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PROBLEMS OF INTELLECTUAL PROPERTY IN THE NATIONAL SECURITY SYSTEM OF THE COUNTRY

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Abstract. The problems of intellectual property as a component of intellectual security in the national security system of the country have been considered. A statistical analysis of the registration of intellectual property in Ukraine for 2015-2019 has been carried out. The assessment of the level of intellectual security of Ukraine has been carried out on the basis of the calculation of the integrated index of intellectual security of Ukraine, which is based on the methodology of integrated assessment, the theory of factor analysis. The results confirmed that the level of intellectual security of Ukraine is low. The integrated index is in the range of the lower limit, which indicates that the state underestimates the importance of preserving, developing and increasing intellectual potential. The low level of intellectual security of Ukraine is largely due to the destructive influence of inhibitory factors, which over time can take the form of real threats. Given the diverse nature, sources and forms of manifestation, the threats of regulatory, institutional, organizational and managerial, economic, subjective, social, global and related nature, which have a destabilizing effect on the state of intellectual security of the state have been distinguished. Special attention was focused on structuring threats to intellectual potential as a strategic resource for strengthening the economic security of Ukraine. In order to achieve the strategic goals of innovation development of the state, the Strategy of development and rational use of intellectual potential to strengthen economic security of the state has been proposed. The main purpose of this strategy consists in strengthening the economic security of Ukraine on the basis of development and rational use of intellectual potential harmonized with intellectual security threats in the economic security system of the state.

Keywords: intellectual property; national security; intellectual security; regulatory support; intellectual potential

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1. Introduction

The problem of national security in a transitional economy becomes particularly acute, as the latter is characterized by numerous negative consequences of reform, manifested in the disintegration of production structures, rupture of economic ties, imbalance between extractive and processing industries, domestic market reduction, regional development imbalances, significant reduction of expenses on research and innovation activities and, as a consequence lowering the level of inventive, patent, licensing and innovation activity, loss of competitiveness of domestic producers, increasing the level of counterfeiting and piracy, etc.

The problem of economic security of Ukraine is decisive in the context of the existence and development of Ukraine as a sovereign state. Economic security is a multifactorial phenomenon that can be considered as a system consisting of such functional components as: financial, social, information, intellectual, technological, military security, environmental security, etc.

Intellectual property is a key aspect of intellectual security in the national security system of each country. Ukraine should continue to create effective mechanisms for the protection and enforcement of intellectual property rights.

At the present stage of formation of the innovation model of economic development of Ukraine, the main driver of economic growth is the intellectual potential as a strategic resource and economic power of the state. Economic stability of highly developed countries is ensured by the introduction of scientific and technological developments and high breakthrough technologies. This objectively puts before Ukraine the task of strengthening scientific, educational and innovation competitiveness, more effective use of intellectual potential as a precondition for economic security of the state.

Elimination of Ukraine's technological lag behind advanced countries is actualized by the influence of destructive factors that take the form of potential and real threats. These include, first of all, the processes of devaluation of moral and spiritual values in society, the real decline in purchasing power and deterioration of the quality of life of the population, extremely slow reform of Ukrainian science and education, the delay in creating a national innovation system.

One of the preconditions for intensifying the development of the national economy is the development and implementation of state policy of development and use of intellectual potential to ensure economic security of the state as a set of software to counter security threats to the cultural, spiritual and scientific-educational base of the national economy. At the state level, a national strategy for the development of science has not yet been developed.

The scientific sphere is characterized by low innovation activity and slow integration of modern organizational forms and methods. When reforming higher education, it is necessary to take into account global trends: intensification of competition between universities for leadership in the global market of educational services, revival of international scientific cooperation, diversification of funding mechanisms for education and research with the state, development of new technologies to improve educational services. These factors determine the relevance of the development and implementation of state policy for the development and use of intellectual potential using a functionally integrated set of tools to counter potential and real threats and outline strategic priorities for strengthening the economic security of the state.

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The purpose of the paper is the formation of methodological foundations, theoretical and methodological approaches and scientific and practical areas to substantiate the strategic priorities and means of development and use of intellectual property and intellectual potential and strengthening the economic security of Ukraine.

2. Literature Survey

There has been made a significant contribution to the theoretical substantiation of the economic nature of human labor and intelligence, scientific thought, business cycles and innovations.

Theoretical and methodological principles of the development of intellectual potential as the main productive force of society are substantiated in the works of Agostini, L., et.al. (2017), Holgersson, M., & Aaboen, L. (2019), Miyashita, S., Katoh, S., Anzai, T., & Sengoku, S. (2020), Laužikas, M., Miliūtė, A., & Khalili, M. (2021) etc.

Economic, philosophical and social aspects of intellectual and human capital are covered in the works of Kim, S. Y., & Kim, E. (2018), Torre, R. D. L., Alcaide-Muñoz, C., & Ollo-López, A. (2019), Tekic, A., & Willoughby, K. W. (2020), Laužikas, M., & Miliūtė, A. (2020) etc.

The studies of theoretical and methodological points and practical problems of economic security of the state in the strategic aspect, including scientific and technological, investment and innovation components are presented in the works of Peng, M. W., Ahlstrom, D., Carraher, S. M., & Shi, W. S. (2017), Efendioglu, N., & Woitsch, R. (2017), Baran, A., & Zhumabaeva, A. (2018).

Given the significant scientific achievements of scientists, today research into the role and place of intellectual potential in the system of economic security of the state, quality development and rational use of intellectual potential, determining the impact of intellectual potential on the level of economic security of the state taking into account its dualistic nature is gaining relevance. Also, there become urgent the issues of substantiation of the conceptual foundations of the study of intellectual security in the economic security system of the state, the development of a set of social and motivational programs for young scientists, borrowing positive world experience in strengthening the economic security of the state. All this conditioned the choice of the subject of the paper, determined its purpose and objectives, as well as the logic of the presentation of the material.

3. Methods

In the process of research there was used the theory of systems, and there was constructed the hierarchical concept of research including the following: the methods of scientific abstraction, induction and deduction, analysis and synthesis, and historical and logical methods (for the generalization of scientific theses and the development of the terminological framework of the theory of security science); comparative analysis (for the comparison of the scientific foundations for the interpretation of the concepts of "intellectual property", "intellectual potential", "intellectual security of the state"); structural and axiological analysis (for outlining the architecture of intellectual potential and the relationship between system components); systematization, theoretical generalization and aggregation (in substantiation of theoretical and methodological approaches and principles to assess the level and threats to the development of intellectual potential of Ukraine); economic and mathematical, analytical and forecasting calculations, in particular, the methods of the theory of sets and mathematical logic, mathematical programming (for calculations of the level of intellectual potential of Ukraine and identification of the dominant trends in its development); data envelopment analysis (in determining the effectiveness of the use of intellectual

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potential in the process of strengthening the economic security of Ukraine); system dynamics modeling (for the identification of causal relationships between motives and factors of effective use of intellectual potential); integrated assessment (for the calculation of the integrated index of intellectual security of Ukraine); fuzzy logic (for the identification of the impact of systemic threats on the level of economic security of the state); system analysis (for the identification of the key trends and achievements in the educational, scientific, cultural and spiritual spheres of developed countries and Ukraine; graphic method (for the visualization of the results of assessment of the development and use of intellectual potential and the level of intellectual security of Ukraine).

The information base of the study is the laws of Ukraine, decrees of the President of Ukraine, resolutions of the Cabinet of Ministers of Ukraine, materials of the State Statistics Service of Ukraine, official publications of international economic organizations (UN, IMF, World Bank, OECP, World Economic Forum), strategic and program documents on the issues of development of national education and science, reform of the national economy, scientific literature, official statistical and analytical-forecast materials, online publications, individual studies and results of the author.

4. Results

The main results of the study. The analysis of the intellectual property market requires a systematic approach taking into account the environment of use of the intellectual potential of the population:

- Analysis level I: analysis of the level of innovation development of the country and its regions aiming to define the structure of the economy based on technological modes, the importance of science-intensive products in GDP, the competitiveness of the economy in the world, etc.; analysis of the intellectual potential of the population, the number of people employed in knowledge-intensive areas of economy, trends of intellectual migration in different spatial scales (global competition for "brains");
- Analysis level II: analysis of the intellectual property market itself, in particular its entities (of business and research, including educational, environment that can be producers and consumers), and objects (results of intellectual activity and their juridical security);
- Analysis level III: analysis of the management environment of the intellectual property market, in particular the participation of the state in the protection and promotion of intellectual activity;
- Analysis level IV: analysis of commercialization of intellectual property items and reflection of this process at the level of innovation development of the country (thus a closed cycle of analysis with level I is formed).

Analysis level I is necessary in the conditions of formation of the world economic space. A wide range of international indices, including the Global Innovation Index, the Global Competitiveness Index, the Global Index of Intellectual Property Protection and others allows determining the level of innovation development of a country on a global scale.

According to the Global Innovation Index, there is a positive dynamics for Ukraine in the rating. Information in this regard is widespread in the Ukrainian media. However, if we take the Global Index of Protection of Intellectual Property Rights, the situation for Ukraine is quite problematic. Among the 125 countries analyzed, Ukraine occupies a very backward position (100th position in 2018). To understand the reasons for this situation, it is necessary to analyze the indicators that form this index in more detail.

The ratings of the Global Index of Intellectual Property Protection have been published annually since 2007 by the International Property Rights Alliance. The index includes indicators of protection of physical and intellectual property rights; in the context of the latter, three factors are the measures of quality and perfection of the

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protection system. They are the protection of intellectual property rights, protection of patent rights, and the level of "piracy" (violation of property rights) (Global Index of Intellectual Property Protection).

Table 1 summarizes the main trends in terms of indicators that form the Global Index of Intellectual Property Protection for Ukraine for 2007-2018. This allows forming a general idea of the key issues and strengths of the national intellectual property market.

Table 1. Ukraine in the Global Index of Intellectual Property Protection ranking

No.	Indicator	Score/position in 2018	Change trend for 12 years	Main positive factors	Main destabilizing factors
1	General index	4.282/100	The highest positions in 2009 and 2014 with significant positive dynamics in 2017	Physical property rights	Political and economic factors
2. Subindexes					
2.1	Political and legal environment	2.685/120	Deterioration in 2014-2016	Legislation	Political situation
2.2	Physical property rights	5.726/98	A sharp decline in 2017 with further growth	Property registration	Access to credit and protection of physical property rights
2.3	Intellectual property rights	4.436/92	A sharp improvement in 2014 with a further decline to the previous stable level	Patent protection	Piracy and copyright infringement

Source: author's study

It should be noted that the current legislation of Ukraine in the field of protection of intellectual property rights is relatively highly valued by international experts. However, the problem lies in compliance with regulations, the manifestation of a sufficient level of legal culture of persons engaged in intellectual activity. Given this, there are also many problems in the legislative field and they are reduced to their practical validity.

Thus, in order to develop the intellectual property market in Ukraine, it is necessary to stabilize the political situation, strengthen lending mechanisms in the field of intellectual activity, as well as fight against mass piracy and copyright infringement. The latter entails many problems that are institutionalized into a global problem. One of the risky manifestations of piracy is the production and trade in counterfeit products, which pose a threat to economic development, health and consumer safety on a global scale, resulting in loss of budget revenues, negative impact on foreign investment, loss of reputation of producers; often such production comes under the control of criminal organizations; software companies estimate annual losses due to illegal duplication of programs up to 13-15 billion US dollars, annual losses of owners of well-known brands from the sale of counterfeit products — up to 100 billion US dollars (Global Index of Intellectual Property Protection). The global nature of this problem encourages Ukraine to be more actively involved in its solving and counteracting piracy in the intellectual property market.

Within the powers provided by the laws of Ukraine "On protection of rights to inventions and utility models", "On protection of rights to industrial designs", "On protection of rights to layout of semiconductor products", "On protection of rights to semiconductor integrated circuit layout design" , "On legal protection of geographical indications", Ukrpatent performs the functions defined by the Ministry for Development of Economy, Trade and

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Agriculture as the authorized government body, including examination of applications for industrial property units, prepares information for state registration of security documents, performs technical administration of state registers.

In 2019, Ukrpatent received about 3.9 thousand applications for inventions, 8.5 thousand applications for utility models, 2.7 thousand applications for industrial designs, and almost 42.2 thousand applications for marks for goods and services (including more than 33.7 thousand applications according to the national procedure) (Figure 1).

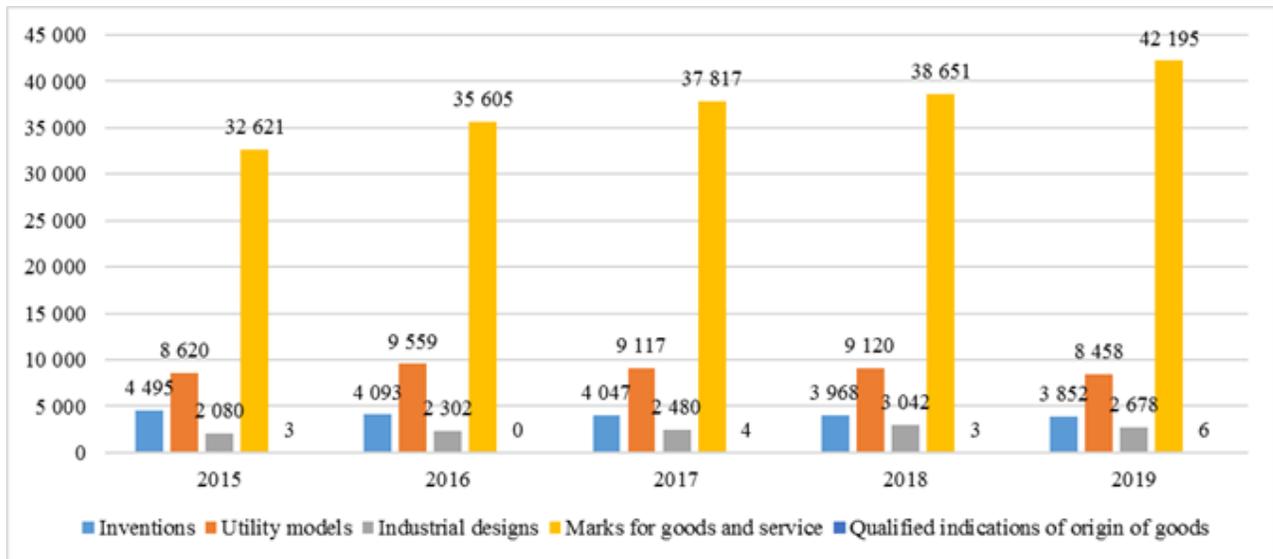


Figure 1. Receipt of applications for industrial property units in Ukraine for 2015-2019

Source: based on the data of the State Enterprise Ukrainian Institute of Intellectual Property (UKRPATENT) (2019)

In 2019, using the system of electronic submission of applications for industrial property units, 14 998 applications were submitted, including 939 (6.3 % of all electronic applications) applications for inventions, 722 (4.8 %) applications for utility models, 771 (5.1 %) applications for industrial designs, and 12 566 (83.8 %) applications for marks for goods and services (Figure 2).

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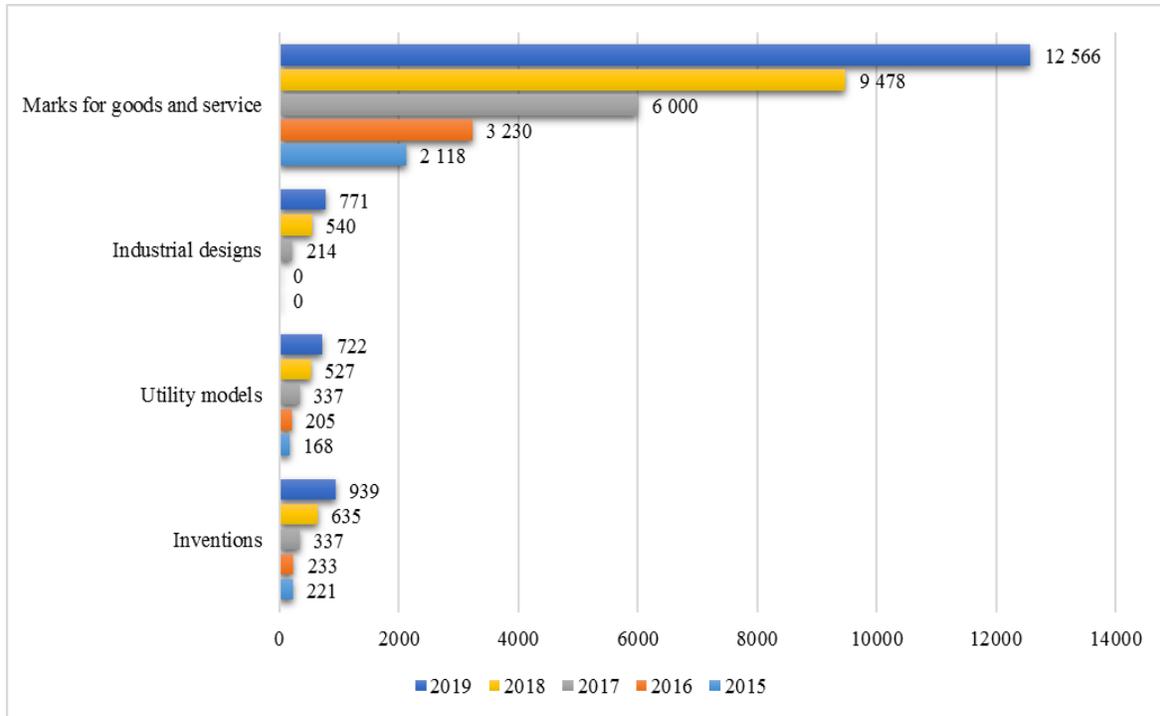


Figure 2. Receipt of electronic applications for industrial property units in Ukraine for 2015-2019

Source: based on the data of the State Enterprise Ukrainian Institute of Intellectual Property (UKRPATENT) (2019)

The activity of national applicants in submission of applications for marks for goods and services increased by 9.1 %, that of foreign ones — by 9.5 % (Figure 3).

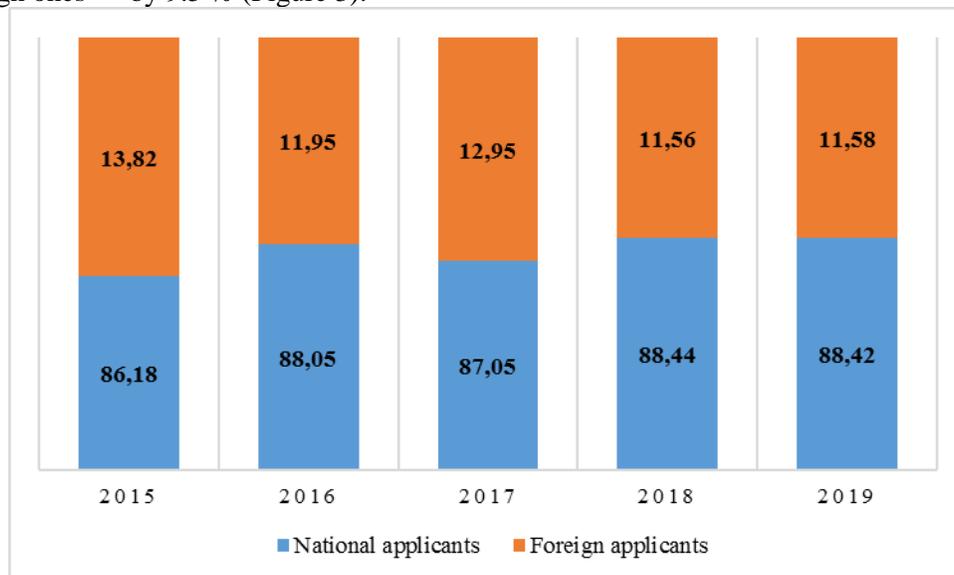


Figure 3. Receipt of applications for marks for goods and services according to the national procedure in Ukraine for 2015-2019

Source: based on the data of the State Enterprise Ukrainian Institute of Intellectual Property (UKRPATENT) (2019)

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The globalization processes of recent decades and the implementation of Ukraine's European integration strategy in the face of adverse external factors and weak protection of Ukraine's intellectual potential raise the issue of guaranteeing Ukraine's intellectual security. The state must ensure the security of intellectual development, because it is intellectual security that serves as a stabilizer of society and determines the ability of the state to mobilize internal intellectual resources to build an innovation model of national economy. This emphasizes the great importance not only of theoretical understanding, but also of empirical study of the problem of strengthening intellectual security, which will allow to clearly define national interests and security objects in the intellectual sphere, and on the basis of thorough analysis of destructive factors to identify real and potential threats.

The system of indicators of intellectual security of Ukraine, which is based on the above principles and fully reflects the state of intellectual security items are shown in Table 2.

Table 2. Ukraine in the Global Index of Intellectual Property Protection ranking

No.	Intellectual security objects	Indicators of intellectual security of Ukraine	Character of influence on security level
1.	Intellectual goods (services)	Volume of output (production) of goods and services in professional, scientific, technical activities and education, % of GDP	Stimulant
2.	Intellectual investments	Share of investments in intangible assets in total capital investments, %	Stimulant
3.	Intelligence bearer	Number of highly qualified specialists per 100 thousand people	Stimulant
4.		Number of highly qualified specialists who left for permanent residence abroad per 100 thousand people	Disincentive
5.	Intellectual institutes	Number of higher education institutions and research organizations per 100 thousand people	Stimulant
6.	Intellectual property items	Coefficient of patent activity (number of issued protection documents: patents for inventions, utility models, industrial designs, certificates for marks of goods and services in the name of national applicants per 10 thousand people)	Stimulant
7.		Number of crimes committed in the field of intellectual property per 100 thousand people	Disincentive
8.	Intellectual potential	Integrated intellectual potential index	Stimulant

Source: author's research

The initial data for further calculations are presented in Table 3, which contains eight main indicators that will determine the integrated intellectual security index of of Ukraine.

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Table 3. Intellectual security indicators of Ukraine

Table 3. Intellectual security indicators of Ukraine Years	Volume of output (production) of goods and services in professional, scientific, technical activities and education, % of GDP	Share of investments in intangible assets in total capital investments, %	Number of highly qualified specialists per 100 thousand people	Number of higher education institutions and research organizations per 100 thousand people	Coefficient of patent activity (number of issued patents for inventions, utility models, industrial designs) per 10 thousand people	Integrated intellectual potential index	Number of highly qualified specialists who left for permanent residence abroad per 100 thousand people	Number of crimes committed in the field of intellectual property per 100 thousand people
2009	12.80	2.8	169.78	3.92	2.31	0.201	0.112	1.02
2010	12.89	3.1	179.92	3.84	2.65	0.204	0.092	1.73
2011	12.79	2.9	187.31	3.78	2.91	0.206	0.112	2.28
2012	12.83	2.3	196.64	3.73	2.87	0.209	0.065	2.30
2013	13.41	3.1	206.76	3.68	2.81	0.213	0.067	2.39
2014	12.44	3.7	214.99	3.61	2.74	0.214	0.085	2.09
2015	11.45	3.6	218.86	3.51	2.87	0.207	0.116	4.12
2016	13.35	2.9	227.53	3.39	2.76	0.215	0.123	3.33
2017	13.80	4.0	234.58	3.23	2.94	0.216	0.062	1.86
2018	7.73	3.4	225.24	2.81	3.17	0.215	0.108	2.90

It should be noted that the character of influence of each indicator on the level of intellectual security of the state will be determined through the identification of each indicator in relation to its direct or inverse influence on the value of the integrated index. In the case of direct dependence, or unidirectional effect of increasing the values of factor indicators on increasing the level of intellectual security, such indicators are called indicators-stimulants. If the increase in the actual values of some indicators reduces the level of security, they are called indicators-disincentives.

The calculated weighing coefficient and values of the integrated intellectual security index for Ukraine are given in Table 4.

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Table 4. Integrated intellectual security index for Ukraine

Years	Volume of output (production) of goods and services in professional, scientific, technical activities and education, % of GDP	Share of investments in intangible assets in total capital investments, %	Number of highly qualified specialists per 100 thousand people	Number of higher education institutions and research organizations per 100 thousand people	Coefficient of patent activity (number of issued patents for inventions, utility models, industrial designs) per 10 thousand people	Integrated intellectual potential index	Number of highly qualified specialists who left for permanent residence abroad per 100 thousand people	Number of crimes committed in the field of intellectual property per 100 thousand people	Integrated intellectual security index for Ukraine
Normalized values									
2009	0.5555	0.6790	0.1680	0.8445	0.6030	0.8910	0.2013	0.0979	0.4029
2010	0.6150	0.7781	0.2053	0.8501	0.6390	0.8729	0.2037	0.0578	0.3957
2011	0.5754	0.8542	0.1682	0.8437	0.6653	0.8581	0.2063	0.0439	0.3791
2012	0.463	0.8444	0.2910	0.8464	0.6984	0.8481	0.2090	0.0435	0.3858
2013	0.6150	0.8245	0.2791	0.8846	0.7344	0.8354	0.2126	0.0419	0.4109
2014	0.7341	0.8053	0.2209	0.8206	0.7636	0.8199	0.2145	0.0478	0.4076
2015	0.7142	0.8436	0.1621	0.7551	0.7774	0.7966	0.2070	0.0243	0.3605
2016	0.5754	0.8112	0.1531	0.8803	0.8082	0.7691	0.2150	0.0300	0.3654
2017	0.7936	0.8645	0.3054	0.9102	0.8332	0.7342	0.2160	0.0537	0.4337
2018	0.6685	0.9310	0.1742	0.5098	0.8102	0.6384	0.2090	0.0344	0.3566
Weighing coefficient	0.212	0.1045	0.0727	0.0929	0.1612	0.1614	0.1595	0.1278	X

Source: author's calculations

We perform an integrated convolution for intellectual security indicators based on the calculation of the time series of the integrated intellectual security index for Ukraine and integrated indices of limit values in a multiplicative form. We notice that the definition of limit values involves calculating the optimal values of the indicator (lower optimal, upper optimal), which characterize the allowable range of values within which the most favorable conditions for economic development are created. In our case, it is the intellectual sphere of the national economy.

For clarity of substantiation of limit values, we use the technique of 't'-criterion: lower limit value — 0.01–0.38 (zone of losses); lower optimal — 0.39–0.59 (threat zone 1); upper optimal — 0.6–0.75 (threat zone 2); upper limit value — 0.76–1.0 (security zone). In order to increase the level of visualization of the obtained time series of the integrated intellectual security index, as well as to establish a relationship with the obtained limit values, we build Figure 4.

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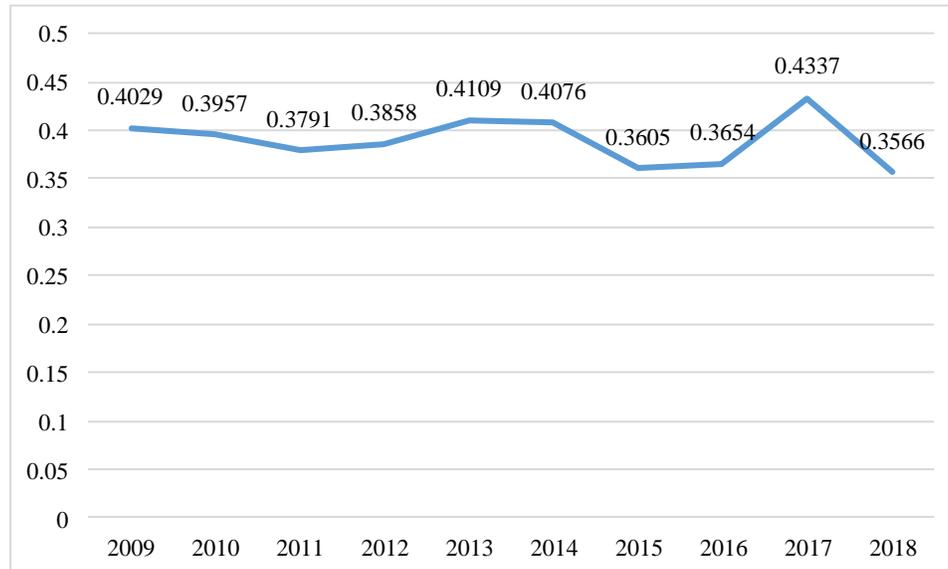


Figure 4. Dynamics of the level of the integrated intellectual security index for Ukraine in 2009-2018

Source: author's research

As can be seen from Figure 4, the intellectual security is at the level of the lower limit value. In our opinion, the intellectual security of Ukraine is at the forefront of other components of economic security, as it covers the educational, scientific and high-tech spheres that represent any country at the international level. In Ukraine the intellectual security is responsible not only for training high-quality specialists, but also for developing strategic priorities in the leading sectors of the national economy. Thus, the intellectual security of Ukraine is the basis for the transition of the economy to an innovation type of management, higher technological modes, the unifying element that, on the one hand, integrates education, science and industry into a single innovation mechanism, and on the other — can provide a higher level economic security of the state.

At the same time, it should be emphasized that, in modern transformation processes, intellectual security objects are the most vulnerable to the destructive influence of threats. In particular, threats to the intellectual security of Ukraine have different origins and sources, are characterized by various forms of manifestation and multilevel structure. It should be noted that the process of identifying threats is preceded by the step of their typology. A thorough analysis of the existing preconditions and factors that can intensify destabilizing actions in the field of intellectual security allowed to identify several types of threats to the intellectual security of Ukraine according to certain criteria.

A separate block of threats to the intellectual security of Ukraine is formed by threats of a regulatory nature due to the lack of legislative initiatives to regulate relations in the field of intellectual security of Ukraine. The most dangerous of them are:

- imperfection of national legislation to ensure national economic security and intellectual one in particular;
- lack of regulatory and legal support of the system of state regulation of intellectual security of Ukraine;
- the absence of the Concept of intellectual security of Ukraine, the implementation of which will minimize the latest threats to the intellectual security of Ukraine, prevent intellectual catastrophe due to ignoring national interests in this field and the lack of an effective management mechanism.

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Significant destabilizing influence on the state of intellectual security of Ukraine is posed by threats of an institutional nature, including:

- the absence of a state institute or a network of institutes that would study the development and implementation of the Strategy of the intellectual momentas of Ukraine in the XXI century;
- insufficient development of the national innovation system with weak relationships of education, science and business. The main lever of the transition of the economy to the intensive growth of social production is the acceleration of innovation processes. The function of generating new ideas and their further commercialization should be performed by an innovation system with a branched organizational and functional structure. Unfortunately, the processes of building a national innovation system are still at an early stage;
- imbalance of powers between state authorities and local self-government, inconsistency of inter-budgetary relations regarding the establishment and delimitation of budgetary powers, financial resources, rights, duties and responsibilities during the budget process;
- corruption loyalty, which becomes the basis of systemic corruption in all branches of government;
- lack of interest of government institutions in establishing "transparent" rules for market participants in the process of regulation of economic relations between state institutions, firms and households, bureaucratic delays in registration of property rights to intellectual and industrial property. The lack of an appropriate institutional environment based on the principles of general moral consciousness of market participants and formal rules of conduct leads to an increase in transaction costs in carrying out economic activities.

A number of threats to the intellectual security of Ukraine are associated with the insufficient level of organizational and managerial decision-making due to:

- low efficiency of state administration, incompetence of state authorities, transformation of corruption into a basic social mechanism for solving public affairs, performance of functions of external influence agents by many government officials and politicians resulting in mass distrust of existing state institutions;
- low intellectual level of state decision-making; insufficient level of qualification of decision-makers in the field of state powers; high degree of influence of lobby groups on government decision-making;
- lack of an effective system of reproduction and thus enrichment and development of the intellectual potential of the state aimed at strengthening the economic security of the state;
- lack of effective organizational and managerial mechanisms to stimulate intellectual activity at the micro and macro levels;
- inefficiency of the system of control over the spending of budget funds, in particular for scientific purposes, financing of scientific and technical projects.

Of particular concern are domestic threats of an economic nature resulting from ineffective macroeconomic policies. Negative trends are strengthened by such destructive factors as:

- growth of economic crimes of intellectual content, shadowing of the national economy in terms of unauthorized access to information sources, pirate copying and distribution of items copyright and related rights;
- lack of state policy on the use of intellectual resources, deintellectualization of society and government in general;
- lack of investment resources and, as a consequence, limited innovation development as a guarantee of strengthening the intellectual security of Ukraine;
- uncontrolled and illegal outflow of intellectual and human capital outside Ukraine, a decrease in the level of "intellectualization" of exports accompanied by an increase in the import dependence on high-tech goods of the country;

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- lack of intellectual security policy.

5. Discussion

In modern conditions, the intensification of the processes of accumulation of intellectual potential of Ukraine requires the development of scientifically sound state policy, the adoption of effective measures to combat threats to its development. Active participation of the state in the regulation of processes related to preventing the process of degradation and destruction of intellectual potential involves the development of adequate mechanisms to combat numerous threats. In our opinion, the state policy of development and use of intellectual potential of Ukraine should be implemented in the context of the state policy of protection of national interests and strategy of national security.

The current legal framework partially defines national priorities and strategic directions of state policy in the system of protection of national interests, however, such important issues as preservation and development of intellectual potential of Ukraine, minimization of threats in the intellectual sphere, taking measures to intensify innovation processes, etc. remain unaddressed. The recently adopted National Security Strategy of Ukraine envisages the main directions of the state policy of national security of Ukraine. In our opinion, the most important of them are the following: minimization of threats to state sovereignty and creation of conditions for restoration of territorial integrity of Ukraine within the internationally recognized state border of Ukraine, guarantee of peaceful future of Ukraine as sovereign and independent, democratic, social, legal state; affirmation of human and civil rights and freedoms, ensuring a new quality of economic, social and humanitarian development, ensuring the integration of Ukraine into the European Union and creating conditions for joining NATO (National Security Strategy of Ukraine (2015)).

According to Art. 6 of the Law of Ukraine "On Fundamentals of National Security of Ukraine" the priorities of national interests include: preservation and strengthening of scientific and technological potential, approval of an innovation model of development; development of spirituality, moral principles, intellectual potential of the Ukrainian people, strengthening of physical health of the nation, creation of conditions for the expanded reproduction of the population. At the same time, Art. 7 presents a number of threats to national interests in the intellectual sphere (On Fundamentals of National Security of Ukraine (2003)), which, of course, highlights the need for formation of state policy of development and use of intellectual potential of Ukraine.

The decisive role in intensifying innovation processes on the basis of effective use of existing intellectual potential belongs to the state, which must reasonably shape macroeconomic policy taking into account the specifics of the national economy. In our opinion, the state policy of development and use of intellectual potential of Ukraine as a component of the national policy, which is carried out according to the declared purposes and objectives, is based on general scientific and organizational-administrative principles and is implemented by means of the mechanism of combating the threats to development of intellectual potential of Ukraine.

We emphasize that the key idea of the state policy of development and use of intellectual potential of Ukraine is conditioned by the inward nature of potential and real threats, the nature of their occurrence and the form of manifestation. It should be implemented with the help of appropriate tools and conditioned by certain functional tasks.

1. Monitoring and identification of potential threats through a set of observations on the condition of a security object, development of threat profiles.

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2. Application of effective preventive methods of combating threats with the use of modern information technologies, means of communication, etc.
3. Localization of realized threats to the development of the intellectual potential of the state with the purpose of preventing their deepening and causing serious damages and losses.
4. Preventing further decline of intellectual potential and deepening of the intellectual crisis in society by adopting appropriate legal documents, reviving the investment and innovation climate, improving the social protection of intellectual workers, etc.

The above tasks of the state policy of development and use of intellectual potential of Ukraine are intended to promote the earliest possible decision-making on prevention and/or neutralization of threats and to create a positive environment for fast restoration of national intellectual potential and transition to the stage of its enrichment.

The implementation of the above directions of accumulation of intellectual potential of Ukraine will be enhanced by the action of such factors: recognition as a priority area of intellectual development through the adoption of an appropriate strategy or program; increasing the public assessment of knowledge and prestige of creative work and intellectual activity in general through the encouragement of invention, the award of scientific scholarships, assistance in obtaining Ukrainian and international grants for research; creation of favorable conditions for active implementation of technology transfer, Ukrainian and foreign investment in priority knowledge-intensive industries (status of free economic zones, tax benefits, tax credits, government orders, state guarantees of copyright protection, assistance in patent activities, guaranteed return on investment, etc.); state support of knowledge-intensive and high-tech industries and priority sectors of the national economy; creation of favorable conditions for growth of competitiveness of national economy; rational use of available intellectual resources, creation of conditions for commercialization of scientific knowledge, stimulation of investments in intangible assets; support for social partnership institutions that provide sustainable, effective relationships with employers, educational institutions and the population.

Conclusions

Intellectual security, as an integral part of the system of economic security of the state reflecting the degree of development and use of intellectual potential, tactically characterizes the state of the intellectual environment of society and strategically has a positive impact on macroeconomic indicators. Substantiation of the collocation relationship of intellectual potential with the system of economic security proves that intellectual security serves as a basis for the formation of national competitiveness on the basis of innovation development of education and science, institutional infrastructure, entrepreneurship.

According to the object-subject approach, the intellectual security of the state is structured into objects and subjects, which are influenced by destructive factors and threats, and on this basis an integrated set of indicators for assessing the level of intellectual security of the state is formed and methodological points for determining the integrated intellectual security index of the state is substantiated. The obtained results demonstrated that the calculated index values are between the lower limit and the lower optimal values, which reflects the ineffectiveness of state education and research and innovation policy and underestimation by state authorities of their role in strengthening economic security in the global environment, which is the main reason for the low level of intellectual security (36% in 2018 against 40% in 2009) as confirmed in the paper.

In order to achieve the strategic goals of innovation development of the state, the Strategy of development and rational use of intellectual potential to strengthen the economic security of the state is proposed, the main purpose

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of which is to strengthen the economic security of Ukraine on the basis of the development and rational use of intellectual potential harmonized with the means of combating threats to intellectual security in the system of economic security of the state. The priority directions for the implementation of the Strategy include: modernization of the system of training of specialists for the high-tech industries; reform of the scientific sphere of Ukraine with the purpose of integration into the global scientific space; raising the cultural and spiritual level of the nation to harmonize social relations; development of high-tech industries as a basis for building a competitive innovation economy.

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