

HIERARCHY MODELING OF THE THREATS OF REGIONAL ECONOMIC SECURITY

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DOI: 10.32342/2616-3853-2018-1-11-9

Key words: *region, economic security, threat, method of analytical hierarchy, mathematical modeling.*

The purpose of the research is modeling of the hierarchical structure of the threats to the regional economic security. The economic security is analyzed as the part of the social-economic system of the particular region demonstrating the ability to prevent the destabilizing impact of the threats of different types and guarantee the necessary economic independence.

The main threats to the regional economic security in the modern economic conditions have been defined. The connections between the main threats to the regional economic security of Ukraine have been analyzed. The mathematical modeling method has been applied for the systematization of the detected threats. The degrees of impact, as well as the most significant threats to the regional economic security have been identified.

The hierarchical structure of the threats to the regional economic security has been made to provide the timely prevention and response to the threats.

The methods of theoretical generalization, the system analysis methods to prove the objectivity and reliability of the given model have been applied for the studying and systematization of the key threats to the regional economic security. The hierarchical structure of the given threats to the regional economic security with the help of the hierarchy analysis method has been developed according to the impact and significance for the regional economic security.

The interdependence between the threats has been defined. The relationship between the threats has been demonstrated on the graph. The importance of the group of the legislative and administrative political threats that can appear while implementing the state regional policy has been indicated as a result of research based on the given hierarchical structure. The most important threats include: loss of the markets, population migration, competitiveness of the region, protection and rational use of the natural resources, political instability. The destroying of the regional industrial potential which can become one of the most important leverage to the state economic development has been indicated as the main threat. It has been proved that the support and development of the regional industrial potential can be one of the main priorities of the regional policy.

The developed structural model of the threats to the regional economic security allows develop the system of timely prevention and response to the threats as a part of the preliminary control.

The peculiarity of the given model is its possibility to be modified by changing the relationship between the threats on the first stage of the modeling process while making the preliminary graph. The applied model can be the basis for defining the impact of the threats for the regional economic security and measuring the possibility of the regions to prevent the identified threats.

References

1. Williams, C., Turnbull, J. & Cheit, E. (1982). Economic and social security: social insurance and other approaches. New York, USA: John Wiley & Sons Inc., 608 p.
 2. Poirson, H. (1998). Economic security, private investment, and growth in developing countries. Washington, USA: International Monetary Fund, African Dept., 31 p.
 3. Maull, H. (1984). Raw Materials, Energy and Western Security. London, Basingstoke, The Macmillan Press Ltd., 413 p.
 4. Murdoch, C. (1977). *Economic factors as objects of security; Economics, security and vulnerability*. Economic issues and national security, pp. 67-98.
 5. Varnaliy, Z.S., Burkaltseva, D.D. & Sayenko, O.S. (2011). Economic security of Ukraine: problems and priorities of strengthening. Kyiv: Znannia Ukrainy, 299 p.
 6. Varnaliy, Z., Onishchenko, S. & Masliy, A. (2016). *Threat prevention mechanisms of Ukraine's economic security*, Economic Annals-21, no. 159 (5-6), pp. 20-24.
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7. Holovchenko, O.M. (2008). Economic security of the region as a guarantee of stability of the national economy. Odesa, Bukaiev Vadym Viktorovych Publ., 399 p.
8. Voronkova, T.E. (2014). *The economic security of the region in a hierarchy of economic security*. The Four International Scientific and Practical Conference “Economics and management: development perspectives”. SumDU, pp. 63-65.
9. Stetsenko, S.P. (2013). Patterns mezoekonomichnoho formation of economic security. *Efektivna ekonomika*, no. 3. Available at: <http://www.economy.nayka.com.ua/?op=1&z=2495> (accessed March 2, 2018).
10. Sukrusheva, H.O. (2015). *The theoretical aspects of the concept of economic security of the region*. *Zovnishnia torhivlia: ekonomika, finansy, pravo* - Foreign trade, economics, finance, law, no. 3, pp. 231-238.
11. Zablodska, I.V. (2011). *Balanced regional development as a precondition for its economic security*. *Bulletin of the Volodymyr Dahl East Ukrainian national university*, no. 11, pp. 146-159.
12. O.M. Dyuzhilova & I.V. Vyakina (2015). *Methodology of Risk Analysis and Regional Economic Security Threats*. *Asian Social Science*, vol. 11, no. 20, pp. 74-81.
13. Endress, L.H. (2015). *Sustainable Economic Development*. Resources, Environment and Institutions. Chapter 3 Scarcity, Security, and Sustainable Development, pp. 49-66. Available at: <http://dx.doi.org/10.1016/B978-0-12-800347-3.00003-0> (accessed December 21, 2017).
14. Heiets, V.M., Kyzym, M.O., Klebanova, T.S. & Cherniak, O.I. (2006). Modeling of economic security: state, region, enterprise. Kharkiv: INZhEK, 240 p.
15. Sandri, D. (2014). *Growth and Capital Flows with Risky Entrepreneurship*. *American Economic Journal: Macroeconomics*, no. 6 (3), pp. 102-123. Available at: <http://dx.doi.org/10.1257/mac.6.3.102> (accessed February 12, 2018).
16. Gourio, F. (2013). *Credit Risk and Disaster Risk*. *American Economic Journal: Macroeconomics*, no. 5 (3), pp. 1-34. Available at: <http://dx.doi.org/10.1257/mac.5.3.1> (accessed December 15, 2017).
17. Imrohoroğlu, S. & Kitao, S. (2012). *Social Security Reforms: Benefit Claiming, Labor Force Participation, and Long-Run Sustainability*. *American Economic Journal: Macroeconomics*, no. 4 pp. 96-127. Available at: <http://dx.doi.org/10.1257/mac.4.3.96> (accessed December 14, 2017). (3),
18. Volker, A., & Marion, H. (2010). *Income redistribution and criminality in a growing economy*. *International Review of Law and Economics*, no. 30 (4), pp. 338-344.
19. Chomaa, B., Hanocha, Y., Gummeruma, M., & Hodsonb, G. (2013). *Relations between risk perceptions and socio-political ideology are domain- and ideology- dependent*. *Personality and Individual Differences*, no. 54 (1), pp. 29-34. Available at: <http://dx.doi.org/10.1016/j.paid.2012.07.028> (accessed December 21, 2017).
20. Stern, N. (2013). *The Structure of Economic Modeling of the Potential Impacts of Climate Change: Grafting Gross Underestimation of Risk onto Already Narrow Science Models*. *Journal of Economic Literature*, no. 51 (3), pp. 838-859. Available at: <http://dx.doi.org/10.1257/jel.51.3.838> (accessed March 2, 2018).
21. Saaty, T.L. (1994). *Fundamentals of Decision Making and Priority Theory with the Analytic Hierarchy Process*. Vol. 6. RWS Publications, Pittsburgh, PA, 527 p.

Одержано 30.09.2018.
