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XXI CENTURY: NATIONAL AND
GEOPOLITICAL ASPECTS. ISSUE 2**

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PREFACE

The issues of security management in the conditions of the modern environment instability are of top-priority and stipulate continuous scientific research on the topics of the global and national economic, technological, food, energy security, innovation aspects of forming social, educational, and information security, management of economic security in conditions of integration processes and other.

In the early 21st century, the world faces with cardinal transformations accompanied by changes in geopolitical configurations, integration processes and other changes that affect the state of national and geopolitical security. The events of the last decade have revealed an exacerbation of the problems of global security and the ambiguous impact of the processes of globalization on the development of different countries. Under the circumstances, the rivalry between the leading countries for redistribution of spheres of influence is stirring up and the threat of the use of force methods in sorting out differences between them is increasing. The global escalation of terrorism has become real, the flow of illegal migration and the probability of the emergence of new nuclear states are steadily increasing, and international organized crime is becoming a threat. In addition, in many countries there is an exacerbation of socio-political and socio-economic problems that are transforming into armed conflicts, the escalation of which is a real threat to international peace and stability. These and other factors have led to the fact that the potential of threats to global and national security has reached a level where, without developing a system state policy to protect national interests and appropriate mechanisms of its implementation, there may be a question of the existence of individual countries as sovereign states.

The threat of danger is an immanent, integral component of the process of civilization advancement, which has its stages, parameters and specific nature. Obviously, the problem of security in general, and national one in particular, should be objectively considered in terms of its role participation in the development process, that is, to set it up as both destructive and constructive functions (as regards the latter, it is necessary to emphasize the undeniable fact that the phenomenon of safety is based on counteraction to the phenomena of danger, the necessity of protection from which exactly stimulates the process of accelerating the search for effective mechanisms of counteraction).

The formation of new integration economic relations in Ukraine and the intensification of competition objectively force managers of all levels to change radically the spectrum of views on the processes of formation and implementation of the security management system in unstable external environment that is hard to predict. Today, the main task is to adapt not to changes in market conditions of operation, but to the speed of these changes. In this regard, there is a need to develop effective security management mechanisms that are capable of responding adequately and in due time to changes both in the internal and external environment.

Therefore, this problem is being paid more attention in theoretical research works of scientists and practical activity of business entities.

Taking into account the fact that the traditional means of national and geopolitical security as a mechanism in its various models, forms, systems have reached their limits, since they do not contribute to solving the problems of globalization of the civilization development, there is an objective need to form a paradigm of security management in the 21st century, which aims to confront destruction processes; to harmonize activities of socio-economic systems: society, organization, the state, the world. The joint monograph «Security management of the XXI century: national and geopolitical aspects. Issue 2» is devoted to these and other problems. The progress in the development of the theory of security management on the basis of the analysis of theoretical and methodological works of scientists and the experience of skilled workers presented in the joint monograph creates opportunities for the practical use of the accumulated experience, and their implementation should become the basis for choosing the focus for further research aimed at improving the security management system at the national and international levels. In the joint monograph, considerable attention is paid to solving practical problems connected with the formation of the organizational and legal mechanism of organization of the security system in terms of globalization by developing methods, principles, levers and tools of management taking into account modern scientific approaches.

In the monograph, the research results and scientific viewpoints of the authors of different countries are presented in connection with the following aspects of security management: national security, food, environmental and biological security, economic and financial security, social security, personnel and education security, technological and energy security, information and cyber security, geopolitical security.

The authors have performed a very wide range of tasks – from the formation of conceptual principles of security management at the micro, macro and world levels to the applied aspects of management of individual components of national security.

The monograph «Security management of the XXI century: national and geopolitical aspects. Issue 2» consists of four parts, each of which is a logical consideration of the common problem.

The structure of the monograph, namely the presence of particular parts, helps to focus on the conceptual issues of the formation and development of national, economic, financial, social, food, environmental, biological, personnel, educational, technological, energy, information, geopolitical security, and problems of the maintenance of the practical process of application of the developed cases.

The joint monograph is prepared in the context of three research topics: «Management of national security in the context of globalization challenges: macro, micro, regional and sectoral levels» (State registration number 0118U005209); «Macroeconomic planning and management of the higher education system of Ukraine: philosophy and methodology» (State registration number 117U002531); «Infocommunication aspects of economic security» (Protocol 1-20 of February 04,

2020, ISMA, Latvia), which emphasizes not only scientific but also practical focus.

The results of the research works presented in the joint monograph have a research and practice value.

The advantage of the joint monograph is the system and logic of the structure, the simplicity and accessibility of the material presentation, the presence of examples and illustrations.

We believe that the monograph will become one more step towards a scientific solution of the problems concerning the formation of an effective system of security management under trying circumstances of globalization.

Publication of the monograph «Security Management of the XXI century: National and Geopolitical Aspects» is scheduled to be annual. Currently, Issue 2 is offered to our readers.

With best regards,

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GAME-THEORETIC MODELING OF NEGOTIATIONS BETWEEN UKRAINE AND RUSSIA IN A HYBRID INFORMATION WAR

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Today the real plans of the government to return Crimea and normalize the situation in Donetsk and Lugansk regions are unknown to the people. This makes it impossible to attract a wide range of scientists, analysts and experts to discuss the situation and to the formation of public opinion. It seems that the government focuses only on foreign sanctions and has very little effect on changing the situation for the better. This position is especially evident in relation to Crimea: for the public of Ukraine, the government offers nothing but slogans such as «Crimea will be Ukrainian».

At the same time, the situation around Crimea and the Donetsk and Lugansk regions is becoming increasingly aggravated. As a result, continued disregard by the government of current problems, hiding from the public plans to reduce tension leads to increased tension among the population of Ukraine.

Thus, the development of approaches to the project of returning the Crimea and normalizing the situation in Donetsk and Lugansk regions is an urgent scientific problem and its practical value for Ukraine is to ensure national security and further economic and social development

The collapse of the USSR has led to the fact that the system of agreements on collective inviolability of the borders of the countries which was formed during the Cold War [1] has lost its validity. Initially, new independent Baltic countries – Estonia, Latvia and Lithuania were created. Other countries of the former USSR gained independence as a result of its destruction as a sovereign state. German unification happened. The disintegration of Yugoslavia and the creation of independent countries in its territory. This was accompanied by direct hostilities. Finally the peaceful breakup of Czechoslovakia into two new separate countries – the Czech Republic and Slovakia – was happened.

Thus, from the early 1990s to the present day, Europe's political map has been changing almost constantly.

The Russian Federation has also created several situations that have led to the creation in the independent countries – Moldova and Georgia – the separate regions outside the legal field of these countries. However, the Russian Federation used direct military aggression only in Georgia. In Moldova, the situation is similar to the situation in Ukraine for certain regions of Donetsk and Lugansk regions.

Thus today Ukraine doesn't governed by international legal law. This right allows for direct military aggression which is aimed at:

- 1) annexation of the territory that previously belonged to another country (Crimea);
- 2) the division of a previously independent country into separate independents legally (Yugoslavia) or in fact (Georgia);
- 3) the creation of non-controlled territories in the previously independent countries (Prydnistrovie in Moldova, Kosovo in Serbia, Abkhazia and South Ossetia in Georgia, and now Donetsk and Lugansk «independent republics»).

This compels Ukraine to find the new opportunities that can be based on both multilateral international treaties and bilateral international treaties.

Today the only multilateral agreement which Ukraine can use is the Budapest agreement. It was signed in 1994 by governments of nuclear power countries and had guaranteed the territorial integrity of Ukraine. One of the signatories of this agreement was the Russian Federation. Opportunities and prospects for Ukraine's activities in this direction were offered in detail in [2].

The so-called «Minsk Agreements» as the course of events over 2 years has shown are legally inoperative. As experience has shown in the implementation of these agreements, Germany and France are unable to enforce them. Now there is no mechanism for compliance the Minsk Agreements: neither to verify their implementation nor to be held responsible for their failure.

Economic and political sanctions imposed by a number of countries (for

example, for Russia) have also proved ineffective. Moreover, today they are too burdensome for the economies of a number of countries, especially Europe. And today the European Union is abandoning political sanctions. For example, the PACE lifted the Russian Federation's exclusion from the organization.

A number of European countries are actively using direct agreements with the Russian Federation, despite the economic and political sanctions imposed on the European Union against Russia. For example, Germany continues its economic cooperation with Russia in the construction of the «Nord Stream 2» pipeline.

Thus, bilateral agreements today are a very effective means of reconciling the interests of states.

The purpose of the article is to build a game-theoretic model for analyzing the possibilities of bilateral agreements between Ukraine and Russia regarding the regions of Donetsk and Lugansk regions or Crimea that are not under control of Ukraine.

Theoretical and game model. Let's consider the situation for Ukraine and Russia regarding Donetsk and Lugansk regions or Crimea as a dynamic game.

The first step has to do the Ukraine because the current situation satisfies only Russia.

Ukraine may offer negotiations regarding Crimea and «Donetsk and Lugansk People's Republics» in a single package or separate on each of them.

The further presentation will be focused on negotiations on the Crimean region since negotiations on the Donetsk and Lugansk regions are already taking place. However, they are not bilateral, but multilateral, within the Minsk Agreements and the so-called «Norman Format» as part of Ukraine, Russia, France and Germany. A more detailed discussion will be made below.

We will not consider the format of negotiations or their structure. We will build a game-theoretic model to identify the strategy for which the interests of Ukraine and the Russian Federation will be agreed.

So it has been over 5 years since Crimea was annexed by Russia. During this time, a real program for the return of Crimea, apart from the hope of sanctions from foreign states, was not offered by the state authorities and the administration of Ukraine. At the same time the negative situations around Crimea that arise due to the necessity of functioning of the state of Ukraine (economic activity, relocation of military units, etc.) are only accumulating. The lack of mechanisms to resolve them not only leads to significant economic losses but also damages Ukraine's reputation and, in some cases, increases political tensions in Europe.

It should also be noted that no functionary of state authorities and government of Russia for many years in the future will even raise the issue of «return of the Crimea»: this would mean «political suicide» for him. And it is not only because of *V. Putin* or *D. Medvedev*. Their “successors” will also adhere to the current policy of belonging to the Crimea: public opinion «will not forgive» even statements about «return».

In general, there are three possible strategies for Ukraine (they will be referred

to as U).

Strategy U_1 . To continue its present activities without offering any negotiations or steps on Crimea.

Strategy U_2 . Propose approaches to resolving the conflict over Crimea and the Donetsk and Lugansk People's Republics by a single package.

Strategy U_3 . To propose approaches to resolving conflict issues between Ukraine and Russia only in relation to Crimea.

There are such strategies for Russia (they will be referred to as R).

In response to Ukraine's strategy, U_1

Strategy R_1 . To continue its present activities without offering any negotiations or steps on Crimea.

Strategy R_2 . To propose their approaches to resolving conflict issues between Ukraine and Russia only in relation to Crimea.

We do not even consider the strategy of offering a «single package» for Russia, as Russia denies its involvement in the situation in the Donetsk and Lugansk regions.

In response to Ukraine's U_2 strategy.

Strategy R_1 . Russia's refusal to negotiate.

Strategy R_2 . Agreement by a single package "Crimea + Donetsk and Lugansk People's Republics".

Strategy R_3 . Offer your own version of the agreement to resolve conflict issues between Ukraine and Russia only in Crimea.

In response to Ukraine's strategy, U_3 .

Strategy R_1 . Refusal of negotiations.

Strategy R_2 . Agreement by a single package "Crimea + Donetsk and Lugansk People's Republics".

Strategy R_3 . Consent to the Crimea agreement and negotiation to obtain a result.

Thus, the dynamic game can be represented by fig. 1.

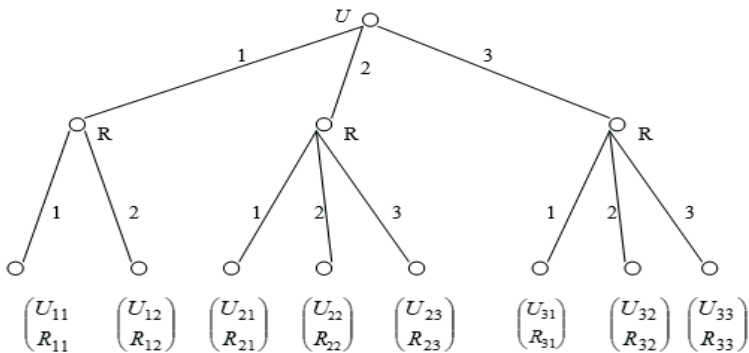


Fig.1. Dynamic game of Ukraine and Russia in the situation regarding Crimea, Donetsk and Lugansk People's Republics

The winnings of Ukraine and Russia are presented by the first letter of the country. The indices determine the scenario selected by Ukraine (first index) and the scenario selected by Russia in response (second index).

Let's find the Nash equilibrium for this dynamic game [3], that is, choosing the strategies that are best for both parties in the sense that when one side chooses them, it is not advantageous for the other side to choose the other.

We find it by the inverse induction method [3], that is, from the end of the game tree to its apex. Thus, Russia's gains should be compared with each other, but only those that belong to one vertex. In our case, only those that have the same first index.

Comparing Russia's R_{11} and R_{12} 's gains, we can conclude that Russia can win if it first proposes its project to resolve conflicts over Crimea (of course, those who are primarily interested in it). That is, the R_{12} strategy will be a win for her. This will allow her to gain a reputation as a country trying to resolve the conflict. In doing so, Ukraine will suffer reputational losses, looking like a country that is exacerbating tensions in Europe.

Let's compare the gains of Russia R_{21} , R_{22} and R_{23} . Russia will have the greatest benefit when it proposes to separate negotiations on Crimea (this will be a strategy of R_{23}). Russia's motivation may be, for example, that Crimea, unlike the Donetsk and Lugansk People's Republics, is part of the territorial composition of Russia. An additional goodwill will also be that Russia, unlike Ukraine, will show its readiness to negotiate and, as a result, show its willingness to work to reduce tensions in Europe.

Consider the winnings of R_{31} , R_{32} and R_{33} . Similar to the previous review, the R_{33} strategy will be a winning for Russia.

Thus, Ukraine will choose the largest gain among the U_{12} , U_{23} and U_{33} as shown in fig. 2.

Comparing the winnings with each other, we get the U_{33} winnings as the best in Ukraine.

Thus, the equilibrium of Nash in this game, which will suit both sides, will be such: for Ukraine it is most advantageous to offer Russia an agreement of resolving the situation with the Crimea, and then it will remain most advantageous for Russia to agree to such negotiations.

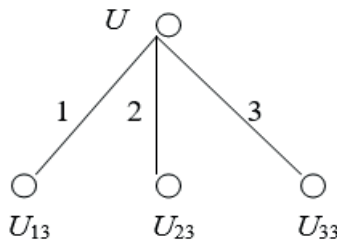


Fig. 2. Ukraine's winnings after the choice made by Russia

It should be emphasized that the game-theoretic model shows that the country which is the first to propose to sign the agreement of the Crimea will have significant advantages over the other.

Conditions for the implementation of the game-theoretic model. In Ukraine for over 5 years, public opinion has emerged that negotiations with Russia are unacceptable. Like, until Russia «returns» Crimea to Ukraine, there is nothing to talk about the Crimean topic with it. For 5 years, the media and representatives of public authorities and government have reiterated that foreign sanctions are enough for Russia to return Crimea. By contrast, the Minsk Agreement was presented as an alternative by the Ukrainian government and authorities.

So it is advisable in Ukraine to organize a wide discussion with the public about possible steps by Ukraine in relation to the problem of Crimea and the non-controlled regions of Donetsk and Lugansk regions. At the same time it is necessary to rely solely on your own, Ukrainian capabilities. A wide range of experts and analysts need to be involved in spreading the public opinion that Ukraine needs. It should be emphasized that these arrangements are temporary. And that they will continue until the conditions change both international and domestic in Ukraine and Russia. First of all, Ukraine must raise the standard of living of its population to a level higher than Russia has. This is the main condition for the return of both Crimea and uncontrolled territories in Donetsk and Lugansk regions.

Adequate public opinion activities can be effectively implemented within e-democracy and e-governance.

It is also important to inform the Russian society about Ukraine's initiatives regarding the future of Crimea and the Donetsk and Lugansk regions. Ukraine's approach can be favorably received by Russian society, and this is an important factor that the Russian authorities must always take into account.

It should be noted that the international community will very much take steps in this direction as they can reduce the level of tension in Europe. These steps will also contribute to the economic development of not only Ukraine and Russia, but also EU countries.

Multilateral or bilateral agreements. Neither country is planning negotiations on a bilateral agreement between Ukraine and Russia today. There are no proposals for this yet. However, as the results show, bilateral agreements can be a powerful mechanism for reducing tensions between Ukraine and Russia. And the existence of an agreement between the countries will create the conditions for the end of the active phase of the hybrid war on the part of Russia.

The situation of the temporarily occupied regions of Donetsk and Lugansk regions, at first glance, has formal differences with the situation with Crimea. Negotiations have been underway for several years in the «Norman format», with the participation of Ukraine, Russia, France and Germany. The highest officials of these countries take part in them. During this time, the so-called «Minsk agreements» were formed to resolve the situation in Donetsk and Lugansk regions.

The history of the Minsk Agreements is detailed in [4]. The text of the Protocol of the Presidents of Ukraine and Russia is given in [5]. The text of the Declaration of the Presidents of Ukraine, Russia, France and the Chancellor of Germany is given in [6]. The text of the Complex of measures for the implementation of the Minsk Agreements is given in [7]. The Steinmeier formula for the implementation of the Minsk Agreements is given in [8].

It is interesting that the Minsk agreements are not signed by the leaders of the Norman countries. They were signed by representatives of these countries. The «presidents» of Donetsk and Lugansk People's Republics also signed these agreements.

The Minsk Agreements do not provide any guarantees or mechanisms for their implementation. At the time of their signing, the Government of Ukraine informed citizens that France, Germany and other EU countries and structures would be the guarantors. However, neither in the Minsk Agreements nor in certain international agreements is this fixed.

Moreover, sanctions against Russia are not formally attached to the implementation of the Minsk Agreements. They are governed by other documents and are the «goodwill» of the countries that introduce them. The magnitude and duration of these sanctions are also not regulated. For example, EU sanctions have duration of six months and have to be continued.

Today, Ukraine has agreed to implement the Minsk Agreements. In doing so, it provided an opportunity for foreign countries to waive sanctions (or substantially mitigate them) in the event of promotion of the Minsk Agreements. Actually, this is a risk for Ukraine, and it will increase over time.

Unfortunately almost immediately after their signing, the partners of Ukraine on the Minsk Agreements began to refuse support from Ukraine. For example, Germany actively cooperated with Russia on the construction of the «Nord Stream 2» gas pipeline. Such cooperation was carried out on the basis of bilateral agreement which was not broken during the sanctions.

Sanctions against Russia are economically burdensome for the EU and developed countries. An increasing number of these countries are seeking an opportunity to waive these sanctions.

Thus, multilateral negotiations and agreements on the situation with Crimea and Donetsk and Lugansk regions have proved ineffective. At the same time, bilateral agreements continued to be effectively enforced, even during sanctions.

Therefore, bilateral negotiations between Ukraine and Russia on the normalization of the situation in the regions of Donetsk, Lugansk and Crimea may be a more effective step compared to multilateral agreements between countries, some of which are interested in continuing and developing cooperation with Russia.

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