

Current Problems of the Global Economy in 2023: Geopolitical and Geoeconomic Aspects of Assessment of Development Effectiveness

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Abstract: *Purpose:* The purpose of the presented research is to develop a criterion for assessing the effectiveness of the development of the world economy, taking into account the influence of modern geopolitical and geoeconomic aspects. *Design/methodology/approach:* The authors used the principles and methods of qualimetry that ensure the formation of universal effectiveness criteria that are invariant to the ranges and dimensions of the indicators included in them as a research tool in this work. The object of the study is the economies of the countries of the world. The composition, economic characteristics of the countries of the world, the study of their relationship in statics and dynamics are the subject of the presented research. *Findings:* A new integral criterion for assessing the effectiveness of the development of the world economy has been formed, taking into account:

- the dynamics of global GDP;
- the gap in the dynamics of GDP of various countries of the world for the year;
- the degree of unevenness of the level of economic development of various countries of the world in statics and dynamics (by GDP per capita by PPP);
- the level and dynamics of the gap between the volume of financial assets and the volume of real assets;
- the level and dynamics of the use of non-market instruments in competition (including sanctions pressure on countries);
- the proportion of the population living below the poverty line;
- the level and dynamics of the use of renewable energy sources;
- the dynamics of the pace of climate change (the level of acceleration or deceleration of global warming) under the influence of anthropogenic factors;
- the level and dynamics of global spending on arms (as a percentage of world GDP), etc.

Originality/value: The proposed integral criterion for assessing the effectiveness of the development of the world economy has been created for the first time and takes into account the problems of the development of the world economy in the modern post-industrial era. In this regard, the use of local criteria included in the developed integral criterion for assessing the effectiveness of the development of the world economy makes it possible to determine the necessary management tools to solve the problems of the development of the world economy in the modern post-industrial era.

Keywords: Geopolitical and geoeconomic aspects, integral criterion, assessment of the effectiveness, development of the world economy

JEL codes: F01, F02, F6, D5, D63, D81, Q54

Currently, many processes of a geopolitical and geoeconomic nature are taking place in the world (Tebekin, 2021, 2020), including:

- the ongoing struggle for energy markets (Mitrakhovich et al., 2022), (Tebekin, 2022a,b,c,d);
- the struggle for the markets of high-tech industries (Simachev et al., 2022), (Tebekin, 2021);
- the intensified struggle for political and economic dominance in the world as a whole (Tilikainen, 2020), (Tebekin and Anisimov, 2020) etc.

In order to overcome the prolonged global economic crisis of the 2020s (2020), (2005) with the least losses and to gain competitive advantages after it, it is necessary to have tools that provide the most accurate assessment of the effectiveness of the development of the world economy.

Moreover, it is necessary to highlight not only traditional indicators for assessing the effectiveness of the development of the world economy, but also to introduce indicators reflecting the peculiarities of the development of modern geopolitical and geoeconomic problems of mankind.

These facts predetermined the choice of the research topic.

Materials and Method

The methodological basis of the presented research was made up of well-known approaches to assessing the effectiveness of the development of the world economy by such authors as V.R. Abdullin and R. Z. Abdullin (2018), Brzezinski (2013), Cowan (2004), Dolzhenko and Malyshev (2021), Gorshkova and Zenchenko (2015), Khakhunova (2015), Makarova and Rudyakov (2019), Novikov and Novikova (2020), Simachev et al. (2022), Shlychkov (2020), Soros (2005), Tenyakov et al. (2022), Tilikainen (2020), Trubitsyna et al. (2015), as well as authors' developments on the topic of Tebekin's research (2020-2023).

An analysis of well-known scientific works devoted to the assessment of the effectiveness of the development of the world economy has shown that they do not adequately disclose quantitative criteria for assessing the effectiveness of the development of the world economy.

A certain idea of the assessment of the effectiveness of economic development (but in the country context) is given by the economic development rankings published by the Centre for Human Technologies (2023), shown in Fig.1.

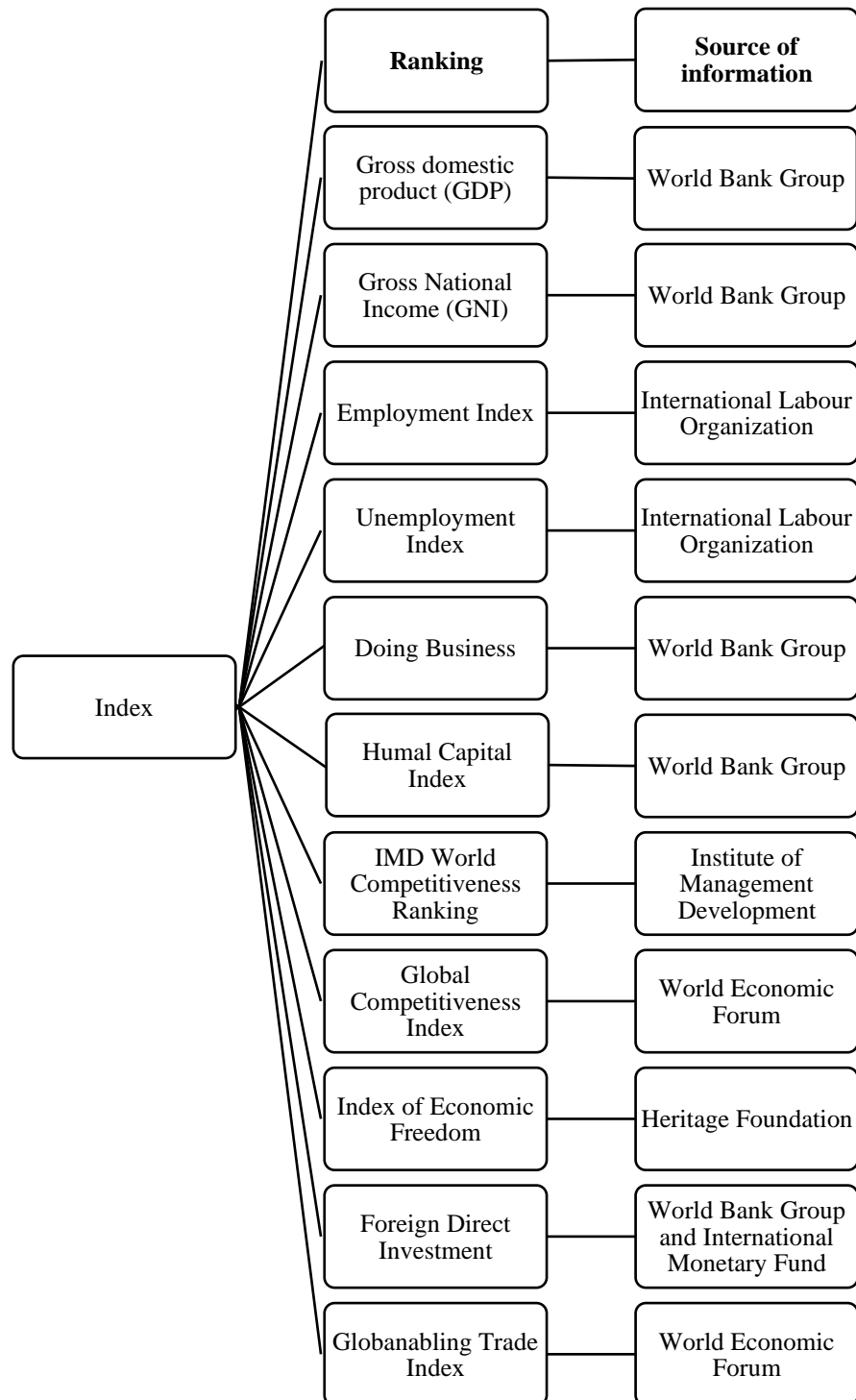


Figure 1

Economic development rankings

Source: Compiled by the authors based on Centre for Human Technologies - Humanitarian Portal (2023)

Experts have a sufficient number of reasonable claims and criticisms to the estimates of such rankings of economic development.

Firstly, the expert method of assessment by many indicators is itself characterized by subjectivity. At the same time, despite the stated high degree of rotation of experts, a number of assessments cannot avoid politicization and bias. For example, according to the Swiss Institute of Management Development (2023), the Russian Federation and Belarus are absent in the world ranking of countries by Global Competitiveness Index, but Estonia and Latvia are present.

Secondly, the economic development rankings published on the Humanitarian Portal of the Center for Humanitarian Technologies (2023) are estimates of individual indicators that can give some comprehensive assessment of the development of a particular country, but are not a system that provides an integral assessment of the level and dynamics of economic development. Thus, indicators of this kind characterizing the effectiveness of the development of the world economy as a whole (especially integrally) are currently absent.

In this regard, this study was based on the most common qualimetric approaches to the quantitative assessment of the effectiveness of the development of the world economy (Table 1), based on the principles of qualimetric assessment (2023), which are demonstrated in Fig. 2.

Table 1
 Qualimetric approaches to the quantitative assessment of the effectiveness of the development of the world economy

	Type of model	Name of the model
1	$K_A = \sum_{i=1}^n \alpha_i \cdot K_i, \quad (1)$ <p>where K_A - integral criterion for assessing the effectiveness of the development of the world economy, calculated by the additive model; K_i - particular i-th criterion for assessing the effectiveness of the development of the world economy; α_i - the weighting coefficient of the particular i-th criterion for assessing the effectiveness of the development of the world economy; n – the number of particular assessment criteria considered.</p>	Additive model of qualimetric assessment
2	$K_M = \prod_{j=1}^m (K_j)^{\beta_j}, \quad (2)$ <p>where K_M - integral criterion for assessing the effectiveness of the development of the world economy, calculated by the multiplicative model; K_j - particular j-th criterion for assessing the effectiveness of the development of the world economy; β_j - the weighting coefficient of the particular j-th criterion for assessing the effectiveness of the development of the world economy; m – the number of particular assessment criteria considered.</p>	Multiplicative model of qualimetric assessment
3	$K_S = \lambda \cdot \sum_{i=1}^n K_i + (1 - \lambda) \cdot \prod_{j=1}^m (K_j)^{\beta_j}, \quad (3)$	Mixed model of qualimetric assessment

where K_s - integral criterion for assessing the effectiveness of the development of the world economy, calculated using the mixed model; λ - the weighting factor of the assessments of the effectiveness of the development of the world economy calculated by the additive model.

Source: Compiled by the authors

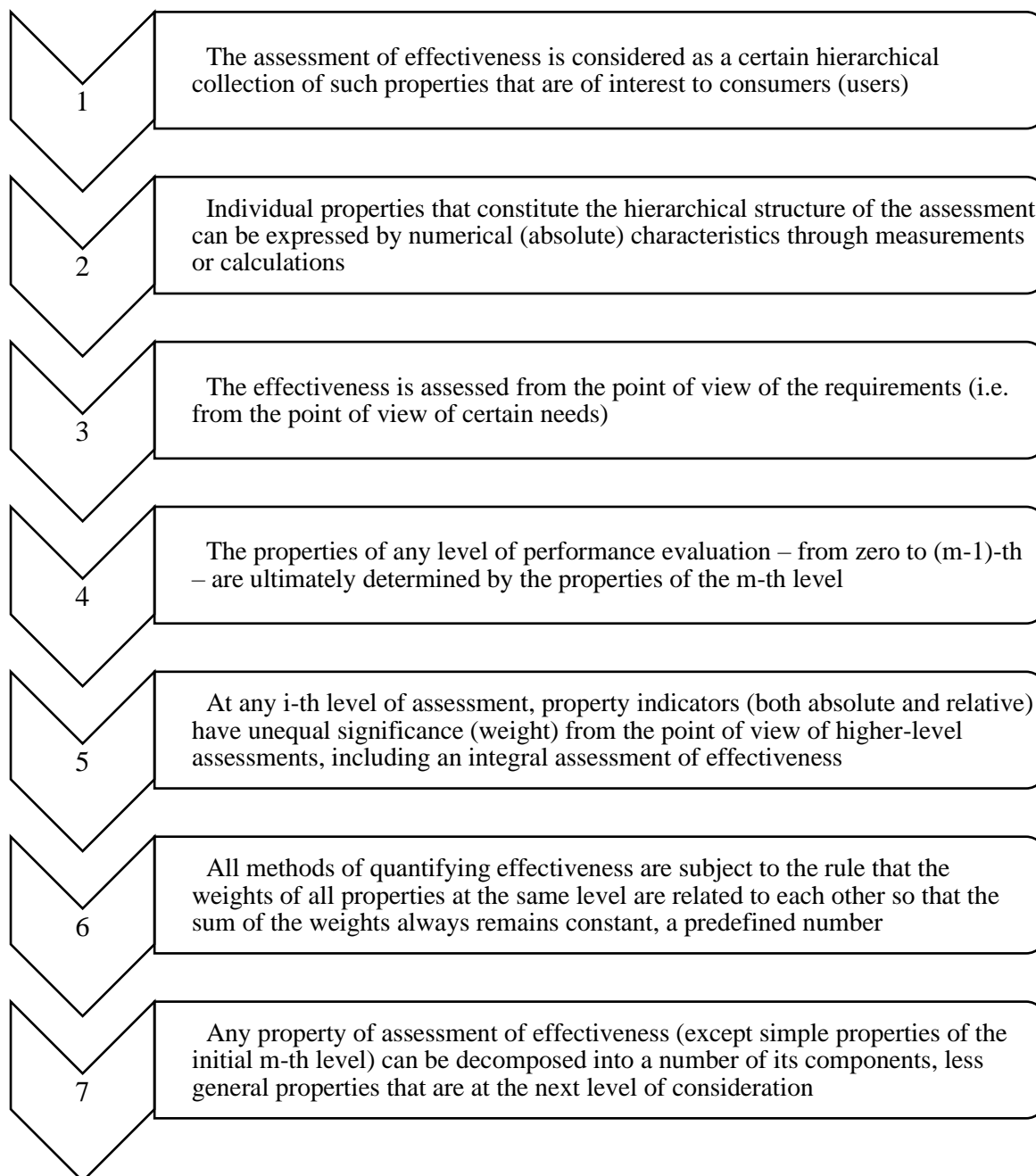


Figure 2

The principles of qualimetric assessment, which are the basis for the quantitative assessment of the effectiveness of the development of the world economy

Source: Compiled by the authors

Results

As a result of the conducted research, the authors selected an additive model of qualimetric assessment of the effectiveness of the development of the world economy, which has the following form (1):

$$K_A = \sum_{i=1}^{n=19} \alpha_i \cdot K_i, \quad (4)$$

where K_1 - criterion for assessing the dynamics of nominal global GDP over the past year;

K_2 - criterion for assessing the gap in the dynamics of nominal GDP of various countries of the world over the past year;

K_3 - criterion for assessing the degree of unevenness of the economic development of various countries of the world in terms of GDP per capita, calculated by PPP;

K_4 - criterion for assessing changes in the degree of unevenness of the economic development of various countries of the world in terms of GDP per capita, calculated by PPP, over the year;

K_5 - criterion for assessing the level of the gap between the volume of financial assets and the volume of real assets in the global economy;

K_6 - criterion for assessing changes in the level of the gap between the volume of financial assets and the volume of real assets in the global economy over the year;

K_7 - criterion for assessing the level of use of non-market instruments in competition (including sanctions pressure on countries);

K_8 - criterion for assessing changes in the level of use of non-market instruments in competition over the year (including sanctions pressure on countries);

K_9 - criterion for assessing the proportion of the world's population living below the poverty line;

K_{10} - criterion for assessing the annual change in the proportion of the world's population living below the poverty line;

K_{11} - criterion for assessing the level of use of renewable energy sources (in the total volume of energy consumption in the world economy);

K_{12} - criterion for assessing changes in the level of use of renewable energy sources over the year (in the total volume of energy consumption in the world economy);

K_{13} - criterion for assessing the dynamics of climate change on the planet over the year under the influence of anthropogenic factors;

K_{14} - criterion for assessing the level of development of human capital on the planet;

K_{15} - criterion for assessing the dynamics of development of human capital on the planet for the year;

K_{16} - criterion for assessing the unemployment rate on the planet;

K_{17} - criterion for assessing changes in the unemployment rate on the planet over the year;

K_{18} - criterion for assessing the level of global spending on arms (as a percentage of world GDP);

K_{19} - criterion for assessing changes in the level of global spending on arms (as a percentage of world GDP);

$\alpha_1, \dots, \alpha_{19}$ - weight coefficients that meet the criteria that are determined by the expert method and must meet the conditions of normalization:

$$\sum_{i=1}^{19} a_i = 1, \quad (5)$$

Discussion

The developed model of qualimetric assessment of the effectiveness of the development of the world economy, combining static and dynamic, direct and indirect assessments has no direct analogues and is a new integral criterion for assessing the effectiveness of the development of the world economy, significantly expanding the possibilities of analysis and evaluation of the processes of world economic development.

The prospects for further research, in our opinion, lie in a detailed description of the approaches to determining each of the particular criteria for assessing the effectiveness of the development of the world economy $K_1 \dots K_{19}$, as well as the procedure for determining the appropriate weighting coefficients $\alpha_1, \dots, \alpha_{19}$.

Conclusion

Thus, as a result of the conducted research, a new model for quantifying the effectiveness of the development of the world economy has been proposed, based on a variant of the additive model of qualimetric assessment and combining static and dynamic assessment indicators, starting from the criteria for assessing the dynamics of nominal world GDP over the past year and criteria for assessing the degree of unevenness of the economic development of various countries of the world by GDP on the per capita, calculated by PPP, and ending with the criteria for assessing changes in the level of use of non-market instruments in competition over the year (including sanctions pressure on countries) and the criteria for assessing the level of global spending on arms (as a percentage of global GDP).

The model is constructed in such a way that all positive values of particular assessments K_i will indicate a positive contribution of the assessment according to the private i -th evaluation criterion to the integral assessment of the effectiveness of the development of the world economy K_A . Conversely, negative values of particular assessments K_i will indicate a negative contribution of the assessment according to the private i -th evaluation criterion to the integral assessment of the effectiveness of the development of the world economy K_A .

This approach makes it possible to identify the most problematic positions in the development of the world economy, constraining the growth of its effectiveness.

In further research, it is proposed to describe in detail the particular criteria for the effectiveness of the development of the world economy of assessments K_i , as well as to determine the values of the corresponding weighting coefficients α_i .

References

- [1] Abdullin, V. R., Abdullin, R. Z. (2018). Economic Growth: Analysis of Transition to Equilibrium State. *Bulletin of Baikal State University*, 28(2), 223–229. DOI: 10.17150/2500-2759.2018.28(2).223-229
- [2] Brzezinski, Z. (2013). *The Grand Chessboard: American Primacy and its Geostrategic Imperatives*. Retrieved from http://www.takeoverworld.info/Grand_Chessboard.pdf (Accessed 20 April 2023)
- [3] Centre for Human Technologies (2023). *Rankings of countries and regions*. Retrieved from <https://gtmarket.ru/research/country-rankings> (Accessed 20 April 2023)
- [4] Cowan, R. (2004). Path dependence, causation and economic policy. *Economic Bulletin of Rostov State University*, 2(4), 10-29.
- [5] Dolzhenko, R. A., Malyshev, D. S. (2021). Development of approaches to labor productivity and its assessment. *Labor economics*, 8(12), 1577-1590. DOI: 10.18334/et.8.12.113989
- [6] Gorshkova, L. V., Zenchenko, S. V. (2015). Definition of criteria for assigning countries to the most developed economies of the world. *Regional problems of economic transformation*, 5(55), 116-120.
- [7] Khakhunova, A. (2015). Development of management efficiency assessment practices: Global trends and WE experience. *World Economy and International Relations*, 2, 47-57. DOI: 10.20542/0131-2227-2015-2-47-57
- [8] Makarova, G. N., Rudyakov, V. A. (2019). Transformation of criteria for the efficiency of economic activity of countries in the conditions of the modern model of globalization. *Historical and economic research*, (2), 261-293.
- [9] Mitrakhovich, S.P., Salikhov, M.R., Yushkov, I.V. (2022). Risk factors in the global energy market: sanctions, geopolitics and the Russian energy sector. Actual interviews *Geoeconomics of energy*, 1(17), 6-33. DOI: 10.48137/2687-0703_2022_17_1_6
- [10] Novikov, A. V. Novikova, I. Ya. (2020). Financial development and economic growth: analysis of approaches to the problem. *Ideas and Ideals*, 12(4-2), 251-266. DOI: 10.17212/2075-0862-2020-12.4.2-251-266
- [11] Simachev, Yu. V., Fedyunina, A. A., Kuzyk, M. G. (2022). New contours of industrial policy. *HSE Report to the XXIII Yasinskaya (April) International Scientific Conference on problems of Economic and Social development*. Retrieved from <https://e-cis.info/upload/iblock/c19/c1943c4b2c7ff7ff8a8cdec59d25e26d.pdf> (Accessed 20 April 2023)
- [12] Shlychkov, V. V. (2020). The world economic crisis of 2020: causes, reasons, features. *Bulletin of Economics, Law and Sociology*, (2), 42-45.
- [13] Soros, G. (2005). *George Soros on globalization*. Retrieved from https://books.google.co.uk/books?id=FRg4DgAAQBAJ&pg=PT111&hl=ru&source=gbs_selected_pages&cad=1#v=onepage&q&f=false (Accessed 20 April 2023)

- [14] Tebekin, A. V. (2020). About the depth of the crisis in 2020 for the world and national economy and ways out of it. *Journal of Economic Research*, (2), 52-71. Retrieved from <https://naukaru.ru/ru/nauka/article/37904/view> (Accessed 20 April 2023)
- [15] Tebekin, A. V. (2021). The political economic aspect of the study of the advancement to a new quality of technology, economy and society. *Bulletin of Tver State University. Series: Economics and Management*, 3(55), 38-54. DOI: 10.26456/2219-1453/2021.3.038-054
- [16] Tebekin, A.V. (2022a). Justification of the approach to the development of criteria for assessing the effectiveness of sustainable development of socio-economic systems. *Transport business of Russia*, (4), 51-57. DOI: 10.52375/20728689_2022_4_51
- [17] Tebekin, A. V. (2022b). Key problems of increasing Russia's rating in the world economy system. *International economy*, (1), 4-21. DOI: 10.33920/vne-04-2201-01
- [18] Tebekin, A. V. (2022c). On the issue of improving the criteria for assessing the quality of public administration. *Journal of Management Studies*. (3), 50-59. Retrieved from <https://naukaru.ru/ru/nauka/article/52299/view> (Accessed 20 April 2023)
- [19] Tebekin, A. V. (2022d). The future of public and private property in the field of energy resources. *Theoretical Economics*, 90(6), 13. DOI: [10.52957/22213260_2022_6_13](https://doi.org/10.52957/22213260_2022_6_13)
- [20] Tebekin, A. V. (2023). *Quality management: a textbook for universities*. 2nd ed., revised. and additional. Moscow: Yurayt Publishing House.
- [21] Tebekin, A. V., Anisimov, E. G. (2020). On the fronts of hybrid warfare in the economic and geopolitical space. *Journal of Management Studies*, (5), 60-74. Retrieved from <https://naukaru.ru/ru/nauka/article/40923/view> (Accessed 20 April 2023)
- [22] Tebekin, A. V., Lomakin, O. E. (2022). Development of performance evaluation criteria measures to adapt the processes of socio-economic development of the country to climate change. *Hydrometeorology and education*, 2, 41-52.
- [23] Tebekin, A.V., Mitropolskaya-Rodionova, N. V., Khoreva, A.V. (2020). Criteria for assessing human capital as a factor in the development of an innovative economy. *Transport business of Russia*, (1), 3-6.
- [24] Tebekin, A.V., Mitropolskaya-Rodionova, N. V., Khoreva, A.V. (2021). The future of public and private property in the conditions of modern industrial, technological and socio-economic transformations (in terms of material production). *Bulletin of the Moscow University of Finance and Law MFUA*, (3), 7-16. DOI: 10.52210/2224669X_2021_3_7
- [25] Tenyakov, I.M., Khubiev, K.A., Epstein, D.B., Zazdravnykh, A.V. (2022). Stagnation in Russia in geopolitical and economic contexts: New alternatives. *Terra Economicus*, 20(2), 40–58. DOI: 10.18522/2073-6606-2022-20-2-40-58
- [26] Tilikainen, T. H. (2020). “The struggle for dominance in the world has not ended — only weapons and strategies have changed”, says an expert on hybrid threats. Retrieved from https://news.rambler.ru/world/45150537/?utm_content=news_media&utm_medium=read_more&utm_source=copylink (Accessed 20 April 2023)
- [27] Trubitsyna, T. I., Krasilnikov, O. Yu., Ogurtsova, E. V. (2015). *Efficiency of the Russian economy: conditions, incentives, restrictions*. Retrieved from https://www.sgu.ru/sites/default/files/documents/2017/effektivnost_ekonomiki_rossii_usloviya_stimuly_ogranicheniya_0.pdf (Accessed 20 April 2023)