.91	99.25	115.49	
Domestic expenditure on research and development, %	116.87	117.47	111.74	108.04	113.59	114.83	
Research and development organizations, %	117.87	96.72	97.03	104.37	114.64	94.16	
4. Dynamics of infrastructure indicators							
The use of information and communication technologies in organizations, %	99.69	100.10	100.10	97.70	99.89	100.00	
The use of the Internet in organizations, %	103.90	100.00	100.77	100.77	96.95	99.89	
The use of the electronic document management in organizations, %	100.16	97.83	98.41	107.58	93.70	106.08	
5. Dynamics of environmental indicators							
Emissions of pollutants into the atmospheric air, from stationary sources, %	100.41	104.72	85.12	85.34	97.67	100.76	
The use of fresh water, %	99.97	95.59	99.16	125.78	109.92	109.60	
The volume of recycled and consistently used water, %	95.64	98.81	94.23	97.32	97.82	93.76	
The share of captured and neutralized pollutants in the total amount of waste pollutants from stationary sources (percent)	97.97	99.17	102.93	102.03	99.60	98.67	
6. Dynamics of political and legal indicators							
The number of reported crimes per 100,000 people	87.71	90.23	97.97	96.08	105.84	89.29	
7. Dynamics of manpower indicators							
Population size, %	112.06	112.63	109.93	107.30	104.86	106.09	
Real incomes of the population, %	100.70	105.00	103.80	98.40	94.20	92.50	
Average monthly nominal accrued wages of employees of organizations, %	112.06	112.63	109.93	107.30	104.86	106.09	
Average growth rates, %	108.28	110.09	107.89	104.33	101.31	101.56	
8. Dynamics of intellectual indicators							
The number of professional educational organizations, training the qualified workers, employees, %	79.43	71.69	42.86	70.59	86.11	100.00	
Graduation of skilled workers and employees, %	91.86	79.59	101.55	89.80	93.18	53.35	
Graduation of bachelors, specialists, masters, %	96.31	96.44	98.30	97.21	99.31	91.02	
Number of staff engaged in research and							

development, %	102.14	100.67	101.15	101.48	103.24	99.87	

Source: Regions of Russia. Socio-economic indicators – 2017. URL: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1138623506156

Regional economic security depends on internal and external threats. The strong impact of internal and external factors results in regional crisis situations. Regional crisis situations are formed both under the influence of macroeconomic crisis processes and under the influence of the local features of economic and social development, the resource component, the geographic location, national and other characteristics (Frais, 2015).

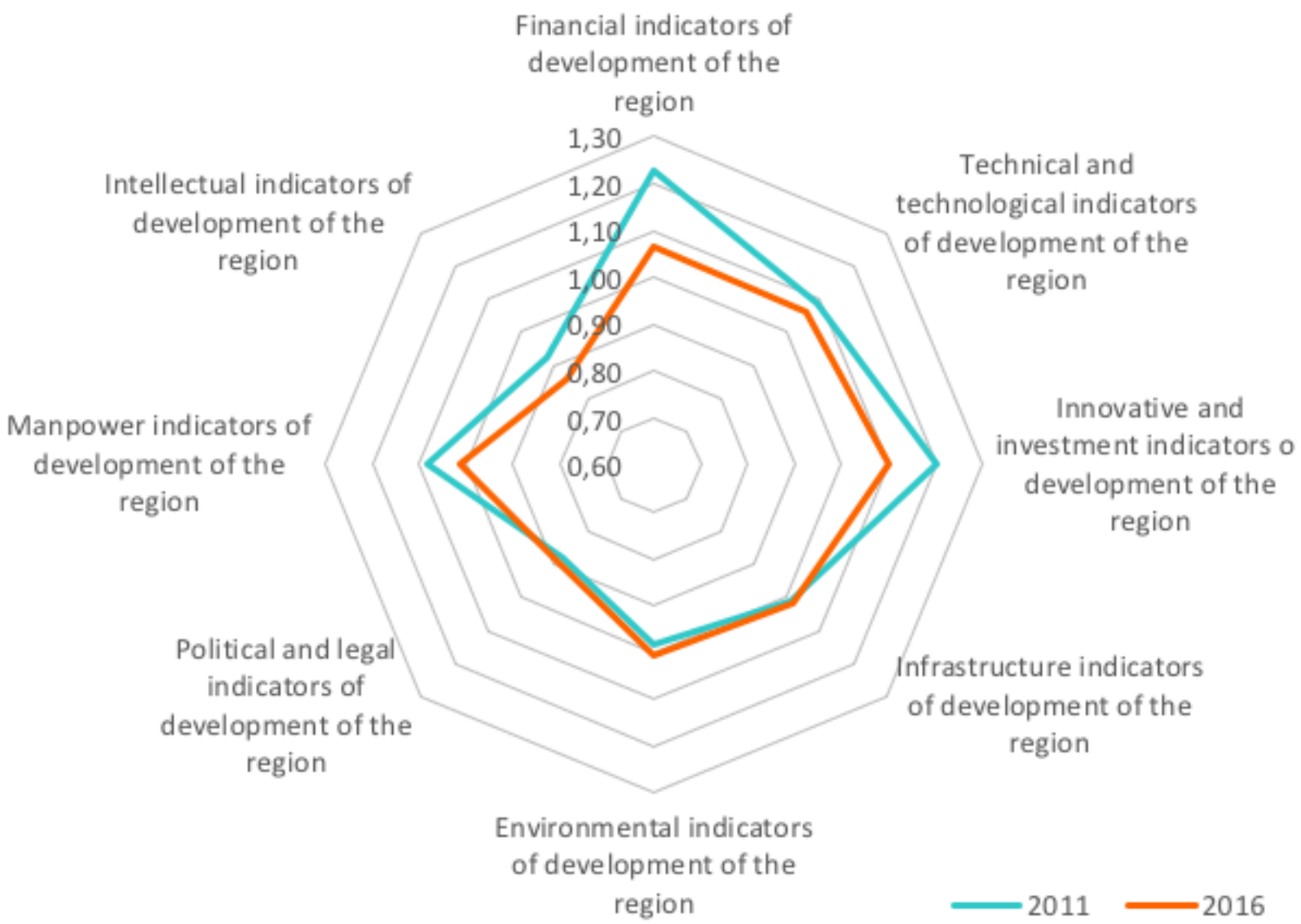
The investment and financial components should be defined based on the assessment of the factors (the components of the integral indicator of economic security). The production component of ES at the regional level is higher than the indicator at the national level. According to this indicator, the Urals District outstrips significantly other districts due to oil and gas production in the Khanty-Mansi and Yamal-Nenets Autonomous Districts.

Table 2
Results of calculation of the indicators

The coefficients of dynamics	2011	2012	2013	2014	2015	2016
1. Financial indicators of development of the region	1.23	1.12	1.07	1.07	1.07	1.07
2. Technical and technological indicators of development of the region	1.09	1.05	1.02	1.07	1.05	1.06
3. Innovative and investment indicators of development of the region	1.20	1.09	1.05	1.08	1.07	1.10
4. Infrastructure indicators of development of the region	1.01	0.99	1.00	1.02	0.97	1.02
5. Environmental indicators of development of the region	0.98	1.00	0.95	1.03	1.01	1.01
6. Political and legal indicators of development of the region	0.88	0.90	0.98	0.96	1.06	0.89
7. Manpower indicators of development of the region	1.08	1.10	1.08	1.04	1.01	1.02
8. Intellectual indicators of development of the region	0.92	0.87	0.86	0.90	0.95	0.86
Level of economic security	*1.41*	*1.10*	*0.99*	*1.17*	*1.21*	*1.00*

Based on the calculated indicators, a dynamic model, characterizing the changes in the level of economic security in the region, can be constructed (Fig. 1).

Fig. 1
Dynamic model of economic security of the Urals Federal District of Russia in 2011 and 2016



Based on Fig. 1, it can be concluded that investment, technological, financial and manpower indicators are growing. The environmental and infrastructure indicators are the most likely threats, affecting adversely the level of the economic security in the region.

5. Discussion

Let us define the following modern trends of the economic security of the UFD: the unfair competition; a high degree of monopolization in the certain sectors of the economy; the deterioration of the state of scientific and technical potential; the disintegration of the common economic space and a crisis in most regions of the UFD; the growth of the influence of administrative risks.

The economic security of the region is primarily associated with the scientific and technical protection of the operation of various industrial, information and other objects, and also the degree of formation of the production, scientific, technical and intellectual potential of the economic system (Smirnova, 2017).

6. Conclusion

The risk classifier has been developed to improve the elimination of the risks. The methodical approach to the assessment of the economic security risks is proposed, based on the consideration of the economic system as a multidimensional system, which can be simulated in the form of a dynamic model consisting of eight different modules.

The proposed methodology, using the system of indicators, makes it possible to carry out the comprehensive assessment of the results of the economic development of the region and to respond promptly to the negative dynamics of the indicators. The findings can be used to develop the efficient risk control system at the regional level.

Acknowledgement

The article is prepared with the financial support of the Russian Foundation for Basic Research, the project "Simulation of uncertainty in the development of networked conjugate

production in order to ensure the economic security", No. 18-010-01021.

Bibliographic references

Abalkin, L.I. (1994). Economic Security of Russia: Threats and Their Elimination. *Voprosi ekonomiki, 12*, 4-13.

Afontsev, S.A. (2001). Discussion Problems of the Concept of National Economic Security. *Russia XXI, 2*, 38-67.

Bogdanov, I.Ya. (2001). *Economic Security of Russia: Theory and Practice*. Moscow: ISPI RAS.

Chichkanov, V.P., Kuklin, A.A., Kosarev, M.N., Naidenov, A.S., Nikulina, N.L., Pecherkina, M.S., Pykhov, P.A., Naslunga, K.S., & Boyarskikh, A.I. (2016). *The Socio-Economic Nature of Regional Crises: The Probability of Manifestation and Intensification of Extremism*. Ekaterinburg: Institute of Economics, UrB RAS. (p. 218).

Dadalko, V.A., Protasov, K.A., & Chekmarev, V.V. (2014). Economic Crime and Its Influence on the Economic Safety of the State. *Bulletin of O.N. Nekrasov Kostroma State University, 20*(6), 119-122.

Frais, V.E. (2015). The State of the Economic Security in the Regions of the Urals Federal District, under Conditions of Destabilization of the Economic Processes. In *Sustainable Development of Russian regions: the Economic Policy in Conditions of External and Internal Shocks: A Compilation of the XII International Scientific and Practical Conference, Ekaterinburg, April 17-18, 2015* (pp. 1326-1331). Ekaterinburg: UrFU.

Guseva, V.E., Ungureanu, L., & Kuzmin, E.A. (2017). Mathematical Models of Uncertainty in Economics. *Journal of Applied Economic Sciences, XII*(3(49), 753-765.

Konovalov, A.A. (2017). Ensuring the Economic Security of a Region. *Rostov Scientific Journal, 4*, 62-67.

Kuzmin, E.A. (2014). The Problem of Uncertainty as a Scientific Category. *Effective Anti-Crisis Management, 3*(84), 90-100.

Kuzmin, E.A. (2015). Fundamentals in Systematics of Uncertainty Management Theory. *Mediterranean Journal of Social Sciences, 6*(5, S2), 380-389.

Kuzmin, M.D. (2014). *"Security" and "Economic Security" as a Category of Social Knowledge* (Ph.D. Thesis). Tyumen.

Lapygin, Yu.N., Gutman, G.V., & Prilepsky, A.I. (1996). *Economic Security of the Region*. Moscow: Nauka.

Luneev, V.V. (2013). Economics and Crime. Problems of Countering the Economic Crime. *The Gaps in Russian Legislation, 6*, 202-209.

Rossinskaya, M.V. (2006). *Methodology for Ensuring Sustainable Development of the Territory within the Framework of Environmental and Economic Security* (Doctoral Thesis)]. Rostov-on-Don.

Samoylova, L.K. (2004). *Methodical Aspects of Assessment of the Economic Security of the Region: Based on Materials of the Orenburg Region* (Ph.D. Thesis). Saint Petersburg.

Senchagov, V.K. (2015). *Economic Security of Russia. General Course: Textbook* (3rd ed., revised and amended). Moscow: BINOM. Laboratoriya. (p. 815).

Smirnova, O.P. (2017). Networked Conjugated Production in the Context of Economic Security. In *Proceedings of the 10th International Winter School on Institutional Economics* (pp. 234-239). Ekaterinburg.

Vik, S.V. (2004). *Industrial Policy as a Factor of Economic Security: Based on the Example of Kemerovo Oblast* (Ph.D. Thesis). Kemerovo.

Voronin, P.M. (2001). *Analysis and Assessment of the Economic Security in the Region* (Ph.D. Thesis). Nizhny Novgorod.

1. Dr. Sci. (Economics), Professor, Institute of Economics of the Ural branch of Russian Academy of Sciences; Ural Federal University named after the First President of Russia B. N. Yeltsin. Contact e-mail: akb_vic@mail.ru

2. Dr. Sci. (Economics), Professor, Kyrgyz-Russian Slavic University named after B.N. Yeltsin. Contact e-mail: ainura_koch@mail.ru

3. Research Fellow (Economics), Institute of Economics of the Ural branch of Russian Academy of Sciences; Ural Federal University named after the First President of Russia B. N. Yeltsin. Contact e-mail: olysmirnova95@gmail.com

---

Revista ESPACIOS. ISSN 0798 1015
Vol. 39 (Number 24) Year 2018

[Index]