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Strategic Management of the Regional Economic Security in the Digital Economy

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Abstract:

The approaches to understanding the concept of 'economic security of a region' have been systemized in the article; the terms have been extended due to the introduction of the concept of 'economic security of a digital infrastructure of a region', and the modern innovative mechanisms for ensuring the economic security of a region in the context of digital transformation have also been summarized.

The most typical threats to economic security for the regions of the Volga Federal District of the Russian Federation in the context of digitalization have been highlighted in the article. The conclusion has been made about the economic security goals of the region, which directly depend on the regional characteristics of the use of digital technologies and the long-term needs of society.

Keywords: economic security of the region; management; scientific and technological advances; digital economy; threats.

JEL Classification: O00; O14; O32; O38.

Introduction

The current realities require to build the further development of the Russian Federation and its regions with due consideration for the challenges of the digital economy, which is confirmed by the practical implementation of the Digital Economy Program, as well as Decree of the President of the Russian Federation V.V. Putin No. 204 dated May 07, 2018 'On national goals and strategic objectives of the development of the Russian Federation through to 2024'.

The ability to ensure the security of regions and the state, in particular from the effects of internal and external threats, determines the degree of competitiveness and the pace of socioeconomic development in the rapidly transforming conditions of the modern economy. This issue is especially relevant in the dynamic development of digital transformation of society.

The goal of the study is to systematize approaches to understanding the essence of the concept of 'economic security of the region' and methods for a comprehensive assessment, to expand the terms due to the introduction of the concept of 'economic security of the digital infrastructure of the region', and to summarize modern innovative mechanisms for ensuring the economic security of the region in the context of digital transformation.

1. Methods

The data used in the study were obtained from official sources presented on the Rosstat website, the websites of Ministries and Departments, the Government of the Samara region, and websites dedicated to the digital economy; the information collected during independent research as a result of surveying the representatives of the business community and data monitoring from social networks was also used in the article.

Traditional logical methods that are widely used for processing information, such as comparison, graphics, studying past experience, expert estimates, coefficients, integrated assessment methods, etc. were used as a toolkit for analysis and allowed to use a scientific approach to justify strategic options for the development of regions in the digital age.

2. Results

The term 'regional economic security' is used in the studies of the elements of the international space distinguished by some criteria. For example, the regional economic security is presented as the level of security of a homogeneous (in the system of a mono-ethnic state) and heterogeneous (in the system of a multinational state) geosociopolis in the works of Bashkunov (2009).

Blinichkina (2018) considers this term in the context of counteracting the current threats to the threats that arise in the region in her works devoted to the study of the regional economic security. The terms 'regional economic security' and 'economic security of the region' are considered as identical concepts in the above writings. For example, Dyachkovsky (2002) notes the following in his writings: 'Regional economic security of the constituent entities of the Russian Federation is the state, capabilities, and abilities of the authorities and society in ensuring sustainable development within the framework of regional policy, in the first place'. The author considers the category of economic security as an integral and complete structure, described by the specific nature of the conditions in which the population of the region lives in, compared with national conditions. This concept is considered as a preventive early warning and response to a crisis situation on a regional scale. According to Cheremisina and Cheremisina (2017), the objects of economic security of a region are the territory of the region and all elements of its economy within that territory. It follows from the context of the article that she considers the constituent entity of the Russian Federation as a region.

The author understands the regional economic security as its combined capabilities and abilities aimed at improving the quality and living standards of the population, leveling the negative impact of internal and external factors, and creating a system for ensuring economic, political, and social stability at the regional level. As for the other group of objects of economic security – elements of the economy within the territory, which is also considered in the above writings, their correlation with the definition indicated a definite lack of a single basis for understanding the essence of the category of 'economic security of the region' (Akhmetshin *et al.* 2018, Hbur 2018).

The analysis of approaches to the definition of the category 'economic security of the region' indicated that each of them had elements that helped reveal the essence of economic security through such concepts as threats, sustainable development, counteraction, etc. However, none of the current definitions reflects the influence of the digitalization of society on the economic security of the region.

An adequate assessment of the state of economic security plays an important role in the development of the modern innovative tools for managing the contemporary regions, which allows obtaining real final data and developing strategic measures to manage threats to economic security in the context of digital transformation (Mohnen, 2013; Cable, 1995). An alternative choice from the existing methodological approaches to assessment can be made using the data presented in Table 1.

Table 1. Methods for assessing the economic security of the regions of the Russian Federation

Authors	Concept of the methodological approach	'Bottlenecks'
M.E. Buyanova, D.A. Dyatlov	The focus is on assessing the financial security of the region. The method provides an insight into the dynamics of the indicator of economic security.	No threshold values
S.N. Mityakov, E.S. Mityakov, N.A. Romanova, A.V. Kopytov, F.S. Makeeva	The method is based on the ranking of indicators depending on the distance from the threshold values. The final score is more accurate, because all indicators are preserved, problem areas and growth points are visible.	Complex formulas for the standardization procedure

Authors	Concept of the methodological approach	'Bottlenecks'
L.P. Goncharenko, E.A. Utkin, A.F. Denisov	The ability to predict the level of economic security in the future is based on a qualitative measurement of damage.	This method is more suitable for an enterprise, but not for a region
N.V. Dyuzhenkova	Accurate assessment of the level of economic security based on multivariate statistical analysis. It provides an opportunity to compare regions not only by each indicator of economic security, but also by the general state of economic security.	Complicated calculations. Methods of mathematical analysis cannot always serve as a reliable tool for assessing the state of socioeconomic processes that occur in the region.
S.V. Guk	This system of assessing the state of economic security will allow monitoring threats to prevent them from reaching a critical state.	There are no threshold values; the likelihood of subjectivity and the inability to prove the results obtained on its basis with the exact characteristics is high.
D.V. Tretyakov	This approach is based on an assessment using an integral indicator. The transition to a single dimensionless quantity, which is very important for the system of proposed indicators having different units of measurement.	Methods of mathematical analysis cannot always serve as a reliable tool for assessing the state of socioeconomic processes that occur in the region.

Considering the modern developments of domestic and foreign scientists and economists, it can be concluded that the economic security of the region as a definition has not been fully studied, and the issue of a generally accepted approach to assessment remains open. The existing approaches to understanding the essence of this system, structural elements, risks, and threats are also subject to discussion.

It must be noted that the proposed methodological approaches to assessing the economic security of the region (Bashkunov 2009, Blinichkina 2018, Dyachkovsky 2002, Cable 1995, Vivchar 2016, Kovaleva *et al.* 2018), especially in the context of digitalization, allow to obtain insufficiently complete assessments, which makes it difficult to develop strategic directions for development, to make adjustments to socioeconomic development programs, and to analyze planned targets.

A structural analysis of indicators of economic security in a regional context is carried out using the scientific approach proposed by Tretyakov (2011), see Table 2. A comparative analysis of the level of economic security in the context of the Volga Federal District regions revealed that each region was described by the presence of a large number of threats to economic security, in particular in the state of scientific potential, as well as the dependence of the regional economy on imports of the most important types of products. Overall, 2018 can be described as a systemic crisis year for all regions. Assessment of economic security by regions of the Volga Federal District for 2018 according to the method of Tretyakov (2011) is presented in Figure 1.

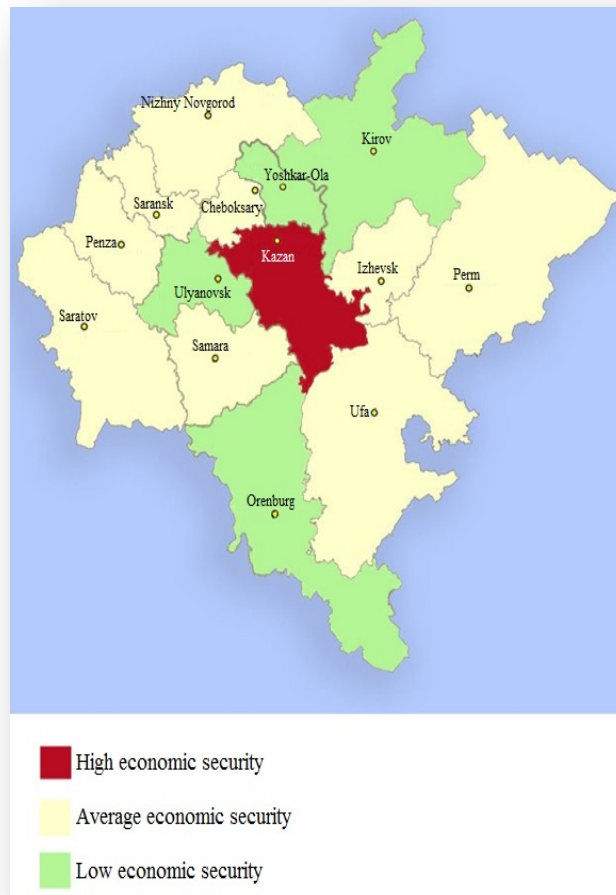
According to the figure, a conclusion can be made about the following distribution of levels of economic security in 2018. For example, four subjects of the Volga Federal District were at a low level of economic security: The Ulyanovsk, Orenburg, and Kirov regions, and the Mari El Republic. The Republic of Tatarstan has a high level of economic security. All other regions of the Volga Federal District have an average level of economic security.

Table 2. Comparative analysis of economic security of the regions in the Volga Federal District in 2018

Region	Ability of the regional economy to sustainable	Ensuring food independence	Financial system sustainability	Support of the scientific potential	Dependence of regional economy on imports of	Level and living standards of population	Demographics	Final grade
Republic of Bashkortostan	normal	normal	normal	normal	normal	normal	normal	normal
Mari El Republic	crisis	normal	low	low	normal	low	normal	low
Republic of Mordovia	low	normal	normal	low	normal	normal	normal	normal
Republic of Tatarstan	high	high	normal	high	normal	high	high	high
Republic of Udmurtia	low	high	normal	normal	normal	low	normal	normal
Chuvash Republic	low	normal	high	normal	normal	normal	normal	normal

Region	Ability of the regional economy to sustainable	Ensuring food independence	Financial system sustainability	Support of the scientific potential	Dependence of regional economy on imports of	Level and living standards of population	Demographics	Final grade
Kirov region	crisis	low	low	crisis	normal	low	low	low
Nizhny Novgorod region	normal	high	normal	normal	normal	normal	normal	normal
Orenburg region	low	normal	normal	low	normal	low	low	low
Penza region	low	normal	low	normal	normal	normal	low	normal
Perm region	normal	low	normal	normal	normal	normal	low	normal
Saratov region	low	high	normal	low	normal	normal	low	normal
Samara region	normal	normal	normal	normal	normal	normal	normal	normal
Ulyanovsk region	Low	normal	low	low	normal	low	low	low

Figure 1. Level of economic security in the Volga Federal District region in 2018



The digital economy sets new trends in the socioeconomic development but also entails a number of threats, especially with regard to information and economic security of both the state and a particular region (Karsuntseva 2013, Massa 2014).

The following most typical threats to economic security for the regions of the Volga Federal District can be distinguished in the context of digitalization:

- decline in production and loss of the domestic market due to insufficient competition with enterprises using digital technologies (Karsuntseva 2019);
- threats of corruption and criminal nature (Kozhevnikova *et al.* 2017);
- economic interests of neighboring regions as competitors in the field of ideological developers of digital technologies;
- unemployment rate growth due to the replacement of manual labor by more efficient machines and equipment operating on the basis of end-to-end digital technologies (Denisova and Karsuntseva 2019);
- violation of the financial support of the territory within individual regions of the Russian Federation and thereby insufficient financing of R&D in the digital economy;
- irreversible environmental degradation;
- gap within regional cooperative ties – for example, the lack of interest of the business community in financing research projects of universities in the digital economy;
- migration of highly qualified personnel outside the region due to the high demand for specialists in digital technologies;
- destruction of the production and technical potential due to the outdated material and technical base of universities, which does not allow the development of solutions for those cross-cutting technologies specified in the digital economy program, etc. (Karsuntseva 2016).

Decree of the President of the Russian Federation No. 204 dated May 07, 2018 ‘On national goals and strategic objectives of the development of the Russian Federation through to 2024’ determines the need to highlight threats to economic security in the context of the introduction of digital technologies by types of national demographics projects, healthcare, education, housing and urban environment, environment, safe and quality roads, labor productivity and employment support, science, culture, small and medium enterprises, and support of individual entrepreneurial initiative, international cooperation, and export.

3. Discussion

The identified threats to the economic security of the regions in the context of digitalization are the most important strategic point for counting the development of a set of measures for their further development in the context of digitalization. At the same time, they must be directly linked with indicators of the regional economic security (Table 3).

Table 3. Map of the impact of threats on economic security of the region in the context of digitalization (fragment)

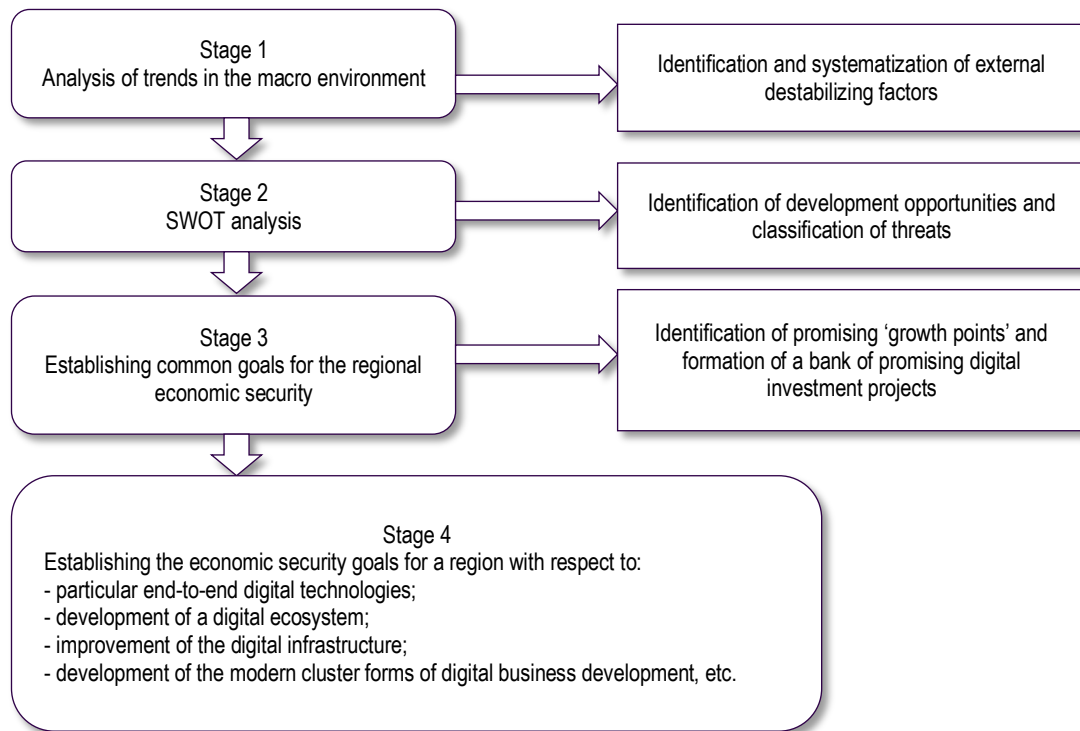
Threat to the economic security of the region	National project	Component of the regional economic security (innovative, investment, environmental, etc.) affected by the threat	Criteria (indicators) of the regional economic security that can be destabilized	Assessment of the threat					Regional economic security
				Type of end-to-end digital technologies to which the threat relates	Probability %	Estimated damage, thous. rub.	Potential damage, thous. rub.	Threat status (expected, prevented, active)	

The analysis of the above map results in the conclusion about the reality of a particular threat, its scale, and components of the regional economic security system, which must be given priority attention. In this case, the information base, which can be used as roadmaps of Ministries, Departments, Governments of the regions, etc., plays an important role in identifying and systematizing threats to the economic security of the region in the context of digitalization. The identification and systematization of threats in the context of the dynamic development of digital technologies is the starting point in the formation of objectives of a comprehensive strategy for the economic security of the region.

The stages of setting the regional economic security goals in the context of the digital ecosystem development are presented in Figure 2.

In turn, the trends in the digital economy under regional conditions are determined by the state of the regional digital infrastructure. As such, the authors consider it appropriate to introduce the concept of ‘economic security of the regional digital infrastructure’, which should be understood as the current ability of the regional digital infrastructure for sustainable development through the use of a set of measures to counter the destabilizing factors of computing, telecommunication, and network capacities integrated in the digital environment, as well as the use of innovative mechanisms of its recovery, with due consideration of the growth factors of the regional economic system.

Figure 2. Stages of establishing the goals of the regional economic security in the context of using digital technologies



Conclusion

Summarizing the above information, it can be stated that setting regional economic security goals depends on regional features in the use of digital technologies and the long-term needs of society. Therefore, the interests of all stakeholders should be taken into account.

The authorities should pay particular attention to an adequate assessment of the innovative potential of regional economies in terms of their readiness for digital transformation. Organizing modern monitoring systems, improving the existing mechanisms of interaction, and creating centers of digital competencies in the regions should play an important role.

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