

ANTE PORTAS

ANTE PORTAS

Security Studies

ISSN 2353 – 6306

June 2021

No 1 (16)

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PEER-REVIEWED JOURNAL
Web page: www.anteportas.pl

ISSN 2353-6306

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Ostrowiec Świętokrzyski 2021

*The original version of the journal is the electronic version.
The journal is published as a semi-annual*

The journal is indexed in: *Index Copernicus, ERIH Plus,
Central European Journal of Social Sciences and Humanities, BazHum,
Polska Bibliografia Naukowa*

Cover design: Mateusz Lomber
Technical editing, proofreading and adjustment: Editorial Board

Publisher:

University of Business and Entrepreneurship
in Ostrowiec Świętokrzyski
Akademicka 12, 27-400 Ostrowiec Świętokrzyski
tel. 041 260-40-41, email: info@wsbip.edu.pl / redakcja@anteportas.pl

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EDITORS' NOTE

It may be trivial that the year 2020 brought many changes, but it did... The world we knew has changed, the world economy evolved, and the COVID-19 pandemic was not only the cause of alteration, it was also the catalyst for the hitherto processes.

The following year, 2021, isn't better or easier. It is a year full of political and economic events of global importance: the United Kingdom left the European Union; in the United States a new president took office, which was met with an unprecedented attack on the Capitol; the Americans left Afghanistan and the Taliban regime took power again; a single container ship blocked the Suez Canal causing a week-long obstruction that prevented an estimated US\$ 9.6 billion worth of trade; and many others. We will see, how the economic dimension of the pandemic, political changes, and military conflicts will affect our day-by-day life.

I am pleased to publish the newest "Ante Portas – Security Studies" issue, which is mostly concerned about the economic changes, threats, and challenges not only related to the pandemic. Our Authors represent two geographic areas – Georgia and Poland. Georgians, Aliko Guchua, Irakli Gabelia, and David Peikrishvili concerned their area of expertise to economic security the Black Sea Region; Vaktang Maisaia and Aliko Guchua, brought the topic of economic aspects of the nuclear disarmament, and Thornike Zedelashvili indicated the economic threats of the EU Cyber Security Strategy. Khatuna Chapichadze described the possible role of cryptocurrencies' effect on economics and Bukhuti Sitchinava showed a massive threat of water shortages on the example of Iraqi Kurdistan. Polish Authors are concerned with their topics mostly with the Polish economics – venture capital and private equity funds (Kamila Kowynia-Leśniak), labour market (Wiktor Adamus) and the mechanism of transition the Polish currency into the Euro (Alina Walenia). However, Anna Bałdyga brought a wide analysis of the myths that arose on the Nord Stream 2 gas pipeline.

I am sure that 2022 will bring new challenges, chances, risks and threats – hopefully, peaceful and prospering. But before this, enjoy your reading!

Jakub Żak
Editor-In-Chief

I. ARTICLES

„Ante Portas – Security Studies”
2021, No 1(16)
DOI: 10.33674/120211

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THE ECONOMIC SECURITY CHALLENGES IN THE BLACK SEA REGION AND IMPACT OF CONFLICTS

Abstract:

The past few decades have shown a sharp rise of focus on the Black Sea Region due to its geopolitics and other strategic reasons. The pandemic situation in international politics, caused by Covid-19, has had a significant impact on the economies of the Black Sea region. Great attention to the region comes from the neighbouring states and different international organisations as well. The Black Sea region runs through important economic and energy corridors, doubling its geopolitical significance. However, it might not be a surprise that the interests of sides often differ and frequently relations come with a great antagonism. An intensified involvement of different global actors in the region warns of fierce geopolitical tensions in years to come. The Black Sea region is a hotspot in terms of geopolitics and the focus on it has many dimensions, like economics, security, politics, etc. Recent years of intense militarization in the region prove to be a source of emerging disputes. As a transit corridor region undoubtedly has huge importance as it is an object of great focus from different international actors. The Black Sea area incorporates the following strategic parts; the Balkans, Caucasus, and Caspian Sea Area. The article will discuss

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the role of the Black Sea region in the global economic system, issues of economic security, energy policy, and the impact of the Covid-19 pandemic on economic processes. The article will discuss the geopolitical importance of the region, the energy factor, the challenges facing NATO, and the balance of power, as well as the importance of maintaining stability in it for both regional and non-regional players for the economic development of the Black Sea region.

Keywords:

Black Sea Security, Geo-economics, Economic stability, Security, Caucasus region, Geopolitics, National Interests, Russia, NATO, Ukraine, Georgia

Introduction

In the last decade, black sea security held a significant role in shaping the modern political order. The topography of the region proves its significance with confidence, we can give it an important status according to its geopolitics. The region covers and contains countries with different political views and interests of different international organizations as well. In general, the Black Sea's importance derives not only from the countries that lie along its shores, which is only natural but also from its history – particularly for several global actors with regional interests. The Black Sea itself and the wider region around it have throughout history been the arena for a variety of goals, the foremost and most decisive of which was trade³.

To examine the matter deeply we must define the term 'geopolitics' first. It is not an easy task to define, as it goes beyond rationality and differs from global politics. Geopolitics stems from the fundamentals of geographical science. The term geopolitics was first used by the Swedish political scientist Rudolf Kjellén (1864-1922), a student of the German geographer Friedrich Ratzel (1844-1904), later it was coined by Alfred Thayer Mahan (1840-1917), Halford Mackinder (1861-1947) and Karl Haushofer (1869-1946) with geopolitical concepts. But the unified definition of the term is still an issue in modern political science:

- Geopolitics – the science that studies the nation as a geographical case study;
- Geopolitics – the analysis of an interaction between, on the one hand, a geographical setting and political processes;
- Geopolitics – a discipline that studies the world's political processes

³ V. Kipiani, *The balance of strength in the Black Sea region and Georgia's current challenges*, "Geocase", 21.07.2020, p. 1.

from the perspective of national security;

- Geopolitics – the science that studies the distribution of power between countries, especially between the super- nations⁴.

A complete theory of geopolitics as a part of political science was established in the 19th Century by the Anglo-Saxon and German schools. The process was accelerated due to the development and advancement of knowledge in the field of geography. In modern days geopolitics is a science that studies economics, geography, history, military, politics, and other factors as a whole. It also studies the factors that are related to and influence a nation's strategic potency.

Theoretical Boundaries

The main case studies are peace and war problems in international relations and their influences on the entire world. Ongoing processes in the Black Sea region can be examined with 'the balance of power' theory which is a product of the school of realism. The theory has multiple definitions. It can be called the basis of political stability, which implies the apportion of forces between leading nations, but according to British historian Arnold J. Toynbee 'the balance of power' is a system of political dynamics that applies to parts of the 'game' where societies are divided as multiple independent, local countries⁵.

The French specialist of international justice Gatel marks that this theory in the face of international justice, where no nation is powerful enough to influence their laws to other nations. Every actor of the international system tries to use the balance of power principles, which itself creates connections and coalitions. Actions are taken by the Black Sea region countries to decide whether to join particular international organizations or not come in opposition with the interests of regional powers.

According to Kenneth Waltz's view, the international political system represents an anarchical world, where nations operate by themselves and guarantee their security, nations have to exist in an environment that leads with self-preservation principles, therefore small nations try to enter the coalitions which is a way to sustain their security⁶.

According to Georgian Scholar E. Khvichia and his scientific theory which is known as 'Quantum-Relativistic Nology'⁷ (theory is based on D. Uznadze "Theory of Set") nations are established as the unity of societies based on four

⁴ V. Maisaia, *The political aspects of the geopolitical balance of Black Sea Basin*, Tbilisi 2003, p. 46.

⁵ *Ibidem*, p. 21.

⁶ K. N. Waltz, *Theory of International Politics*, Boston 1979, p. 109.

⁷ E. Khvichia, *Nology – The Logic of Self-Sustained Existence. The Laws of Alteration of the Self-Organization and Social Dynamics of the Society*, Tbilisi 2020.

fundamental psychic types and their distinctive characteristic classifications, which creates a system as a whole. They differ in an ideological sense, which is determined by the set which is the main characteristic for each of their identities and their representative individuals in the case of different nations. The combined action of individuals which represents an identical sum of sets of persons is also expressed in national actions as well. The researcher with his paper leads us to the conclusion that suggests that the global self-regulative system stipulates the impulses which are expressed on national actions. These self-regulative systems are characterized by different character types that contain active and passive periods, the author calls these terms 'phases of civilizations'.

The identification of nations will give us the possibility to assess processes objectively and it also enables us to see these processes realistically in the global context and the challenges the region has to face each period. Nations act according to their interests and today's reality leaves us with the impression that national representatives and their will determine actions that portray different theoretical frames. We shall examine the modern world as a self-regulative system, this shall be the rising point that will review the Black Sea and Caucasus region's future and help us analyze its security concerns. If we use the theory of Quantum-Relativistic Noology it will help us identify the functions of nations and international organizations and their juridical status.

Today, economic security can adapt to an increasingly changing international economic situation, market dynamics, as well as find its place and function in the mechanisms of the international division of labor and determine active trade. When we talk about the decline in the sovereignty of modern states, we mean, first of all, economic sovereignty.

Indeed, subsequent events have shown that geopolitics, which in the recent past was the essence of the world order, is gradually being replaced by geoeconomics, which further accelerated the growth of interdependence between states. Interdependence has grown not only because of the increase in global trade and the formation of strong transnational forces, but also because it is easier for businesses to move their operations to regions where conditions are better. Therefore, in the modern post-bipolar world, the content of many geopolitical concepts has changed.

The Geopolitical Importance of the Black Sea Region

The region since Antiquity has always been the 'backyard' of one power or another and witnessed their competition to dominate it⁸. At different times the region was dominated by the Russian and Ottoman Empires. The Black Sea

⁸ M. Aydin, *Europe's New Region: The Black Sea in the Wider Europe Neighbourhood*, "Southeast European and Black Sea Studies", Vol. 5, No. 2, May 2005, pp. 257-283.

basin includes countries as follows: Black Sea countries (Romania, Bulgaria, Turkey, Ukraine, Moldova, Georgia, and some parts of Russia), the Balkans (North Macedonia, Bosnia, and Herzegovina, Albania, Serbia), and Northern Caucasian republics of the Russian Federation. Ports and wharves of the region have huge importance as well. The total number of ports is 43, nine of them are considered main ports as it follows: Romania – 7 with 4 of them fluvial, principal ports are: Constanza; Bulgaria – 3, major port Varna; Turkey – 13, major port Istanbul; Georgia – 3, major port Batumi; Russian Federation – 3, principal port Novorossiysk; Ukraine – 14 with 4 of them fluvial, major port Odesa; Republic of Moldova: major port Giurgiulesti⁹. The Black Sea region's growing role is not at all surprising if we consider some of the Western or Russian doctrines and theories that describe it as a 'rampart' or even as a dividing line between democracy and authoritarianism. Many current developments in the region are indeed tantamount to the erection of a New Iron Curtain that cuts right through the Black Sea¹⁰.

In any case, the military component plays an important role in implementing the interests of local, regional, or global players in the Black Sea region¹¹. Russia owns nuclear weapons and its platform in the Black Sea basin. The annexation of Crimea made it possible for Russia to seize the port of Sevastopol which has enormous importance for the Russian navy. To give an example, 80% of the Black Sea fleet is founded in Sevastopol, which is also considered a major warm-water port of the Russian Federation. On the other hand, Russia owns the port of Feodosia where 20% of Russian naval forces could be located if necessary. Also, the number of Russian submarines was increased by those 6 submarines that can carry missile systems within them. The Crimean War and the later replacement of European interests with those of the United States and NATO progressively increased the perceived importance of achieving and maintaining an influence over the Black Sea region. NATO has repeatedly stated the region's geopolitical and geo-economic significance 'in terms of Euro-Atlantic security', most notably at its summits in Warsaw in 2016 and Brussels in 2018¹².

The Russian policy in the Black Sea region is defined by a 'Strong State' identity. Since 2000 the main mission of Russia's foreign policy has been to define its role and importance in the multipolar world. Russia often expresses its dissatisfaction with today's world order and aims to hinder NATO from gaining a monopoly over Europe and to stop its enlargement process. To do so, Russia needs dominance in the Black Sea region. The Russian aggression

⁹ R. Boneagu, *Black Sea – the geopolitical, economic, social and military importance*, "Journal of Physics", Conf. Series 1122 (2018).

¹⁰ V. Kipiani, *op. cit.*

¹¹ G. Surmava, *The Black Sea – Interests and Capabilities of the Players*, Tbilisi 2021.

¹² V. Kipiani, *op. cit.*

towards non-NATO countries was not unexpected as Russia does find the Black Sea region its sphere of influence, proving it right.

There are two key missions of Russia's foreign policy concerning the Black Sea region: 1) Prevention of EU and NATO further enlargements, and maintaining Russian dominancy; 2) Development of the naval forces to demonstrate the power. The militarization process in the region aims exactly at this, to confront the West and protect Russian interests. The National Naval Strategy document dated back to 2015 also has significance and aims to turn Russia into a strong multiregional naval force. "In his March 2, 2019, speech on the future of Russian military strategy, Russian Chief of the General Staff Valery Gerasimov said Russia's armed forces must maintain both 'classical' and 'asymmetrical' potential in waging modern war, which some viewed as a reaffirmation of Russia's continued pursuit of what he calls 'new generation' warfare¹³".

After the Annexation of Crimea in 2014 and the Russian-Georgian war in 2008, Russia gained obvious dominance in the region. During the last years, the number of Russian submarines active in the Black Sea has grown from one to seven¹⁴. Also, the Bastion class shoreline security system can reach any point in the Black Sea area to destroy an enemy warship.

On April 13, 2021, Russian-owned 15 military ships of the Caspian flotilla set off for the Russian military naval base in the Black Sea to take part in joint training and maneuvers. At the same time, the Ukrainian government announced that the Russian federation gathered military troops of 80.000 servicemen and increased the number of service members by 115 000 in Crimea. In this geopolitical context official, Kyiv sees NATO as a guarantee to find a way out and expects the integration as a result of years of striving.

The president of Turkey, Recep Tayyip Erdoğan, responded to the current situation and stated, that the "main goal is that the Black Sea continues to be a sea of peace, tranquility, and cooperation"¹⁵.

The interests of the international actors in the region are regulated by the Montreux convention of 1936 that gives a privilege to the Black Sea countries and restricts strong missions of the non-participant countries in the region¹⁶. The Montreux Convention corresponds to Russian interests so that the privileged part in Russia and, on the contrary, representation of non-participant

¹³ J. S. Flanagan, A. I. Chindea, *Russia, NATO, and Black Sea Security Strategy*, RAND Corporation, Santa Monica 2019, p. 7.

¹⁴ V. George, *Growing Submarine Threat in the Black Sea*, "Eurasia Daily Monitor", Volume 15, Issue 8, <<https://jamestown.org/program/growing-submarine-threat-black-sea/>> (01.04.2021).

¹⁵ *Turkey desires 'peaceful' Black Sea, says Erdogan*, <<https://www.aa.com.tr/en/politics/turkey-desires-peaceful-black-sea-says-erdogan/2204800#>> (10.05.2021).

¹⁶ *Implementation of the Montreux Convention*, <<https://www.mfa.gov.tr/implementation-of-the-montreux-convention.en.mfa>> (10.04.2021).

parties is restricted the U.S., which is not part of the Montreux Convention, has regularly asserted that they will respect it despite the fact this text considerably limits their naval power in the Black Sea Region¹⁷.

Russia actively opposes all of the initiatives and actions made by NATO in the Black Sea region. Russian ambassador perceives the growth of the number of NATO commands in the region as a premise of ‘Cold War’, and forces Russia to protect its national interests. According to the convention, one of the biggest states in the region and the NATO member – Turkey – has enhanced its positions so that it was not changed even after the September 11, 2001 events. In 2006, with the motive to adhere to the Montreux Convention, Turkey went against NATO’s actions in the Black Sea taken under Operation Active-Endeavour. For the same motif, Turkey did not accept the US plans during the Russian-Georgian war in 2008 as Turkey found them exceeding the normal tonnage defined by the Montreux Convention¹⁸.

NATO’s interests in the region are also quite important as it is highly emphasized by the NATO officials and is a matter of discussion on the meetings held by NATO. On October 10, 2017, the secretary-general visited the NATO fleet in the Black Sea and noted, “NATO is here, NATO is strong and united”. The Warsaw summit, held in 2016, was resulted in designing the communique that gives great importance to the Black Sea region and, on the other hand, finds Russia’s actions provocative. Along with this, NATO aims to strengthen its representation in the South-East. As for the NATO military training in the Black Sea region supported by the partner as well as member states, Russia expresses its anger towards the matter and addresses the alliance to refrain from such actions¹⁹.

For most of the last two centuries, the strategic environment of the Black Sea zone has been shaped by the interaction of three factors: the shifting balances of power among European and Eurasian states; the political ambitions of smaller states and peoples directly affected by the actions of these powers; and the status of the region as a transit point for goods on global east-west and north-south trade routes²⁰.

¹⁷ I. Delanoe, *After the Crimean crisis: toward a greater Russian maritime power in the Black Sea*, “Southeast European and Black Sea Studies”, Volume 14, Issue 3, 2014, pp. 367-382.

¹⁸ *1936 Convention Regarding the Regime of the Straits*, <<https://cil.nus.edu.sg/wp-content/uploads/formidable/18/1936-Convention-Regarding-the-Regime-of-the-Straits.pdf>> (10.04.2021).

¹⁹ *Warsaw Summit Communiqué. Issued by the Heads of State and Government participating in the meeting of the North Atlantic Council in Warsaw 8-9 July 2016*, <https://www.nato.int/cps/en/natohq/official_texts_133169.htm> (10.04.2021).

²⁰ C. King, *The Wider Black Sea Region in the Twenty-First Century*, “Southeast European and Black Sea Studies” Volume 5, Issue 2, 2005, p. 5.

The strategic location of the Black Sea connecting the East to the West also raises the interest towards the region. The proof is the energy projects that concern the Black Sea area and are reflected on a global scale have not moved forward. Looking at the actors represented in the region, one can conclude that the confrontation and high tension under the regional context can be counted as one of the challenging issues in international politics. According to Georgian scientist, E. Khvichia, “In modern conditions of deepening economic integration tendency based on communication (information and transport) technologies, any region of the world is turned into the strategic arena for geopolitical forces”²¹.

It makes ongoing projects more important as they are establishing new routes through the Black Sea that are meant to accumulate alternative resources with help of reliable allies. Finding alternative resources and building the corridors – this is what has become one of the most important challenges of the decade. On the other hand, an antagonistic attitude between the west and Russia challenges both sides. In this sense, the Black Sea region has huge importance for the west as the region gives an opportunity of transporting natural gas from the Caucasus as well as the Near East bypassing the Russian Federation.

Trans-Anatolian gas pipeline (TANAP)

“TANAP” – starts from the border of Georgia-Turkey, near Akhaltsikhe territory from the side of Georgia, and to the west border near the south part of the city Edirne (Turkey-Greek border), it represents the Baku-Tbilisi-Erzurum gas pipeline. According to the project, designated gas pipeline in the first stage of exploitation, the capacity in the early 20-years should be 16 billion cubic meters, likewise, by the year 2026 when more compressive stations will be added in exploitation, conduction will increase to 31 billion cubic meters²².

Trans Adriatic Pipeline (TAP)

On October 13, 2020, consortium TAP AG made a statement, concerning the finishing of the construction of the TAP pipeline. All this resulted, from the year 2021 Azerbaijan started to provide gas to Europe from the Shah-Deniz gas deposit, from the Trans Adriatic Pipeline (TAP).

The length of TAP is 878 km: the 550 km part covers the north of Greek, 215 km runs on Alban territory and 105 km lies into the depths of the Adriatic sea, the rest 8 km is located on the territory of Italy. TAP represents ‘the corridor of

²¹ E. Khvichia, *Georgian “Gordia Knot”*, September 2011, p. 1, <<https://for.ge/view/9948/qarTuli-gordias-kvanZi.html>> (12.05.2021).

²² *Economic and political dividends to be received by Georgia from TANAP*, <<https://www.gogc.ge/en/article/economic-and-political-dividends-to-be-received-by-georgia-from-tanap/470>>, (12.05.2021).

southern gas' and is the final component of the TANAP pipeline. With the given pipeline, every year 10 billion cubic meters of gas should be transported towards Europe and the capacity allows doubling the volume with a little effort²³.

In the Black Sea region not only national but also international organizations' interests are in rivalry. The current condition is an exact copy of the events which could develop to the peak point of conflicts, where there are no resources for negotiations, and we can name the reason for conflicts as the lack of resources for informational trade, which is the basis of abusive actions between the nations.

Jewish historian Yuval Noah Harari describes the scale of the world's existing political crisis and states that at this point there is no effective format for negotiations. International security and stabilization are hard to achieve when huge actors are unable to negotiate and settle important issues with each other. Disagreement contains risks and threats for nations and it registers as an introduction to different destructive interests, which later depicts the international system.

To ensure geo-economic security in the Black Sea region, it is necessary to take into account many factors, since they have a significant impact on conflicts. Geoeconomics As an integral part of national security, the need for the Black Sea region increases significantly during the crisis phase of development. The inevitable economic and social costs of this stage significantly distort the security factor and its criteria; moreover, they further aggravate the mechanisms for maintaining stability in society, undermining its ability to develop and implement programs of economic compensation and stabilization. Which significantly affects the security and development of the Black Sea region.

Conclusion

Lately, the Black Sea region is approaching the peak of the conflict, and perspectives of the possible solutions to this problem are not visible, therefore it is necessary to come up with a new format where the interests of all sides will be considered. However, in the frame of existing paradigms solving the issue is difficult. Quantum-Relativistic Noology (a product of Georgian school) suggests the fundamental solution to the matter, which is based on the scientifically proven method of approach. With consideration of the interests of the disputed sides, the matter turns out to be complex but manageable.

²³ *Saipem Edges Rivals in Securing TAP's 105 km Offshore Pipeline Project in the Adriatic Sea.* <<https://www.pipeline-journal.net/news/saipem-edges-rivals-securing-taps-105-km-offshore-pipeline-project-adriatic-sea>>, (15.04.2021).

In the limits of existing world political experience, after the creation of nuclear and other Weapons of Mass Destruction, it became vital to reform the institution of the world governing system, because the existing structure cannot guarantee the interests of societies in whole, which increases the chances of a large scale conflict between the nations.

That is why the situation in the Black Sea region is quite tense, which is aggravated by the coronavirus pandemic (COVID-19) and the economic problems caused by it, which significantly affect the transition to the hot phase of the conflict. To reduce the existing tension, it is necessary to take pragmatic steps and make certain compromises on the part of the states of the Black Sea region. In conclusion, we can say that there are many challenges in the field of economic security in the Black Sea region, which weakens the security environment and has a significant impact on conflicts. Taking into account the political interests of the states of the Black Sea region, it is rather difficult to normalize the political situation in the near future.

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**ANALYSIS OF THE DYNAMICS OF ECONOMIC DEVELOPMENT
OF THE SOUTH CAUCASUS COUNTRIES AND THEIR IMPACT
ON NATIONAL SECURITY POLICY PLANNING**

Abstract:

The discussion on national security is very relevant for actors in the Caucasus region. Today, security has a wide range, and in security studies, we find the five main sectors by which security can affect the population. These sectors are military, economic, political, public and environmental issues. We can see that security is everywhere and affects our lives daily. The purpose of this article is to study the development dynamics of economic factors in the planning of national security policy and to analyze its impact. Also, a comparison of the determinants of this influence. To achieve this comparison, a general and specific analysis will be done. The general analysis will focus on contextual analysis to examine which theoretical approach it is based on. A specific analysis is made of security threats and investigates each threat based on their key factors. By comparing the countries of the South Caucasus region, I am going to find out the similarities and differences between them and which theoretical approach was most distinctive for each. The need for this type of research is clear, which is a scientific novelty, as it scientifically substantiates and empirically examines the importance of economic factors in the development of national security policy and threats in the Caucasus region. At the same time, based on the research, we will be able to better assess the threats and challenges that actors in the Caucasus region may face in the international arena based on the study of economic development dynamics, for example, in the countries of the Caucasus region.

Keywords:

Regional Security, Economic Development, Georgia, Armenia, Azerbaijan

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Introduction

The Caucasus region is both geopolitically and in many ways unique in the modern world. The uniqueness of the Caucasus is also because it is the main strategic gateway between East and West. The uniqueness of the Caucasus region is reflected in its geographical location – as a strategic link between East and West. All three countries in the South Caucasus – Georgia, Azerbaijan and Armenia – are given different positions by a very complex political dimension, which on the one hand is an accompanying and conditional process of economic integration, and on the other hand, guarantees political security to the countries. It also implies the political transformation of this country towards democracy. Clearly, given the above reality, all three countries of the South Caucasus do not respond equally to this challenge of economic integration with Europe. Given that Azerbaijan is rich in energy and oil resources and it is the only supplier of the European energy market, and its dependence on its resources will not decrease in Europe soon, the EU is in no hurry to adopt market regulations or democratize the political system².

It should be noted that the situation in the region is not very favourable from a political point of view, in particular: the conflicts between Azerbaijan and Armenia, the possible resumption of which will significantly weaken the security of all South Caucasus countries. Lack of balance of power and instability, fear of terrorism, arbitrary occupation of Georgian territories, etc., indicate the serious security challenges of the country and the need to respond immediately. A prerequisite for managing the country's security policy wisely is to identify its visible or invisible threats and to use already proven, civilized, Western methods of influencing them.

The purpose of this article is to analyze the dynamics of economic development in the South Caucasus and to study its impact on national security policy planning, for which a general and specific analysis will be made. The general analysis will focus on contextual analysis to examine which theoretical approach it is based on. A specific analysis is made of security threats and investigates each threat based on their key factors.

Research Methodology: Scientific methods defining comparative analysis will be used in the research.

To get comprehensive information on the research question I decided to use the qualitative research method. The main method of research is case

² *Development in Eastern Europe and the South Caucasus: Armenia, Azerbaijan, Georgia, Republic of Moldova and Ukraine*, OECD Publishing, <https://read.oecd-ilibrary.org/development/development-in-eastern-europe-and-the-south-caucasus_9789264113039-en#page1> (30.06.2021).

studies, although different and independent variables will be used for operationalization and measurement. First of all, the relevant literature will be analyzed: books, articles, publications.

The economic situation in the South Caucasus region – current realities, challenges and prospects

The Caucasus has fought for political and economic independence throughout its history. Given its favourable geographical location, its regional role has never been on such a scale. Numerous large-scale energy projects are planned to pass through the region, which is of great importance for the region. It will be able to strengthen the regional forces and defend its positions more firmly and will not allow gross interference by external forces. It will also help create economic wealth that will attract international companies and generate the investment needed for regional independence in the region. Once the role of regional importance is strengthened, it will no longer be alone in the face of specific threats and will have active support from actors around the world³.

It should be noted that Azerbaijan and Georgia can become an important part of the European corridor. This means that Europe offers support to these countries to expand oil and gas production – the scale of transportation in Europe and at the same time comply with EU standards and regulations in national legislation. However, the concept of Europeanization does not imply rapid and full alignment of existing laws and regulations in the country with European norms and policies, but it allows specific member states of the corridor to choose European norms and comply with them soon. In this regard, it depends on Georgia and Azerbaijan to what extent they want to become countries that meet European norms⁴.

Maintaining long-term economic growth is one of the important components of the stable and secure development of the country. This can be achieved through integration into free markets and sound economic policies. Open, coherent and result-oriented trade and economic relations with both Western and Eastern countries and international associations are the main and most important choices of the country⁵.

³ E. Herzig, *The New Caucasus. Armenia, Azerbaijan and Georgia*, Royal Institute of International Affairs, London 1999.

⁴ V. Papava, *Georgia's Economic Role in the South Caucasus*, "Problems of Economic Transition", Vol. 48, No. 4, August 2005, pp-84-92.

⁵ N. Grdzlishvili, *Perspectives for the development of cross-border regional tourism in Georgia*, Materials from V International Scientific-Practical Conference "Tourism: Economy and Business", 2014, Batumi Shota Rustaveli State University, Department of Tourism and Resorts of Adjara.

Figure 1. Merchandise Export and Import.



Source: *The World Bank open data*, <<https://data.worldbank.org/>> (30.06.2021).

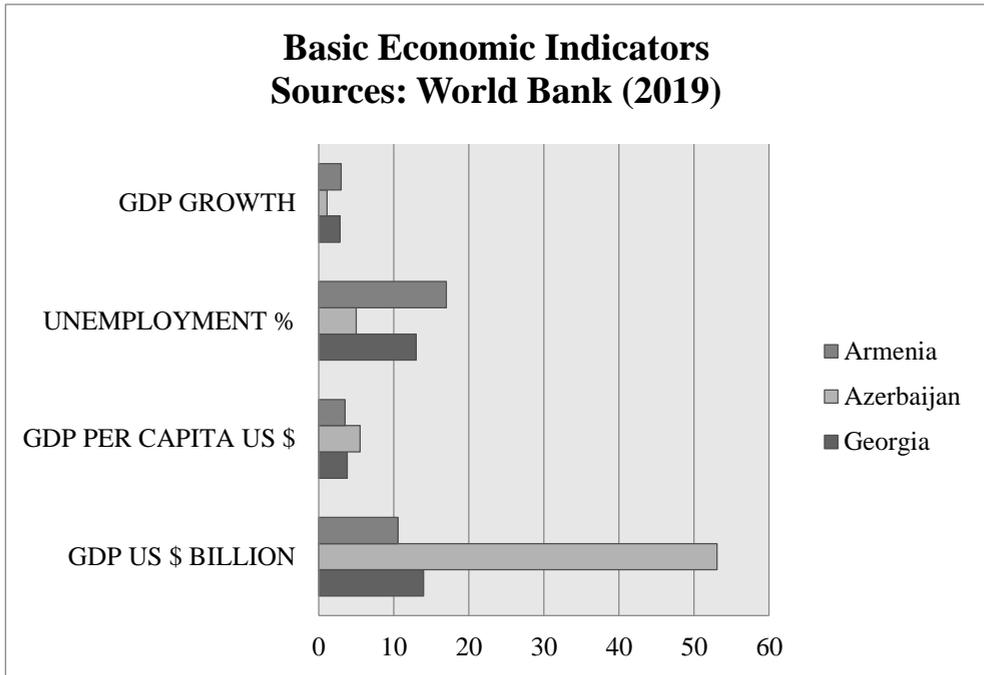
All three countries in the South Caucasus are given different positions by a very complex political dimension, which on the one hand is an accompanying and conditional process of economic integration and, on the other hand, guarantees political security to the countries. It also implies the political transformation of this country towards democracy⁶.

Clearly, given the above reality, all three countries of the South Caucasus do not respond equally to this challenge of economic integration with Europe. Given that Azerbaijan is rich in energy and oil resources and it is the only supplier of the European energy market, and its dependence on its resources will not decrease in Europe shortly, the EU is in no hurry to adopt market regulations or democratize the political system⁷.

⁶ E. Baratashvili, L. Kalandadze, N. Grdzlishvili, *Business Competitiveness and Administration*, Tbilisi 2010.

⁷ I. Gurbanov, *Southern Gas Corridor Gains New Momentum*, "Eurasia Daily Monitor", Vol. 13, Issue 108, 2016.

Figure 2. Basic Economic Indicators.



Source: *The World Bank open data*, <<https://data.worldbank.org/>> (30.06.2021).

The unsustainable state of political development in the South Caucasus naturally raises the question of how transit security and a stable transit policy can be maintained in the face of differing positions between the EU and Russia. What reality do the countries of the region face now and what political choices can they face if the direction of policy in the transit market changes?

South Caucasus Energy Security System

Ensuring energy security in the region began in 1995 after Georgia joined the Energy Charter, which was joined by Azerbaijan and Armenia in 1997-1998. The Energy Charter aims to develop energy prospects for interstate cooperation and to discuss all of its processes from the beneficiary states to the consumers. In recent years, the EU has developed new interests in the region

and promoted oil production in the region. Western countries in turn are finding a diversification path to defeat monopolies in the region⁸.

The introduction of diverse security systems in this region is a new challenge to create an attractive transportation area for shipments. ‘Baku-Tbilisi-Kars’ railway – it is a regional project, where the agreement was reached on January 7, 2007, and is still not completed. Its goals include the transportation of natural resources from Azerbaijan to Georgia via Turkey, as well as TRACECA (Transport Corridor Europe-Caucasus-Asia), Central Asian cargo and the Caspian Sea route from Turkey. According to long-term calculations of the line, its cargo turnover should reach 17 million tons⁹.

It is noteworthy that the use of domestic energy resources is considered as one of the systems for the development of energy security in the Caucasus. Given its potential, it has a fairly large stock. Electricity generated through hydropower plants will allow it to reduce energy imports to individual countries and increase exports. This will also be one of the guarantees of security for this region. A good example of this is the ongoing construction of hydropower plants in Georgia, which will be able to export the generated energy to other countries that will depend on it, increase the potential for economic development and create a stable environment at the regional level¹⁰.

The fact is that the energy security of the Caucasus depends on world geopolitical processes. It does not have the power to make its space stable and secure, because its neighbour's energy policy is against diversification, it tries, by all means, to prevent alternative projects and processes without it. The main guarantor of its security is the West. It seeks to create a stable political and economic environment in the region. It is at their initiative that the countries of the region join the regional blocs as association agreements – a new type of agreement aimed at integration with the EU countries with its eastern partners, economic development and all-important areas. By doing so, the U.S. is trying to develop the countries of this region to achieve the ability to secure their own and transit communications¹¹.

In terms of international relations, regionalism is often used when common interests, policies and certain agreements for regional prosperity are introduced

⁸ T. Pataraiia, *Asymmetry of energy transit and security in the South Caucasus: the road between Russia and the EU*, pp. 1-8, <http://ge.boell.org/sites/default/files/uploads/2015/03/energy_geo-final.pdf> (30.06.2021).

⁹ M. Komakhia, *Pipeline policy in the post-Soviet space (Part I)*, “Postsoviet Watch”, April 2015, <<https://tiny.pl/9pvdr>> (30.06.2021).

¹⁰ E. Baratashvili, N. Grdzlishvili, N. Galakhvaridze, N. Nadirashvili, *Regional Economy*, Tbilisi 2010.

¹¹ *Association Agreement*, <http://www.eu-nato.gov.ge/sites/default/files/AA_BodyText%20%2810%29.pdf> (30.06.2021).

between countries, such as NAFTA (North American Free Trade Agreement) and the European Union¹².

The EU is a clear result of regionalism. When a region becomes more economically integrated, it inevitably means that it will also be politically integrated. The goal of the new regionalization is the transformation of the state towards economic change, globalization and European integration, which is a prerequisite for political and economic strength¹³.

After the conflict between Ukraine and Russia, EU member states again intensified their attention to the Caucasus. Their main interest in finding an alternative route is the political and economic stability of the transit region – whether the Caucasus region will be able to function as a corridor. Connection with Central Asia will be possible first with the development of the Caucasus, therefore energy security in the region must be strengthened. The TAP (Trans Adriatic Pipeline) and TANAP (Trans-Anatolian Natural Gas Pipeline) pipeline projects in Europe, as well as the Nabucco project, which aims to compete with Russian pipelines. These pipelines are connected by flows from Central Asia, which, together with the energy security of the Caucasus, will bring energy independence to the EU member states.

Conclusion

Regional security is a prerequisite for stability and a sound regional, economic as well as political development. With the right regional security in place, EU member states will be able to tackle problems such as smuggling prevention, customs and excise controls, such as simplifying sea, air and land transportation, strengthening borders, improving immigration control, improving cyber security, and improving cyber security projects. Environmental control, the establishment of both financial assistance funds and military rescue links.

The security of the Black Sea region helps the Caucasus to develop a new regional model and allows it to be the regional space of the continent. In a reality where the current pursues different interests of different actors in the region, it is difficult to maintain its stable background. Therefore, it is necessary to determine its regional position to work out the threats to the common region. The Caucasus is far from developing a common spatial dimension, as each state has a different position. They assess the threats in the interests of the state. This is not only a problem of regional self-consciousness

¹² W. J. Ethier, *The International Commercial System*, “Essays in International Finance”, No. 210, September 1998, p. 11.

¹³ M. Grigalashvili, *Intermarium – the new life of a centuries-old Polish project*; May 2017 <<https://tiny.pl/9pvd8>> (30.06.2021).

in the Caucasus, it is also quite common in the Black Sea region, in NATO and the EU. That is why the security role of the Black Sea region is crucial in the regionalization of the Caucasus region. Passive foreign policy from Western European countries to the East is not enough to solve the problems. The lack of security in the region also poses a problem for European states and allows them to depend on the intentions of the opposition.

Given the current political processes, the EU will not be able to gain energy independence, as Russia is leveraging alternative energy projects with artificial levers, posing a threat to the sovereignty of states: Central Asia and the Caucasus region. It tries to create a destabilizing situation, as well as actively appeals to dangerous risks in environmental organizations. Meanwhile, it is laying new pipelines at a fast pace: 'North Stream 2' and 'Blue Stream'. Both projects will run along the seabed (in the Baltic and Black Seas). Pipelines are prepared to pass through the Caspian energy pipeline again from Russia. Colossal sums of money are spent on the construction of such large-scale gas pipelines and create such a certain deficit in the financing of these projects, against the background of a stable environment in the transit region. Through Russia, ethnic conflicts in the Caucasus region (Abkhazia, Samachablo, Karabakh) are being intensified as needed. These threats threaten the entry of investors into the region, as well as external actors, who have not yet been able to resolve and resolve conflicts in the area.

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4. *Development in Eastern Europe and the South Caucasus: Armenia, Azerbaijan, Georgia, Republic of Moldova and Ukraine*, OECD Publishing, <https://read.oecd-ilibrary.org/development/development-in-eastern-europe-and-the-south-caucasus_9789264113039-en#page1>
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NATO NUCLEAR POLICY AND SELECTED ECONOMIC ASPECTS OF NUCLEAR DISARMAMENT

Abstract:

Nuclear threats and challenges to global security are growing in modern world politics. NATO plays an important role in nuclear disarmament and non-proliferation policy. It is also actively working on issues of non-proliferation of weapons of mass destruction. Geoeconomics and economic security play an important role in modern world politics, which has a significant impact on nuclear disarmament. This is very important at a time when several states want to become the owners of nuclear weapons, which leads to even greater threats. Using the example of North Korea, we can tell how dangerous it is for nuclear weapons to fall into the hands of a totalitarian regime. The development of nuclear weapons requires significant economic resources, including financial costs for the development of technologies, raw materials, costs for specialists, the implementation of security systems for nuclear facilities, and so on. This article discusses NATO's role in nuclear disarmament policy, selected economic dimensions of nuclear disarmament, and current challenges. The policy of the nuclear states and approaches to disarmament. The article will discuss the economic factor and its role in disarmament policy. Importance of the New START Treaty for Global Security and Nuclear Nonproliferation Initiatives. The problem of nuclear terrorism and its threats to global security will be discussed. Iran's nuclear policy and the importance of creating nuclear-free zones will be discussed.

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Keywords:

NATO, Security, Geoeconomics, Economic Security, Nuclear Policy, Nuclear Terrorism, Disarmament Policy, Arms Control, Non-Proliferation, Russia, WMD, New START. Global Security.

Introduction

The modern international security environment requires the creation of active defence and security systems. This is an important factor for all states. The NATO Alliance is battling new threats in the 21st Century. These include cyber terrorism, international terrorism, hybrid warfare, nuclear terrorism, and biological terrorism, and so on. As well as the dangers posed by the creation of weapons of mass destruction. With the development of new technologies, it has become possible to easily manufacture and distribute certain elements of this weapon. It, therefore, requires more involvement from the Alliance, as well as other approaches and the development of new strategies. For states from a geo-political and geo-economic point of view, owning and maintaining nuclear weapons requires quite large resources and expenditures. It should also be noted that creating a weapon of mass destruction component is quite costly for states. It must be said that the existence of weapons of mass destruction requires the state to spend more effort on security issues. The existence of weapons poses a significant threat to the international community and global security. That is why politicians and security experts have been talking about the need for disarmament policies since the creation of the Bitcoin weapon. All this, in their opinion, will make the world safer. However, the question arises here, will there be a safer world after nuclear disarmament? While it is one of the important factors in not starting big wars. The next important question is what role does economic policy play in nuclear disarmament? These include nuclear states. Among which in case of conflict, we may get a third world war. It is also possible to become participants in a ball war when there is very little chance of humanity surviving. It all depends on which states will be involved in nuclear war and how much nuclear arsenal will be used. Consequently, it must be said that the international community is facing several dilemmas.

NATO's Role in Nuclear Disarmament and Selected Economic Aspects

There is a heated debate in the academic and political circles about nuclear weapons. It is about the possible use of small-scale nuclear warfare and the use of 'tactical nuclear weapons'. The latter is a less powerful weapon that could theoretically be used by the conventional armed forces against the enemy. Or at the initial stage of military escalation. For a war to be limited, its political goals

must be the same. The unconditional capitulation of the adversary recorded in the logic of a ruthless war is no longer acceptable. It must be said that total victory is very close to total defeat. Indeed, the notion of limited purpose in a conflicted relationship is difficult to define. The goal of a limited war for one camp may come first for the other. Maintaining Polish independence in 1939 was a limited goal. In reality, the original goals of war do not necessarily determine the nature of hostilities. The issue of limited resources is also not a panacea, as the use of 'tactical' weapons could lead to large-scale nuclear escalation³.

During the wars of the 19th Century, 8-14% of the national income of the belligerent states was spent on the war economy, up to 33% during the First World War and 50% during the Second World War. The growth of the war economy was facilitated by the widespread proliferation of weapons that began after World War II. The military-industrial enterprises of the countries belonging to the military alliances developed and carried out long-term military scientific research, equipping the armed forces with ever more advanced weapons.

In the last decade of the twentieth century, after the collapse of the socialist camp, the processes of conversion of military production flourished in several countries. In the context of the reform of the military economy, the countries were tasked with maintaining their defence potential at the level of an adequate response to existing and potential military threats. However, it was necessary to take into account the economic potential of the state. Already in our time, it can be said that states are pursuing the same policy in economic terms, all states are analyzing the role of increasing military potential and at the same time taking into account economic opportunities. The Covid-19 pandemic has dealt a significant blow to the global economy, which is why countries have to use their financial resources to combat the pandemic.

The main elements of NATO's nuclear policy can be found in various decisions adopted over the years based on consensus. Nuclear deterrence has been an essential part of NATO's overall defence posture for 70 years, and the 2010 Strategic Concept directly referred to NATO as a nuclear alliance⁴. It must be said that during the 'Cold War', the US nuclear arsenal contained many types of nuclear weapons. These include short-range missiles and artillery for use on the battlefield. Also, medium-range missiles and aircraft. They could destroy targets outside the theatre of combat operations. As well as short-

³ P. D. Senarklen, I. Arifen, *International Politics: Modern Theories and Objectives*, Tbilisi 2014, p. 61.

⁴ S. Hill, *NATO and the treaty on the prohibition of nuclear weapons- What does the entry into force of the TPNW mean for NATO and its member states?*, <<https://www.chathamhouse.org/2021/01/nato-and-treaty-prohibition-nuclear-weapons/02-nato-nuclear-policy>> (2.06.2021).

distance and medium-distance systems located on submarines. As well as long-range missiles stationed in the United States and on nuclear submarines. As well as heavy bombers threatening Soviet targets from US military bases. Also, short-range and medium-range systems are considered non-strategic nuclear weapons. It is called a tactical and theatrical nuclear weapon on the battlefield. Long-range missiles and heavy bombers are known as strategic carriers of nuclear weapons.

NATO's November 1991 'Strategic Concept', noted that "the fundamental purpose of the nuclear forces of the Allies is political: to preserve peace and prevent coercion and any kind of war"⁵. It is noteworthy that during the 1990s, the United States significantly reduced the number and types of weapons in its strategic nuclear arsenal. This was all due to both the modernization process and the 1991 agreement, which provided for the restriction of strategic armaments. In addition, the United States continued to support the Strategic Nuclear Forces Triad of both ICBMs and SLBMs as well as bombers. According to the Department of Defense, such a combination of forces would give the United States a wide range of capabilities. As well as flexibility in nuclear planning and made it difficult to plan enemy attacks. Would also be insured against unexpected problems in the nuclear warhead transmission system. This last problem has become even more serious in modern times. Because the United States has removed from the arsenal many different types of warheads and missiles that they have deployed over the years. All of this even reduced his excess number of weapons⁶.

1990, when the Cold War came to an end and was the last year of the Soviet Union, more than 12,000 nuclear warheads were deployed in the United States, approximately 1,875 strategic nuclear weapons carriers. As of July 1, 2009, under the terms of the Initial Strategic Arms Reduction Treaty (START), the United States has reduced 1,188 strategic nuclear weapons carriers to 5,916 nuclear warheads. Under the terms of the 2002 Strategic Offensive Reduction Treaty (known as the Moscow Treaty) between the United States and Russia, that number was to be reduced to no more than 2,200 operational strategic nuclear warheads by the end of 2012. This weapon of mass destruction is of particular importance in Russia's military doctrine, given the NATO factor, and Russia is still not interested in negotiating arms control in this area.

The U.S. State Department said the United States had already reduced its 1,968 operational-tactical strategic offensive weapons in December 2009. A

⁵ J. Mendelsohn, *NATO's Nuclear Weapons: The Rationale for 'No First Use'*, <<https://www.armscontrol.org/act/1999-07/features/natos-nuclear-weapons-rationale-first-use>> (4.06.2021).

⁶ *U.S. Strategic Nuclear Forces: Background, Developments, and Issues*, Congressional Research Service, <<https://s3.documentcloud.org/documents/6605853/U-S-Strategic-Nuclear-Forces-Background.pdf>> (3.06.2021).

new agreement signed by former US President Barack Obama and former Russian President Dmitry Medvedev on April 8, 2010, further reduced this arsenal to offensive checkpoints and heavy bombers to no more than 1,550. According to the U.S. State Department, as of September 1, 2019, the U.S. had 1,376 nuclear warheads deployed on 668 ICBMs, SLBMs, and heavy bombers. A total of 800 were deployed on ICBMs, SLBMs, and heavy bombers.

The 2010 agreement is the result of Barack Obama's 'Global Zero' initiative. 'Global Zero' is an international, non-partisan alliance that includes 300 world leaders and aims to eliminate nuclear weapons. The initiative, launched in December 2008, facilitates the phasing out and oversight of the destruction of all equipment owned by official and unofficial members of the Nuclear Club. The 'Global Zero' Campaign aims to achieve a sustainable international consensus. All this is aimed at the global movement of world leaders and citizens to eliminate nuclear weapons. The result of the 'Global Zero' is the agreement between the United States and Russia. Also, under this treaty, the nuclear states should participate in multilateral negotiations, as the nuclear arsenal is gradually reduced. Within the framework of 'Global Zero' there is a diplomatic dialogue and expansion of work with states. Plans to work on critical issues related to nuclear disarmament are also ongoing. The 'Global Zero' plan includes the phasing out of all nuclear weapons. This is a four-stage strategy aimed at reaching a global zero agreement by destroying all nuclear warheads. The participants of 'Global Zero' realize how dangerous nuclear war is and how many catastrophes it will bring to humanity. To better analyze all this, they also resort to strategic modelling of nuclear war.

It should be noted that even during the Cold War there were attempts to create nuclear-free zones (Nuclear-Weapon-Free Zone, NWFZ). It should be noted that the first initiative in Europe was launched in the 50s of the last century, which provided for the creation of a nuclear-free military unit and a zone free of hydrogen weapons. Relevant statements were also made in the 1960s about the creation of nuclear-weapons-free zones. Specific regions were considered to be the Balkans, the Mediterranean, and the Adriatic. There was also talk of the Far East, Middle East, and several other regions of the world. Subsequently, an agreement was reached through the efforts of diplomatic negotiations and the involvement of international organizations. This agreement was about the creation of four nuclear zones – in Latin America (the Tlatelolco Agreement), in the South Pacific (the Rarotonga Agreement), in South Asia (the Bangkok Agreement), and in Africa (the Pelindaba Agreement). In connection with the U.S. signature of the protocol to the African Nuclear-Weapon-Free Zone (ANWFZ) Treaty in 1996, it announced that U.S. adherence “will not limit options available to the United States in response to

an attack by an NWFZ party using weapons of mass destruction”⁷. Other regions are also named where it is also possible to create nuclear-free zones. For example the Korean Peninsula, Eastern, and Central Europe, Central Asia. Another important achievement is UN General Assembly Resolution 51/45 on the establishment of a nuclear-free zone in the Southern Hemisphere. It must be said that the United States, Britain, and France were opposed to this agreement. Russia, along with 38 other countries, also refrained. It is interesting to mention the fact that while the Association of Southeast Asian Nations attempted to implement and enforce a Southeast Asia Nuclear Weapon Free Zone in 1995, none of the recognized nuclear weapons states has agreed to its terms⁸.

After the end of the ‘Cold War’, NATO dramatically reduced the number of nuclear weapons stationed in Europe and its reliance on nuclear weapons in NATO strategy. NATO remains committed to contributing to creating the conditions for further reductions in the future based on reciprocity, recognising that progress on arms control and disarmament must take into account the prevailing international security environment⁹.

It should be noted that one of the particularly delicate issues in the distribution of cargo in the transatlantic alliance is the containment of nuclear weapons. And also its distribution among European allies. What no one could have imagined a few years ago resurfaced in NATO's political agenda, this is a discussion about nuclear weapons.

Nuclear weapons containment

It should be noted that this issue has been under discussion in the Alliance for several years. In any case, it includes, first and foremost, the modernization of obsolete atomic bombs – B61 – and the aircraft platforms required for their transport under the Nuclear Non-Proliferation Treaty. The participating parties are the United States, Belgium, Germany, Italy, the Netherlands, and Turkey. Also in 2014, the Russian president resumed these debated debates in the context of the annexation of Crimea. He again raised the issue of Russia's nuclear arsenal and praised NATO members who have long demanded more for technological re-equipment with their usual, threatening rhetoric. At the same time, the 1987 Intermediate-Range Nuclear Forces (INF Treaty) on the destruction of short- and medium-range systems in Europe was threatened. This agreement, together with the Strategic Assault Arms Reduction Treaty (START

⁷ S. Lodgaard, *Nuclear Disarmament and Non-Proliferation. Towards a nuclear-weapon-free world?*, New York 2011, p. 63.

⁸ N. K. Finney, *On Strategy: A Primer*, Fort Leavenworth 2020, p. 192.

⁹ *NATO and Nuclear Disarmament*, North Atlantic Treaty Organization, October 2020, p. 1 <https://www.nato.int/nato_static_fl2014/assets/pdf/2020/10/pdf/2010-factsheet-nuclear-disarmament-en.pdf> (5.06.2021).

Treaties), forms the basis of nuclear arms control between the United States and Russia. The repeal of the 1987 Treaty led to new threats and risks to nuclear safety around the world. These developments and the threat posed by changes in national nuclear strategy, the collapse of the Intermediate-Range Nuclear Forces (INF) Treaty, and the modernisation of nuclear and conventional forces of major and regional powers require NATO to maintain a robust and credible deterrence and defence¹⁰.

NATO actively contributes to effective and verifiable arms control, disarmament, and non-proliferation efforts through its policies, activities, and its member countries. NATO itself is not a party to any treaty, but it supports and facilitates dialogue among members, partners, and other countries to implement their international obligations¹¹.

The rational and political-strategic basis of NATO ‘Nuclear Alliance’

As long as there are nuclear weapons in the European environment, Europe will depend on the position of ‘extended containment’. All of this is provided by the nuclear potential of the United States. In the debate over European and especially German strategy during the ‘Cold War’, according to a generally accepted basic principle, nuclear weapons were merely a political mechanism. And should in no way be considered a tactical basic weapon. Thus the line understood the political function of restraint. This approach must be maintained in all strategies, operational and technical considerations. Politicians and nuclear weapons experts, of course, do not rule out that a policy of containment could one day crash and nuclear weapons be used in Europe.

Just a few nuclear warheads can cause a lot of casualties. Also, make a large part of the territory of Europe unusable for life. It will be a humanitarian catastrophe of incredible scale.

The dilemma underlying the nuclear deterrence strategy can be solved, but it takes quite a lot of time and effort. It must be said that nuclear weapons should not be designed or intended as a weapon of war. It should also help curb its use. This is a goal of political-strategic nature. A high level of the so-called nuclear threshold must also be ensured. A dramatic qualitative leap from the use of conventional weapons to the possibility of nuclear destruction must also be maintained. In line with the general trend of nuclear weapons modernization, it needs to become more precise, including adjustment to very low levels of

¹⁰ A. Lanata, *Regional Perspectives Report on Russia*, 2021, p. 7, <<https://www.act.nato.int/application/files/9816/1350/4281/regional-perspectives-2021-01.pdf>> (6.07.2021).

¹¹ *Arms control, disarmament and non-proliferation in NATO*, <https://www.nato.int/cps/en/natohq/topics_48895.htm> (6.07.2021).

flexibility and explosive power. All of this could lead to a reduction in the nuclear threshold.

Certain areas of current debate give the impression that the nuclear arsenal of sub-strategic destinations in Europe can be compared in terms of numerical data, for example, the capacity ratio of tanks and fighter jets. Also, such a mechanical notion of equilibrium is not allowed. That is, where nuclear weapons will be used on the battlefield. The role and function of nuclear weapons categories within the overall containment strategy is crucial.

NATO's nuclear deterrent instruments will remain an important element of the Alliance's security, was announced to the meeting with the participation of a representative of the Warsaw Institute organized by the German Council on Foreign Relations (DGAP) and experts of the North Atlantic Pact Organization, which took place on May 20, 2021. It was discussed that NATO does not rule out continuing the path of nuclear deterrence, especially in the context of the published NATO 2030 report, which is a preview of a new strategic document. Due to the policies of countries such as Russia or China, the Alliance as a whole will not abandon the nuclear deterrence doctrine, which is an important element of security and the Alliance's cohesion¹².

It must be said that NATO's role in global security is quite important. Moreover, its role is crucial in addressing the issue of non-proliferation of weapons of mass destruction and asymmetric threats, as well as other risks. Asymmetric threats have had a major impact on changing the international system. In the modern era, the security dilemma has created a new dimension of the international system. In the context of the new security dilemma, at which time it is impossible to predict asymmetric threat, the role of international organizations is significantly increasing. It must be said that international terrorism, nuclear proliferation, and conflict remain to this day a major problem of international security. The further spread of nuclear technology is a cause for concern, as new nuclear states may be created. Terrorist groups may also seize nuclear weapons. The use of nuclear weapons will lead to significant geopolitical changes. Selected countries will seek to establish or strengthen ties with nuclear-armed states; Other states will even start fighting for global nuclear disarmament.

In the 21st Century, along with various challenges, limiting the proliferation of weapons of mass destruction is one of the key issues for global security. It must be said that NATO plays an important role in this direction. NATO is also cooperating with partner countries on the non-proliferation of

¹² *NATO's nuclear deterrent instruments continue to be an important component of the Alliance's security: "THE FUTURE OF NATO'S NUCLEAR DEFENSE POSTURE" MEETING*, <<https://warsawinstitute.org/natos-nuclear-deterrent-instruments-continue-important-component-alliances-security-future-natos-nuclear-defense-posture-meeting/>> (10.06.2021).

weapons of mass destruction. In addition, this issue directly defines the basic principles of Euro-Atlantic security. It also contributes to the existence of strategic parity on the European continent. In the light of modern processes, in the context of the 'New Cold War', the re-establishment of the Institute as a nuclear planning group within NATO as a military-political alliance. A new type of nuclear strike strategy has been developed. The serious strategic arms race has begun in world politics itself. A clear example of this is the communist regime in North Korea and its policy of nuclear blackmail. Achieving international security is undoubtedly an urgent and difficult issue in the modern world.

The possible emergence of new nuclear states in terms of geopolitical aspects poses a major threat to global security. Dissemination of nuclear technologies and expertise in this field is a matter of concern. This is because technologies and existing expertise can fall into the hands of terrorists. Terrorists want to seize nuclear materials and other components of weapons of mass destruction. It must be said that the use of nuclear weapons will inevitably lead to significant geopolitical changes in the future. At the same time, many states are trying to strengthen ties with nuclear-weapon states. But, the issue of fighting global disarmament is a major problem in international politics. This is because the nuclear states give way to the existing bitcoin arsenal. There is also a desire for liquidation. They are, on the contrary, trying to refine and improve the components of the existing strategic strike weapons. All of this, of course, puts the world in greater danger.

Conclusion

It should be noted that in modern times NATO plays an important role in ensuring international security. The role of the Alliance as a guarantor of global security is also growing and becoming more relevant. It is important to note that in the face of new challenges and threats, NATO is pursuing a policy of non-proliferation of weapons of mass destruction and a strategy to ensure global peace.

Nuclear weapons are indeed a key component of NATO's overall capabilities. For deterrence and defence, alongside conventional and missile defence forces. NATO is committed to arms control. Also along with the disarmament policy to prevent the proliferation of weapons of mass destruction. But as long as nuclear weapons exist, it will remain a nuclear alliance. It should be noted that reliable containment and defence remain a key basis for avoiding conflicts and war in NATO's overall strategy. The credibility of NATO nuclear forces is crucial, which is why the security, combat readiness, and effectiveness of these forces are constantly assessed by technological and geostrategic development policies.

It should be noted that NATO's nuclear policy is aimed at reducing the risks in this area. As well as through control and cooperation. It should be noted that the development of a disarmament policy requires quite serious diplomatic negotiations and the development of new strategies. As well as pursuing significant economic policies in terms of financial costs. We can answer the research questions by saying that after nuclear disarmament, it is quite difficult to predict. That is, what the global security architecture will look like and how stable the world will be. It should also be noted that pursuing a policy of nuclear disarmament requires significant financial resources. It is quite important to pursue the right economic policies and provide assistance to those states that renounce nuclear weapons. They must also have strong guarantees of national security and sovereignty.

The production of a disarmament policy is virtually unattainable in modern conditions. This is due to international geopolitical and geoeconomic factors. Because several states want to become global or regional players. For this, they believe that they must have nuclear weapons. The most effective means of maintaining international peace and security today is to curb weapons of mass destruction and exercise effective control over them. It is also very important that as many states as possible be involved in the disarmament process.

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THE CLASH FOR THE NORD STREAM 2. 5 MYTHS ABOUT RUSSIA'S STRUGGLING WITH THE PROJECT REVEALED

Abstract:

The basis of the article is an analysis of the economic viability of the Nord Stream 2 (NS2) investment in the long term and at the same time verification of the beliefs that have arisen around the implementation of this project. Opinions that NS2 is a strictly political project, too costly; and on top of that knowing efforts of European countries to systematically reduce the consumption of hydrocarbons; not needed – are quite widespread. Further obstacles to the NS2 project seem to reinforce this view. Meanwhile, the analysis of the details of the entire situation and the practice of the functioning of international legal rules shows that the Russian side has more arguments, greater determination and, in the long term, much greater benefits from the implementation of the project. During the research and further analyses, five statements-myths were revealed and refuted. These myths concern the excessive capacity of the new gas pipeline, the impact of the new gas directive on Gazprom's monopoly practices, the reaction of Western countries participating in the project, the possibility of forcing Russia to maintain gas transit through Ukraine, and last but not least, the European Union's (EU) negotiating position towards Russia regarding gas imports. The study of the source texts also revealed two unexpected arguments in the form of NS2 being an element supporting the fight to reduce emissions in Europe, and as a barrier against the EU's growing dependence on gas imports from the United States. Thus, in the current clash of supporters and opponents of the NS2 project, Russia seems to be winning 5-0. Therefore, the final part contains conclusions for the future for EU countries, including Poland.

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Keywords:

Nord Stream, Gazprom, gas transit, energy solidarity, new gas directive, European strategic autonomy, energy-market liberalization, third-party access

Introduction

The Russian project to build the Nord Stream 2 gas pipeline might have, in the opinion of its authors, seemed like an ideal plan. After the rapid implementation and commissioning of the Nord Stream 1 project and bypassing the European Union's regulations on the liberalization of the energy market, NS2 was to be implemented in the same way and thus double the gas transmission capacity from Russia to Germany, omitting transit countries. This, in turn, would provide several benefits that go far beyond the financial aspects. In addition to the 2,000 km shorter and cheaper road to Europe, Russia would gain new cards in the 'gas game'.

First of all, it could partially or even eliminate the need for transit through Poland and Ukraine, and this would worsen the already poor negotiating position of these countries as regards the supply of Russian gas. Losing the status of transit countries, Poland and Ukraine would only become end-users, with little impact on the prices of the raw material supplied to them. This threat could be used both for occasional pressure on a given country, under the threat of reducing transit, and for punishing a rebellious country with complete elimination of transit. The whole project would increase Russia's dominance on the European energy market, giving this country a privileged position about domestic entities obliged to apply the rules and practices of the liberalized energy sector.

Meanwhile, the NS2 aroused a lot of controversy from the very beginning. From the moment the project was announced; shortly after the annexation of Crimea and the imposition of international sanctions on Russia; through the momentum with which it was planned; followed by the route, which also interfered with the natural environment of the Baltic Sea; opposition from some EU Member States and lengthy court disputes, and finally followed by the threat of destabilization of the European energy market.

This time, however, the European Union was not surprised. The tedious preparations for the adoption of the new gas directive began, and further difficulties started to accumulate before NS2. The project, the implementation of which, technically speaking, could take less than 2 years, was still not completed 6 years after its announcement. During this time, not only did the costs of carrying out the investment go up but also the directions of economic development of the entire EU were corrected. Climate policy and a low-emission (ultimately zero-emission) economy have become important priorities

in planning the economic development of the EU, which had consequences also for gas imports to Europe.

From the latter perspective, the project seemed not only too big and too expensive but also anachronistic, out of step with the times. Russia has previously missed two important changes in the area of gas extraction and distribution, namely the shale revolution and the possibility of transporting gas in liquefied form as LNG. As a result, she suffered huge losses. All the more, the opinion that NS2 is another example of acting not only late but also against the surrounding reality, was gaining in importance.

Given the above controversy, five key hypotheses formulated by opponents of NS2 were analyzed. These are; gas pipeline capacity in the context of forecasts of declining gas demand in Europe until 2050; the functioning of the new gas directive aimed at controlling the use of NS2 infrastructure; the acting of Western European countries as investment shareholders; the possibility of influencing Russia by the EU and the United States in terms of maintaining gas transit through Ukraine; and finally, the operation of the principle of energy solidarity and European strategic autonomy in practice. This article presents the verification results which seem to confirm the arguments of the Russian side. Moreover, with the passage of time and the progress of the implementation of the NS2 project, Russia's position grows systematically.

Myth #1. Nord Stream 2 is too big and far too expensive for the investment to be considered profitable from an economic point of view

Nord Stream 2 is a twin project to the Nord Stream two-pipe northern gas pipeline constructed in 2010-2012. The route of both projects is also very similar, except for the starting point – for the prototype, it is the port of Vyborg, and for NS2 it is the port of Ust-Luga (see Map 1). To fully assess the momentum of the NS2 investment, it is necessary to look at the cumulative parameters of both projects. The existing northern gas pipeline is approx. 1 222 km long and it is also the longest sea gas pipeline in the world. The capacity of both lines is 55 billion cubic meters (bcm), which places this pipeline among the largest facilities of this type. Meanwhile, two more lines, which are the subject of the NS2 project, will double this capacity to a record 110 bcm after commissioning². Taking into account the fact that all-natural gas exports from Russia to Europe in 2019 amounted to approximately 180 bcm³, it

² A. Akbari, T. H. Moazen, *Nord Stream 2 and the strategic balance of power*, “Petroleum Business Review”, 2019, <https://pbr.put.ac.ir/article_115496_d0c4aba2a1d94454167419297296b0f9.pdf> (30.06.2021).

³ See: *PJSC Gazprom Annual Report 2019*, p. 18, <<https://www.gazprom.com/f/posts/72/802627/gazprom-annual-report-2019-en.pdf>> (30.06.2021).

can be assessed that this investment is strategic, and may in the future be the main source of natural gas transport from Russia to Europe. On the other hand, several questions can also be asked about the economic viability of the project, especially in the context of increasing implementation costs and the extended period of return on investment.

Map 1. Nord Stream and Nord Stream 2 routes.



Source: *PJSC Gazprom Annual Report 2017*,
<https://www.gazprom.com/f/posts/60/709300/gazprom-annual-report-2017-eng.pdf>
 (30.06.2021).

While the first Nord Stream project, the sea part of which was initially estimated at EUR 7.4 billion, was finally implemented for a higher amount of EUR 8.8 billion, with no delays in implementation⁴, the situation in the case of NS2 is different. While still at the planning stage, the cost of the offshore part of the NS2 project was estimated at EUR 9.5 billion. Gazprom became the main shareholder with a 50% stake. The missing half was provided equally by the following entities in the form of preferential loans: German Uniper (10%) and Wintershall (10%), British Royal Dutch Shell (10%), Austrian OMV (10%)

⁴ *PJSC Gazprom Annual Report 2011*, p. 11, <https://www.gazprom.com/f/posts/60/591327/annual-report-2011-eng.pdf> (30.06.2021).

and French Engie (10%)⁵. In addition, the project also includes the construction of onshore gas pipelines: in Russia, supplying gas from West Siberia to the port in Ust-Luga, and in Germany, transporting gas further to the hub in the Austrian Baumgarten. Their cost was estimated at approx. EUR 6 billion⁶. The NS2 project without the onshore part does not exist as being the middle part of a larger project it would lead “from nowhere to nowhere”⁷. Therefore, when speaking precisely about the costs of the entire project, which is the mapping of a new route for the transport of Russian gas to Europe, it is worth bearing in mind the total costs of the individual sections.

Let's go back to the sea part of NS2, estimated at EUR 9,5 billion, though. The designers of the 3rd and 4th strand of the northern gas pipeline probably did not take into account the avalanche of obstacles that flooded the project presented and signed by shareholders in 2015. Russia's negative perception in Europe after the annexation of Crimea; American sanctions imposed, inter alia, on the Russian energy sector⁸; court battles of countries opposing the project (including Poland); the poisoning of Alexei Navalny⁹ as well as changes in the route of NS2, in connection with the Danish-Polish agreement on the

⁵ A. Goldthau, *Assessing Nord Stream 2: regulation, geopolitics & energy security in the EU, Central Eastern Europe & the UK*, European Centre for Energy and Resource Security, 2016, p.7 <<https://www.asktheeu.org/en/request/7115/response/23365/attach/2/Goldthau%20July%202016.pdf>> (30.06.2021)

⁶ In 2018, information appeared that the Russian part of the gas pipelines supplying NS2 alone will cost, according to information from Gazprom, approx. EUR 22 billion. See: A. Kublik, *Gazprom ujawnił astronomiczne koszty lądowej części Nord Streamu 2*, <<https://wyborcza.biz/biznes/7,177151,22904222,gazprom-ujawnil-astronomiczne-koszty-ladowej-czesci-nord-stream.html?disableRedirects=true>> (30.06.2021)

⁷ P. Przybyło, *The real financial costs of Nord Stream 2 – economic sensitivity analysis of the alternatives to the offshore pipeline*, Warsaw 2019, p. 6, <https://pulaski.pl/wp-content/uploads/2019/05/Raport_NordStream_TS-1.pdf> (30.06.2021).

⁸ After the annexation of Crimea, the United States was systematically imposing sanctions on Russia and the Russian energy sector. PEESA sanctions on the NS2 project were imposed in 2020, which resulted in several contractors withdrawing from the NS2 construction project. A year later, in January 2021, Congress voted to extend the PEESCA sanctions, but the Joe Biden administration, more open to improving relations, withdrew in May 2021 from imposing new sanctions, deeming them counterproductive. See: R. Formuszewicz, Sz. Kardaś, A. Łoskot-Strachota, *The dispute over Nord Stream 2: the stances and the outlook*, <<https://www.osw.waw.pl/en/publikacje/osw-commentary/2021-03-10/dispute-over-nord-stream-2-stances-and-outlook>> (30.06.2021).

⁹ The poisoning of Alexei Navalny for some time stiffened Germany's position towards the Russian investment partner. However, measures were aimed at a temporary moratorium on the completion of construction or certification of the pipelines rather than the abandonment of the project. At the same time, these would be multilateral arrangements with the participation of the EU or the United States and not an independent decision of Germany. See: R. Formuszewicz, Sz. Kardaś, A. Łoskot-Strachota, *op. cit.*

delimitation of the sea border from 2018¹⁰; pandemic situation and temporary suspension of the project triggered by waiting for additional environmental analyses¹¹ – they were all supposed to completely torpedo the project, however, failed. Nevertheless, they prevented the project from being completed on time, i.e. by the end of 2019¹². This date was of key importance not only due to the economic account but also due to the ending of the gas transit contract with Ukraine. This thread will be described in more detail later in the paper (see myth #4).

At the time of this publication, the project was still incomplete. Indeed, the pipes of thread number 3 were fully laid in June, but they were not welded¹³. It is estimated that 95-98% of the project was implemented¹⁴. Such a long delay in the implementation of the project probably had to significantly increase its costs, and perhaps even question the viability of its continuation. Meanwhile, analyst Artem Tuzov, executive director of the capital market department at Univer Capital, estimated that the costs of building the gas pipeline increased by approx. EUR 1.7 billion¹⁵ which, considering the scale of difficulties encountered by the project, is a relatively low amount.

The construction phase of NS2 is a foregone conclusion, but a new battle is looming on the horizon - the certification process, without which the gas pipeline will not be able to start. Experts estimate that this process may take several months or even years before the rules for using the gas pipeline are brought into line with EU law. This is another big risk for this investment. And finally, it is worth adding two types of costs, which also make up the project: physical preparation of the Baltic seabed for pipe laying, thus removing World

¹⁰ See: A. Łoskot-Strachota, *Dania opóźnia budowę Nord Stream 2*, <<https://www.osw.waw.pl/pl/publikacje/analizy/2019-03-29/dania-opoznia-budowe-nord-stream-2>> (30.06.2021).

¹¹ Denmark has been delaying approval for the construction of Nord Stream 2 in its territorial waters since 2017, and the final decision was made in December 2019. See: M. Marszałkowski, *Duńska komisja odwoławcza odrzuciła apelację ws. trasy Nord Stream 2*, <<https://biznesalert.pl/dania-odwolanie-apelacja-nord-stream-2-gaz-energetyka/>> (30.06.2021).

¹² *PJSC Gazprom Annual Report 2017*, p. 52, <<https://www.gazprom.com/f/posts/60/709300/gazprom-annual-report-2017-eng.pdf>> (30.06.2021).

¹³ On June 4, 2021, Russian President Vladimir Putin announced the completion of the construction of the third NS2 branch and readiness to fill it with gas. This shows the determination of the Russian side to complete the project. See: *Putin soobshhil o zavershenii prokladki trub pervoj niti "Severnogo potoka – 2"*, <<https://ria.ru/20210604/truby-1735629676.html>> (30.06.2021).

¹⁴ J. Wiech, *USA nakładają nowe sankcje na Nord Stream 2, ale rezygnują z kluczowego uderzenia*, <<https://www.energetyka24.com/usa-nakladaja-nowe-sankcje-na-nord-stream-2-ale-rezygnuja-z-kluczowego-uderzenia>> (30.06.2021).

¹⁵ See D. Czyżewski, *Przez opóźnienie, koszt budowy Nord Stream 2 ogromnie wzrósł. W grę wchodzi miliardy*, <<https://www.energetyka24.com/przez-opoznienie-koszt-budowy-nord-stream-2-ogromnie-wzroslo-w-gre-wchodza-miliardy>> (30.06.2021).

War II missiles, dumped chemicals, chemical ammunition and other items accumulated there in the past decades; and also higher costs of decommissioning the NS2 gas pipeline in the future than in the case of onshore gas pipelines¹⁶.

An important element of the NS2 project profitability assessment is the payback period and forecasts of natural gas demand in Europe for the next decades. And the latter show a downward trend. While in 2018 the International Energy Agency (IEA) estimated Europe's demand for natural gas in 2040 at 592 bcm, in 2019 these estimates were changed to 557 bcm, and a year later they were reduced by another 21 bcm to the level of 536 bcm. If only the EU countries are included in these forecasts, the demand for gas in 2040 will be only 329 bcm. This is related to the energy transformation of economies and the increasingly ambitious goals of the EU in the field of low-carbon emissions and the use of renewable energy sources (RES). At the same time, IEA experts estimate that the potential increase in energy demand in the EU, caused by the decline in the use of coal and nuclear energy, will be covered by RES rather than by natural gas. Demand forecasts are therefore not overly optimistic, already in 2030 the demand for gas in the EU will be 8% lower than in 2019¹⁷.

However, this does not discourage supporters of gas imports to Europe, as, according to EIA forecasts, own production of natural gas in the European Union will decline even faster. From the level of around 120 bcm in 2019, it is expected to drop to only 40 bcm in 2040. Already in 2030, the EU will be 90% dependent on gas imports. If we take into account the whole of Europe (including Norway), then the production forecast for 2040 increases to 90 bcm. Nevertheless, such a value can be achieved assuming further intensive investments in extraction, otherwise, there may be a decrease in production by as much as 250 bcm, i.e. by 90%¹⁸.

The European Union adjusts its goals on an ongoing basis following the adopted European Green Deal¹⁹ and the implemented climate policy. Both the liquefied gas (LNG) and renewable energy infrastructure are under development. And two decades is a long period, so further adjustments to the long-term forecasts of natural gas production and consumption in the EU can be expected.

¹⁶ P. Przybyło, *op. cit.*, p. 14.

¹⁷ S. Elliott, *IEA slashes 2040 European gas demand forecast by further 21 Bcm*, <<https://www.spglobal.com/platts/en/market-insights/latest-news/natural-gas/101320-iea-slashes-2040-european-gas-demand-forecast-by-further-21-bcm>> (30.06.2021).

¹⁸ S. Elliott, *IEA cuts 2040 EU gas demand forecast by further 22 Bcm*, <<https://www.spglobal.com/platts/en/market-insights/latest-news/natural-gas/111319-iea-cuts-2040-eu-gas-demand-forecast-by-further-22-bcm>> (30.06.2021).

¹⁹ *The European Green Deal*, <https://ec.europa.eu/info/sites/default/files/european-green-deal-communication_en.pdf> (30.06.2021).

Taking into account the overall investment costs of NS2, the existence of alternative onshore gas pipelines through which gas can be transported from Russia to Germany, and the forecasts for declining demand for natural gas in European Union countries – the view that the construction of NS2 is a very risky project, much too large and much too expensive quickly gained a dominant position among experts. Meanwhile, the Russian side does not seem to share this position, having its perspective.

The Russian strategy of gas exports to Europe is largely based on the Falin-Kwiciński doctrine, which assumes pressure in the area of energy in the countries of Central and Eastern Europe, instead of a military presence²⁰. For decades, secret, bilateral gas contracts, with different levels of gas prices, depending on the country's better or worse political relations with the Kremlin were used. This made it possible to effectively isolate or even antagonize individual countries against each other.

Under the conditions of the functioning of the principle of energy solidarity, Russia has not changed its strategy too much and is also 'successful' in 'playing' European countries. The NS2 project itself shows the divergent attitude of individual EU members: from enthusiasm and high openness to cooperation with Russia, i.e. in the case of Germany, Austria, but also France, through neutral countries, e.g. Denmark, to countries strongly warning against excessive dependence on Russian suppliers that lose economically on the NS2 project, such as Poland, Lithuania or the Baltic States. Ukraine is at the end of this scale, which has been in open conflict with Russia since the annexation of Crimea and the war in Donbas. Russia does not seem to fully believe in the effectiveness of the European principle of energy solidarity, because practice clearly shows that the economic or political interest of a given country or group of countries has an advantage over it. This capital cannot be overestimated for Russia, allowing it to continue a rather effective strategy and reap benefits, mainly political, which often gain an advantage over economic aspects in the actions of this country. Thus, even the increased costs of the project do not necessarily cancel it from the Russian perspective. As long as NS2 allows maintaining or even increasing political influence, it can be still seen as a profitable project.

The same applies to declarations on reducing the demand for energy resources and transitioning to a zero-emission economy or achieving climate neutrality by 2050 – as stated in the European Green Deal²¹. As long as individual member states themselves question these assumptions, as did

²⁰ M. Zaniewicz, *Nowa geopolityka gazociągów w Europie Środkowo-Wschodniej*, <<https://warsawinstitute.org/pl/nowa-geopolityka-gazociagow-w-europie-srodkowo-wschodniej-2/>>, (30.06.2021).

²¹ *The European Green Deal*, *op. cit.*

Hungary and Poland²² until recently, the Russian side may continue its strategy of increasing natural gas exports to Europe. The Russian authorities find it easier to depreciate the importance of the EU's environmental declarations, as Russia itself is not very actively involved in reducing global emissions. Green technologies were treated in this country as a threat to the strategy of extensive hydrocarbon exploitation since the 1990s. The timeliness of this approach is confirmed by the provisions of the National Economic Security Strategy of 2017²³. Natural gas is more environmentally friendly than crude oil, so even in the era of transformation of economies towards ecological neutrality, the Russian belief that there is a high demand for gas in Europe seems to be unwavering.

And finally, the most progressive scenario, which assumes an effective limitation of both natural gas consumption in Europe and the potential influence of Russia. It turns out that the existing NS2 infrastructure, even if it is not fully used for gas transmission, does not have to be wasted. It can be used to pump other raw materials, i.e. hydrogen, which is emerging as a very promising instrument for the decarbonisation of various areas of the economy. Cooperation in the field of hydrogen import, especially green hydrogen, is a new potential source of extensive cooperation between Germany and Russia. Dialogue in this regard was strongly intensified by both countries in 2020²⁴. Russian hydrogen exports to Europe will likely become as strategic as gas exports.

²² Until 2020, the leaders of both countries spoke out in opposition to the European Green Deal, emphasizing nuclear energy (Hungary) and coal (Poland), and blocking in June 2019, together with the Czech Republic and Estonia, the provision on achieving climate neutrality in the EU by 2050 in the document summarizing the European Climate Summit. Currently, the position of these countries is evolving towards support and cooperation within the EGD. See: T. Bielecki, *Polska zablokowała ugodę UE w sprawie klimatu*, <<https://www.dw.com/pl/polska-zablokowa%C5%82a-ugod%C4%99-ue-w-sprawie-klimatu/a-49289822>> (30.06.2021); D. Hejj, *Héjj: Polak, Węgier – dwa bratanki. Czy do neutralności klimatycznej?*, <<https://biznesalert.pl/polska-wegry-neutralnosc-klimatyczna-energetyka-klimat-srodowisko/>> (30.06.2021); M. Mikowski, M. Zdziera, M. Rudy, *Duda: Gospodarka energetyczna Polski oparta na węglu wymaga głębokiego przekształcenia*, <<https://www.bankier.pl/wiadomosc/Duda-Gospodarka-energetyczna-Polski-oparta-na-weglu-wymaga-glebokiego-przekształcenia-8104949.html>> (30.06.2021)

²³ S. Karaganov, *Turning to Nature: Russia's New Environmental Policy in "Green" Transformation of the Global Economy and Politics*, National Research University – Higher School Of Economics, 2021, p. 13, <https://eng.globalaffairs.ru/wp-content/uploads/2021/04/report_turning-to-nature.pdf> (30.06.2021).

²⁴ Sz. Kardaś, M. Kędzierski, *A hydrogen alliance? The potential for German-Russian cooperation in hydrogen energy*, <<https://www.osw.waw.pl/en/publikacje/osw-commentary/2021-03-03/a-hydrogen-alliance-potential-german-russian-cooperation>> (30.06.2021).

The three arguments on the Russian side cited above, and especially the last one, showing the great perspective of the NS2 project, seem to refute myth 1, which undermines its economic rationality.

Myth #2. The new 2019 gas directive of the European Parliament and the Council (EU) is an effective tool to counteract NS2 monopolization

The second myth revealed in the course of the conducted research is the belief that EU law, and especially the new gas directive of 2019²⁵, will be able to protect the European market from monopolizing NS2 in the hands of Russia. This project is a kind of test to what extent the liberalization of the energy market in the EU has been successfully implemented.

The basis for the liberalization of the energy market and, at the same time, the energy security of the EU countries is the Third Energy Package (TPE) adopted in 2009, which entered into force in 2011²⁶. One of the main provisions of TPE was the separation of the producer and operator roles and the introduction of specific implementation tools for the single energy market - the so-called network codes. This practice gave rise to numerous legislative acts, including ordinances, which precisely regulated individual aspects of not only the energy market but also the gas market, including the procedure for reporting infrastructure investments²⁷. Thus, the liberalization of the energy market in the EU is slowly becoming a fact both in theory and in practice.

Nevertheless, even the extensive EU regulations were not able to adequately address the investments of non-EU countries, such as Russia. Although the Nord Stream 1 gas pipeline built before the introduction of the regulations is fully used by Gazprom, this does not apply to its onshore branch – the OPAL gas pipeline, running through Germany. The European Commission originally agreed in 2016 to apply an exemption to Gazprom, however, following a complaint by Poland and two more judgments: the General Court of the European Union on May 20, 2020²⁸, and the Court of

²⁵ *Directive (EU) 2019/692 of the European Parliament and of the Council of 17 April 2019*, <<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0692>> (30.06.2021).

²⁶ A. Kułaga, *Bezpieczeństwo gazowe Polski w kontekście polityki bezpieczeństwa energetycznego Unii Europejskiej*, p. 126, <<https://depotuw.ceon.pl/bitstream/handle/item/3299/2100-DR-NOB-176177.pdf?sequence=1>> (30.06.2021).

²⁷ *Ibidem*, pp. 126-130.

²⁸ *General Court of the European Union, Press Release No 62/20*, Luxembourg, 20 May 2020, <<https://curia.europa.eu/jcms/upload/docs/application/pdf/2020-05/cp200062en.pdf>> (30.06.2021).

Justice of the European Union (CJEU) in July 2021²⁹. Gazprom can only use 50% of the capacity at the Brandov point, i.e. 12,5 bcm. Gas transmission through the OPAL gas pipeline was already reduced by 50% in 2020. Surplus gas pumped by Nord Stream 1 was redirected to the EUGAL gas pipeline, the inland extension of NS2 on German territory³⁰. So when the NS2 project appeared in 2015, in November 2017 the European Commission proposed the preparation of a new gas directive that would protect the interests of the European side in the use of gas pipelines of third countries not only on land but also in territorial waters of the EU (including the case of Germany)³¹.

The draft of the new directive aroused controversy from the very beginning. In addition to the division into supporters and opponents of the NS2 project, there was a division related to the increased role of the European Commission in the jurisdiction over gas pipelines about the individual Member States. Throughout 2018, during the presidencies of Bulgaria and Austria in favour of the project, the draft directive was in principle suspended, despite calls from countries for its adoption. Work began again in early 2019 with the start of the Romanian Presidency. Finally, on May 23, 2019, the new gas directive was adopted as amended, in a relaxed version compared to the original plans, and the international sanctions against NS2 delayed the project so much that it was not completed before the directive was adopted, and was therefore covered by it³².

The 2019 gas directive is the first document confirming the jurisdiction of the EU institutions over the NS2 gas pipeline running on the seabed. Of course, it is about the part that runs through the territorial waters of Germany, i.e. about 22 km from the coast. And it is Germany, by the new directive, that will have a decisive role in the interpretation and implementation of its provisions. For example, they can derogate from such provisions as ownership unbundling, transparent transmission tariffs or third party access to the gas pipeline for up to 20 years with the possibility of extension from the provisions of the Russian partner. In turn, changing this type of decision will require other EU countries to obtain a CJEU judgment, which may take up to several years³³.

²⁹ Court of Justice of the European Union Press Release No 129/21, Luxembourg, 15 July 2021, Judgment in Case C-848/19 P Germany v Poland, <<https://curia.europa.eu/jcms/upload/docs/application/pdf/2021-07/cp210129en.pdf>> (15.07.2021).

³⁰ A. Łoskot-Strachota, *Łoskot-Strachota: Gazprom będzie próbował wyjść z impasu wyroku TSUE ws. OPAL*, <<https://biznesalert.pl/gazprom-rosja-nord-stream-gaz-opal-energetyka/>> (30.06.2021).

³¹ A. Łoskot-Strachota, *The gas directive revision: EU law poses problems for Nord Stream 2*, <<https://www.osw.waw.pl/en/publikacje/analyses/2019-02-21/gas-directive-revision-eu-law-poses-problems-nord-stream-2>> (30.06.2021).

³² *Ibidem*.

³³ B. Bieliszczyk, Sz. Zaręba, *Nowelizacja dyrektywy gazowej a Nord Stream 2 – konsekwencje prawne i polityczne*, "Bulletin of the The Polish Institute of International

Possible irregularities in the application of the new gas directive by Germany are substantiated by the fact that so far the country has not correctly implemented the original gas directive of 2009. The European Commission noticed this fact only in 2015. In turn, the proceedings before the CJEU, in this case, were initiated only in 2018³⁴ and were still pending until the publication was published.

Again, the perspective of the Russian side seems to diverge from the negative scenario outlined. Indeed, the new directive complicates and hinders the implementation of the investment in its original form, but again, contrary to the expectations of its opponents, it does not eliminate its benefits. The aforementioned directive, as already mentioned, is softer than the original proposal, and the fact that it is Germany – Russia's main economic partner for the NS2 project and not only – will have a decisive influence on the practice of applying the gas directive, is rather optimistic among the Russian authorities.

However, different scenarios are considered. From the most obvious one, i.e. selling the raw material to Germany on the high seas, approx. 22 km from the coast, i.e. outside EU territorial waters, to partial implementation of the provisions of the directive. The latter variant, used in small sections, will make it difficult for Gazprom to apply monopoly practices, but will not eliminate them. Judging by the statements of Russian politicians, the option of selling on the high seas is currently being heavily considered³⁵.

Summarizing this thread. No directive will stop Gazprom's monopoly practices about EU member states, as long as there are such large discrepancies in the positions of individual EU members, there will be slowness in adopting subsequent legal acts, and individual countries will have so much freedom in interpreting adopted legal acts. Undoubtedly, EU law, the principle of energy solidarity and other concepts liberalizing the energy market in the EU are a step behind the practice of large corporations pursuing their interests in Europe. This statement debunks Myth 2.

Myth #3. If the gas directive limits Russia's access to 50% of NS2's capacity, the investment will not pay off for a long time

At the moment when the NS2 investment is completed and, most likely, nothing will stand in the way of it, the next stage of launching the pipeline is gaining importance, namely meeting the requirements of EU law. On August 25, 2021, the Higher National Court in Düsseldorf dismissed the request of Nord Stream AG company for a derogation from the provisions of the Third

Affairs” No. 88 (1836), <https://pism.pl/publikacje/Nowelizacja_dyrektywy_gazowej_a_Nord_Stream_2_konsekwencje_prawne_i_polityczne_> (30.0068.2021).

³⁴ *Ibidem*.

³⁵ See: *V Rossii otvetili na zajavlenie deputata Rady o "Severnom potoke — 2"*, <<https://ria.ru/20210813/potok-1745598480.html>> (31.08.2021).

Energy Package. This is another defeat of Gazprom in German courts in this case. In practice, this means that NS2 will be covered by several rules which are unfavourable to the Russian monopoly³⁶. Two requirements play a special role. The first one defines that the investor of the gas pipeline cannot manage it and supply it with the raw material at the same time. The second one, especially often quoted, states that Gazprom must leave 50% of the gas pipeline's capacity at the disposal of third parties from the EU³⁷. Since the first condition will most likely be met as a result of the use of Gazprom's complicated ties with numerous subsidiaries spread across Europe³⁸, it is worth paying attention to the second condition.

Russia is currently unable to meet this requirement. Technically, only gas supplied by Gazprom is connected to a gas pipeline in Russia. In addition, no other company in this country has a gas export license. In the short term, until this issue is resolved, the full transmission capacity of the new gas pipeline may not be fully used³⁹.

There is also another solution at stake – obtaining the so-called exemption, as for this procedure there is no requirement that the gas pipeline would have to be built before May 23, 2019. In this case, the exemption may be granted by the German regulator Bundesnetzagentur (BNA). However, he is required to consult his analogues in countries affected by the investment. In the case of Poland, it would be the Office of Competition and Consumer Protection (UOKiK). The decision made by BNA in this matter is subject to control by the European Commission (EC)⁴⁰.

If all these actions fail, the final scenario will have to be considered, i.e. the release of 50% of the gas pipeline to third parties from the EU. Meanwhile, several large EU countries, such as Germany, the Netherlands, Austria and France, are directly involved in the project or favourably inclined to purchase gas from Russia. If such countries get access to the NS2 transmission capacity released by Gazprom, then they will very likely buy the raw material also from Gazprom. It will be indirect support for this investment, its ROI, and also its

³⁶ W. Kwinta, *Spółka Nord Stream nie dostanie pełnej mocy gazociągu. Porażka Rosji*, 26.08.2021, <<https://inzynieria.com/paliwa/wiadomosci/62152,spolka-nord-stream-nie-dostanie-pełnej-mocy-gazociagu-porazka-rosji>> (31.08.2021).

³⁷ I. Trusewicz, *Nord Stream 2 ma być gotowy we wrześniu*, <<https://energia.rp.pl/surowce-i-paliwa/29751-nord-stream-2-ma-byc-gotowy-we-wrzesniu>> (30.06.2021).

³⁸ On June 11, 2021, an application was submitted by Nord Stream for certification in the ITO (independent transmission operators) model. This is a preferential model that allows a vertically integrated enterprise to maintain ownership of the transmission networks. See: W. Kwinta, *op. cit.*

³⁹ *Ibidem*

⁴⁰ J. Zalewski, *Nord Stream 2 już blisko mety*, 25.08.2021, <<https://www.pb.pl/nord-stream-2-juz-blisko-mety-1125596>> (31.08.2021).

interests⁴¹. So the argument number three of the opponents of NS2 also seems to be a myth, verified in favour of Russia.

Myth #4. The European and American sides can force Russia to continue gas transit through Ukraine at the price of consent to NS2

One of the key elements of the ‘political puzzle’ in the context of NS2 is the question of Ukraine. After 2014, this country became the main opponent of Russia's policy in the area of gas exports and not only. Already before, Russian-Ukrainian relations about gas trade were very tense⁴². However, it was only the conflict and violation of the integrity of Ukraine's borders, in connection with the annexation of Crimea and the war in Donbas, that became a flashpoint in the relations between both countries. This situation prompts both sides to take radical measures and implement the threats that have been repeated over the years.

Ukraine, for its part, practically overnight accomplished an extraordinary thing – it emerged from relatively high dependence on Russian gas supplies, ceasing to buy gas from Gazprom. It became possible thanks to the so-called virtual reverses, which were allowed in the new Ukrainian-Russian transit agreement of 2019. As a result, Ukraine buys Russian gas, not from Russia, but Germany, saving at the same time on its transport⁴³.

This is not the end of the moves, because Ukraine is also an important transit country. The gas pipelines that run through its territory have a capacity of as much as 110 bcm. So far, Gazprom has never used the full capacity of the infrastructure, and at a record low point, in 2014, the transported volume decreased to the level of only 62,2 bcm. By 2019, proceeds from transit fees from Russia accounted for around USD 3 billion, or almost 10% of the Ukrainian GDP⁴⁴. It is worth noting that these were one of the higher rates, especially compared to the transit fees that Gazprom paid for Poland or Belarus at the same time⁴⁵.

⁴¹ I. Trusewicz, *op. cit.*

⁴² So-called ‘turning off the tap’ for Ukraine in 2009. See: J. Malczyk, *8 marca Gazprom zakreści kurki Ukrainie?*, <https://www.money.pl/archiwum/wiadomosci_agencyjne/pap/artykul/8;marca;gazprom;zakreci;kurki;ukrainie,50,0,430386.html> (30.06.2021).

⁴³ M. Marszałkowski, *Ukraina przestawiła się całkowicie na wirtualny rewers gazu*, <<https://biznesalert.pl/ukraina-gaz-wirtualny-rewers-gaz-zapotrzebowanie-gazprom-energetyka/>> (30.06.2021).

⁴⁴ M. Zaniewicz, *Walka na śmierć i życie. Bez tranzytu rosyjskiego gazu Ukraina nie przetrwa?*, <<https://energetyka24.com/walka-na-smierc-i-zycie-bez-tranzytu-rosyjskiego-gazu-ukraina-nie-przetrwa>> (30.06.2021).

⁴⁵ In 2021, fees for 1000 cubic meters sent per 100 km amounted to USD 2,7 in Ukraine, USD 1,75 in Belarus, and USD 1 in Poland. In Western Europe the rates are USD 3,5 and above. See: J. Frączyk, *Miliardy przechodzą Polsce koło nosa. Za tranzyt rosyjskiego gazu*

The fact that the NS2 gas pipelines and those running through Ukraine influence each other may be evidenced, for example, by the fact that as early as three days after the announcement of the CJEU judgment invalidating the EC's decision of 2016, according to which the OPAL gas pipeline could be fully used by Gazprom, 6% increase in the amount of gas pumped through Ukraine was observed⁴⁶. According to the original assumptions, the NS2 gas pipeline was to be ready by the expiry of the transit agreement with Ukraine on December 31, 2019, constituting an important argument in possible negotiations of a new agreement. However, this did not happen due to the sanctions. Russia was forced to negotiate a new transit agreement. Its value is USD 7 billion over 5 years, or approximately USD 1,4 billion annually until 2024, compared to USD 40 billion of the total budget⁴⁷. Although this is a significant amount, its lack, should Russia completely abandon gas transit through Ukraine after 2024, probably will not 'bring this country to its knees'.

The opponents of NS2 pinned great hopes on the decisive reaction of the United States to the planned investment. However, they turned out to be exaggerated. Joe Biden withdrew sanctions against Nord Stream AG even before negotiations with Berlin on this matter. In a joint statement by representatives of the United States and Germany on July 21, 2021, the de facto easing of US policy towards Russia was sealed at the price of improving relations with Germany. A decisive reaction and sanctions were announced, but only in the event of Russia's aggressive behaviour towards Ukraine, but the details of these actions have not been specified. About Ukraine, it was decided to invest, but in renewable energy projects, not gas-fired ones. At the declaratory level, Germany also offered three things: support in negotiating a new gas transit agreement between Russia and Ukraine; ensuring that EU legal regulations will be applied to the German part of the NS2 project; and greater commitment to its part to the Three Seas Initiative⁴⁸.

Thus, the United States has agreed, at the price of waiving sanctions, that it is Germany, which is currently benefiting from gas trade with Ukraine, to be the factor of pressure on Russia to continue gas transit through Ukraine. It

bierzemy "grosze", <<https://businessinsider.com.pl/wiadomosci/tranzyt-rosyjskiego-gazu-ile-gazprom-placi-polsce/cqxbv3n>> (30.06.2021).

⁴⁶ M. Zaniewicz, *O co chodzi z wyrokiem Trybunału Sprawiedliwości UE ws. OPAL?*, <<https://energetyka24.com/o-co-chodzi-z-wyrokiem-trybunalu-sprawiedliwosci-ue-ws-opal-analiza>> (30.06.2021).

⁴⁷ Sz. Kardaś, W. Konończuk, *Temporary stabilisation: Russia-Ukraine gas transit deal*, <<https://www.osw.waw.pl/en/publikacje/osw-commentary/2019-12-31/temporary-stabilisation-russia-ukraine-gas-transit-deal>> (30.06.2021).

⁴⁸ R. Formuszewicz, A. Łoskot-Strachota, S. Matuszak, *Deal between Germany and the US on Nord Stream 2*, <<https://www.osw.waw.pl/en/publikacje/analyses/2021-07-22/deal-between-germany-and-us-nord-stream-2>> (31.08.2021).

would be against the interests of Germany. On the other hand, Germany will certainly fulfil another condition – investing in renewable energy sources in the Ukrainian economy – as this demand is in line with Germany's economic priorities.

The transmission capacity of NS2 is not able to replace the entire capacity of the gas pipelines running through Ukraine, but in conjunction with both TurkStream⁴⁹ lines, it already is. Thus, NS2 is a shorter and cheaper alternative to transit via Ukraine. Here is an argument that is very important from the EU's point of view, although in the mouths of representatives of the Russian concern it seems to be bizarre. It's about the ecological argument. A shorter route means less energy and hence reduced emissions accompanying the transmission⁵⁰. Moreover, the infrastructure in Ukraine is already quite worn out, which increases the risk of failure. Quite unexpectedly, Russia may become an ally of the EU in the fight for a better climate in Europe. It may also continue gas transit through Ukraine, but under much better conditions than before. The last obstacle, in the form of the threat of US sanctions under Biden's administration, was overcome. And the initiative is and will be on the Russian side, thus confirming the debunking of myth number 4.

Myth #5. European energy solidarity is a legal construct, not an abstract idea

And finally, the last – fifth argument, often raised by opponents of the NS2 project. European energy solidarity is not an abstract idea, as Russian representatives used to treat it when implementing gas policy, but a legal construct, the validity of which has been confirmed by a court judgment⁵¹.

The principle of energy solidarity is part of a broader idea which is the European strategic autonomy (ESA). In short, ESA stands for the ability of the EU to react independently to various types of crises and threats, and one of its

⁴⁹ TurkStream (formerly Turkish Stream) - Gazprom's investment in southern Europe parallel to NS2. The first thread was officially opened on January 8, 2020, the second thread is still under construction. The planned total capacity of both lines of the pipeline is 31,5 bcm. See: M. Perzyński, *Turkish Stream tworzy dylemat dla lokalnych rynków gazu*, <<https://biznesalert.pl/osw-turkish-stream-rynki-gazu-europa-energetyka/>> (30.06.2021).

⁵⁰ M. Sommer, *Nord Stream 2. Rosyjski gaz nie pomoże klimatowi*, <<https://serwisy.gazetaprawna.pl/ekologia/artykuly/8086592,nord-stream-2-ue-polityka-klimatyczno-energetyczna.html>> (30.06.2021).

⁵¹ *Court of Justice of the European Union Press Release No 43/21 Luxembourg, 18 March 2021, Advocate General's Opinion in Case C-848/19 P Germany v Poland*, <<https://curia.europa.eu/jcms/upload/docs/application/pdf/2021-03/cp210043en.pdf>> (30.06.2021).

key aspects is energy security⁵². It is not difficult to prove that the NS2 project is in contradiction with the assumptions of the EU energy policy, especially its basic priority, which is the diversification of supply sources and liberalization of the entire sector. However, the impact of NS2 on ESA is not so obvious. Some researchers emphasize the positive role of NS2 in alleviating the growing dependence on the United States. Thus, NS2 may be an alternative not only to gas pipelines running through Ukraine or Poland but also to American liquefied natural gas (LNG)⁵³.

The launch of NS2 will weaken American influence on the European continent. Donald Trump's administration seemed to be aware of the negative consequences of such developments, and therefore actively counteracted the creation of the gas pipeline, imposing further sanctions (see myth #1). In turn, the administration of Joe Biden, as already mentioned above, after negotiations with Germany, decided not to introduce sanctions, accepting that the gas pipeline would be built, and to give priority in negotiations with Gazprom to Germany – a country that is a shareholder of the entire project.

However, the ESA is more than just a rule of thumb. The EU is aware that in the event of any threat, the most powerful weapon it can offer is the unity and solidarity of the entire structure. Initially, it mainly related to security and defence. And NS2 is one of those moments where EU representatives must decide whether the ESA will also apply to more comprehensive foreign policy objectives and the protection of its fundamental interests. In the case of the NS2 project, two conflicting interests compete with each other – German and Polish (and also Ukrainian). Which one is more important? From the perspective of the EU authorities and the United States, cutting the project off and weakening Germany would not be a strategic move, because it is German leadership that guarantees the fundamental values of the EU, and can protect Poland and other countries of Central and Eastern Europe from Russia's attempts⁵⁴. On the other hand, from Germany's perspective, NS2 supports ESA, directing Russian gas towards Europe instead of Asia. Thus, it enables many countries of the continent to renegotiate unfavourable gas contracts based on the take or pay principle. In addition, natural gas from Russia may also be a pillar of European economies' policy to abandon coal⁵⁵.

⁵² This idea appeared at the end of 2013 as a conclusion of the European Council, and then was included in the 2016 EU Global Strategy. See: Ł. Maślanka, *Rozpoznanie walką: autonomia strategiczna UE w polityce Francji*, <https://pism.pl/publikacje/Rozpoznanie_walka_autonomia_strategiczna_UE_w_polityce_Francji> (30.06.2021).

⁵³ A. Akbari, T. M. Moazen, *op. cit.*

⁵⁴ E. Rumer, *Opposition to Nord Stream 2 Makes No Sense for America or Europe*, <<https://carnegieendowment.org/2018/08/12/opposition-to-nord-stream-2-makes-no-sense-for-america-or-europe-pub-77038>> (30.06.2021).

⁵⁵ A. Akbari, T. M. Moazen, *op. cit.*, p.3

Thus, both supporters and opponents of NS2 have valid arguments on their side, and establishing a common EU position on this project seems to be a distant prospect for the time being⁵⁶. That is why, despite the court ruling and the existence of increasingly effective legal acts and institutions, Russia still manages to divide European countries relatively easily. Thus, it refutes myth number 5.

Main conclusions

The work presents the results of analyzes that allowed verification and debunking 5 myths related to the implementation of the NS2 project.

The capacity of the pipeline is not too high, even in the context of forecasts of declining demand for gas in Europe, because it can take over the transmission from other, more worn-out gas pipelines, and ultimately also transport other raw materials, i.e. hydrogen. The new gas directive as adopted does not provide EU institutions with control over the use of the gas pipeline, and the risk of its monopoly by Gazprom remains high. European countries, and especially those co-financing NS2, may want to buy gas from Russia as part of their allocations to use the infrastructure of the new gas pipeline, which will run counter to plans to become independent from Russia and diversify gas supplies to Europe. The possibility of putting pressure on Russia to maintain transit through Ukraine in the long term seems to be exhausted, hence the efforts to redirect the negotiations to other paths, i.e. investments in renewable energy sources in Ukraine. Finally, energy solidarity in the EU and European strategic autonomy are rules that are only just gaining legal validation and, in practice, sometimes losing out to economic interests.

Research confirms that even the most perfect legal rules and transparent procedures will not function properly if there are no goodwill, trust and partnership relations between all interested parties. It is this fact that Russia is trying to take advantage of, striving with full determination not only to finalize the investment but also to use it further according to its vision, contrary to the idea of a liberal EU market. Given the unhurried decisions of the European side, adopting the relaxed versions of the proposed legal acts, the Russian side has no difficulty in finding new legal loopholes that allow it to bypass the rules of the energy market and the laws in the EU, which lag behind the everyday practice. This is happening with the tacit support of the large countries of the community, the partners of the project. This is short-sighted thinking because only taking control over the functioning of the NS2 gas pipeline and forcing the

⁵⁶ J. Wettengel, *Gas pipeline Nord Stream 2 links Germany to Russia, but splits Europe*, <<https://www.cleanenergywire.org/factsheets/gas-pipeline-nord-stream-2-links-germany-russia-splits-europe>> (31.08.2021).

application of liberal market rules within it will allow the EU to achieve two strategic goals at the same time. The first is to oppose the growing influence of the United States, exporting LNG to Europe, and the second is to put an effective dam on the plans of Russian domination in Europe and the use of monopolistic practices by Gazprom. Success on both fronts will allow the EU to build and strengthen ESA.

The lack of unanimity and transparency of the EU as regards the approach to cooperation with Russia on gas imports also translates into the attitude towards supporting the idea of further gas transit through Ukraine. Despite numerous declarations of support of a political nature, it is economically unprofitable e.g. for Germany, which is systematically building its position as a gas hub for the entire region of Europe. If additionally, Russia argues that transit through Ukraine is more expensive, the infrastructure is very outdated and the process causes increased CO₂ emissions to the atmosphere, it will be difficult for the European side to justify its further support for the continuation of this direction of gas supplies.

The passing of this stage in the history of Russian gas supplies to Europe seems to be understood by all sides, including Ukraine itself; which is intensively preparing to compensate for the effects of a complete cessation of the transit of Russian gas after 2024⁵⁷, and Germany, which is effectively directing the subject of international negotiations on Ukrainian transit to the area of renewable energy development in this country. This is very beneficial from the German perspective, but it may also prove to be a better alternative for Ukraine than the struggle to return to the position of a transit country and the earlier status quo. In this context, it is worth it for other countries in the region, including Poland, to join the initiative to develop renewable energy technologies in Ukraine.

Finally, there is also the issue of civilization progress. The development of technology and the potential for cooperation in the field of Russian hydrogen exports to Europe are also favourable factors that could extend the Russian divide and rule policy about the EU. All the more necessary is the cohesion and solidarity of the members of the European community and the tightening of intra-EU law. The question is how quickly Europe, torn by numerous interests: economic (Russian gas is still cheaper and European companies can lobby effectively); legal (effective application of directives); political (various, bilateral relations between EU countries and Russia); ecological (NS2 is more ecological than transit through Ukraine, although it violates the unique environment of the Baltic flora and fauna); and geopolitical (at the same time opposing the influence of the United States and Russia) – will be finally able to

⁵⁷ M. Marszałkowski, *Ukraina przygotowuje się na przerwę przesyłu gazu z Rosji po 2025 roku*, <<https://biznesalert.pl/ukraina-rosja-gazprom-ogtsu-naftogaz-gaz-energetyka/>> (30.06.2021).

go on the offensive and dictate the rules of strategic raw material trade on its territory. This issue should be the subject of further research.

Additional conclusions for Poland and other countries actively opposing NS2

The countries that may lose the most by opening a new connection to transport gas from Russia to Europe have been protesting against the project itself from the outset. And although it was not possible to stop it, its implementation has certainly slowed down, and the EU institutions, under pressure from, inter alia, the Polish side⁵⁸, is more and more efficient in ensuring transparency and the principles of liberal gas trade in the EU.

Completion of the construction of the gas pipeline opens up new fields for supervision and control by EU member states. It is about both the process of certification of the gas pipeline and its subsequent operation, including in particular the separation of the roles of the operator and distributor and fair access to the infrastructure for third parties. EU mechanisms are maybe not the fastest but seem to be becoming more effective over time. Therefore, not only Poland or the Baltic countries, but also countries such as Slovakia, the Czech Republic and Denmark, are recommended to continue the construction of infrastructure for gas purchases from alternative suppliers⁵⁹, as well as to intensify the current activities in the field of control and demand to comply with EU law and implementation of the arrangements. as part of the European Green Deal.

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⁵⁸ J. Libereiro, S. Grobe, *Nord Stream 2: MEPs and US pressure Germany to stop Russia pipeline*, <<https://www.euronews.com/2021/01/27/nord-stream-2-eu-parliament-and-biden-administration-pressure-germany-to-stop-russia-pipel>> (30.06.2021).

⁵⁹ See e.g. Baltic Pipe, LNG terminal in Świnoujście, Floating Storage and Regasification Unit in Zatoka Gdanska, new system connections with Ukraine, the Czech Republic and Slovakia More: B. Sawicki, *Inwestycje gazowe idą naprzód. Połączenie z Ukrainą i Czechami pozostaje w tyle*, <<https://biznesalert.pl/inwestycje-gazowe-w-polsce-gazociagi-gaz-energetyka/>> (30.06.2021).

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WATER SECURITY IN THE MIDDLE EAST ON THE EXAMPLE OF IRAQI KURDISTAN

Abstract:

Water security in the Middle East on the example of Iraqi Kurdistan Water is an important geopolitical resource on which the demand is growing daily. Due to the arid and semi-arid climate, the Middle East region is experiencing severe water shortages, which is why water is considered a resource of geopolitical importance. The states of the Middle East region regards water resources through the prism of national security. Iraq is facing a serious threat due to the ‘South-eastern Anatolia Project’ launched in Turkey. The issue of water security is also a significant challenge for Iraqi Kurdistan, whose regional government may use water as a political weapon against official Baghdad, further exacerbating the already strained relationship between the two sides and creating another source of tension in the region. The article will discuss the problem of annual resources in the Middle East and the challenges associated with it. The issues of the South-eastern Anatolia Project, arid and semi-arid climate, and their impact on the redistribution of water resources in the face of climate change as a cause for new conflicts will be discussed.

Keywords:

Water Security, Iraqi Kurdistan, Kurdistan Regional Government, South-eastern Anatolia Project, Middle East

Introduction

Water is a resource of geopolitical importance, on which the demand in the world is growing gradually. Water consumption is rising amid global warming,

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rapid population growth, and industrial growth, making states think big. About 97% of the available water is saline oceanic water and 77% of the remainder is stored as ice, and 22% as groundwater and soil moisture, while 0.35% is in lakes and marshes. The water within the atmosphere is 0.04%, then there are only 0.01% freshwater supplies in rivers which provide 80% for human beings on the earth and, therefore, rivers carry 0.003% of all the water available on earth².

Due to the arid and semi-arid climate in the Middle East region, there is very little water. The water resources in the region are unequally redistributed. Turkey, Syria, and the Lebanese coastline are relatively rich in water resources. In other countries, water is a serious shortage.

Water played a crucial role for the peoples of the Middle East, as evidenced by the historical artefacts of ancient civilizations formed in Mesopotamia. Ancient water irrigation systems are still admired today. After World War I, the political map of the modern Middle East was formed and the foundations were laid. After the collapse of the Ottoman Empire, independent entities emerged in its Arab dominions that were briefly subject to the mandate system. Ownership and control of water resources soon became a vital interest for the newly created states after gaining independence. The construction of dams on the Euphrates and Tigris rivers has laid the groundwork for a qualitatively new “water war” between Turkey, Syria, and Iraq in the Middle East.

According to the standard definition of experts and United Nations, water security is: „The capacity of a population to safeguard sustainable access to adequate quantities of and acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability”³. Based on the research topic in the definition above, political stability and socio-economic development are essential for us. Consequently, these aspects will be meant when water security is mentioned in the article.

The article aims to study geopolitical aspects of water security through an example of Iraqi Kurdistan and research the regulatory mechanisms of conflicts caused by water. The article must answer the following questions: What impact does South-eastern Anatolia Project have on the relationship between Turkey, Syria and Iraq and on general political stability in the Middle East? What effect does the factor of water have on relations between the central government of

² N. Al-Ansari, *Hydro Geopolitics of the Tigris and Euphrates*, “Recent Researches in Earth and Environmental Sciences”, vol. 1/2019, pp. 35-70.

³ *UN-Water Brief Defines Water Security*, SDG Knowledge Hub, <<https://sdg.iisd.org/news/un-water-brief-defines-water-security/>> (20.06.2021).

Iraq and the regional government of Kurdistan? To answer the questions described above descriptive, historical and political analysis research methodology is applied in the paper. The issue is analysed through the lenses of Political Realism and Relativistic-Quantum Noology.

Geographical description of the Euphrates-Tigris and the South-eastern Anatolia Project (GAP)

The Euphrates and Tigris rivers, which originate in Turkey, are important water resources for the states of the region (Turkey, Syria, and Iraq). The Tigris River originates in Turkey and flows through 20% (400 km) of the river, 2% (40 km) into Syria, and the remaining 78% into Iraq. The second important river is the Euphrates, which is 2786 km long and originates from Turkey and joins the Tigris River in Iraq to form a single river called the Shatt al-Arab (195 km).

Iraq first started building dams on the Euphrates River in 1914, and a second dam in the 1950s. At the same time, Turkey and Syria began working on dam projects, although neither built a dam until the 1960s. In 1966, Syria laid the foundation for the construction of the Tabqa Dam on the Euphrates, which was followed by a similar move by Turkey, and the construction of the Keban Dam on the Euphrates began.

The construction of dams on the Euphrates and Tigris has laid the groundwork for a new kind of conflict in the region between Iraq, Syria, and Turkey. For all three countries, these two rivers are a vital resource, both for their economies and their future development. As it was already mentioned, the constructed dams soon sparked an international conflict between the sides. The construction of the Keban Dam by Turkey on the Euphrates River has caused serious concern on the part of Syria, while the construction of the Tabqa Dam on the Euphrates River by Syria has caused serious outrage in Iraq, that escalated military mobilizations twice (1974-1975). Mobilized troops by the sides on the Syrian-Iraqi border only retreated after the Soviet Union and Saudi Arabia mediated to defuse the conflict between the sides. Aforementioned crisis ended with an agreement under which Iraq received 58% of the Euphrates River and Syria the remaining 42%. Such an agreement partly eased tensions between the sides, although a new crisis hotspot was soon created in the region after Turkey began implementing the GAP project.

The GAP project started in 1977 and it is considered to be the grandest and expensive project in the history of Turkey. It is noteworthy that the idea of carrying out such a project on the Euphrates and Tigris still existed during the Turkish period, although for some objective and subjective reasons it could not be implemented. The GAP project covers 9 provinces of Turkey (74.000 sq. km). The total cost of the project is \$ 32 billion. As already mentioned, the

project is grand and large-scale, as after its completion there will be 90 dams and 60 power plants, which is 28% of Turkey's total hydro resources. Turkey considers GAP to be a national project of the country to strengthen the capacity of its hydropower plants and the agrarian sector of the country. It is estimated that after the completion of the GAP, 30 billion kilowatts of electricity will be available and up to 2 million hectares of water will be provided, which in itself will lead to serious intensify and growth of the agro-industrial sector. Based on 1994 figures, the GAP authorities predict that the project will eventually increase vegetable production by 40%, cotton by 300%, barley by 40%, and wheat by 100%. Around the Ataturk Dam, the region has been transformed into one of the most important centres of cotton production in Turkey⁴.

While the GAP project is important for Turkey's economic development, it also poses a threat to Syria-Iraq, who rightly believe that dams built on the Euphrates and Tigris rivers in Turkey will significantly reduce the level of these rivers in their territory. In addition to reducing river flows, the sides argue that large-scale construction will cause serious environmental pollution in the Euphrates-Tigris basin. The pursuit of such a water policy by Turkey has other political purposes, and it primarily serves the desire to gain dominance, hegemony in the region, and gain control of neighbouring countries. Water control can be seen as a political tool as a mechanism for exerting pressure on the sides and increasing political pressure. The GAP project, which has an external economic aspect, also has internal political goals. The Turkish government aims to resolve the Kurdish issue through the GAP project in south-eastern Turkey, as the estimated 15 million Kurds living in Turkey are a serious problem for Ankara.

In addition to reducing the amount of water in the Euphrates and Tigris, there is also a climatic factor in the large-scale project of Turkey, which is a serious challenge not only for the region but also for the world. Due to the disproportion between the annual rainfall (150-300 millimetres) and evaporation (1,500-2,500 millimetres), more than 90% of Iraq's land can become desert, as 100 square kilometres of fertile land is lost every year due to salinization. Fertile Crescent, often known as the cradle of civilizations, is no longer fertile.

International status and theoretical approaches of the Tigris and Euphrates

After the collapse of the Ottoman Empire, water soon became an important issue for the newly created states in the Middle East, which led to the signing of treaties between the sides on the exploitation of the Euphrates and Tigris. The

⁴ K. Yildiz, *The Kurds in Syria*, London, 2005, pp. 65-76.

1923 Lausanne Agreement between Turkey and Iraq on the waters of the Euphrates was signed, which was followed in 1946 by the signing of another treaty of good neighbourliness between the sides. Lausanne agreement Turkey should have consulted with Iraq before it promised to build anything on the river. Under the 1946 Good Neighbour Agreement, the Turkish side undertook to warn Iraq of plans for the river. Turkish-Iraqi relations have been strained since the Turkish side intensified work on the GAP project, but the crisis between the two countries soon eased due to the start of the Iran-Iraq war. Official Baghdad made concessions and opted for a policy of manoeuvring with Turkey because Turkey remained an important trading partner for it during the war. In addition, the Kirkuk-Ceyhan Oil Pipeline passed through Turkey. Given the current situation, it would be unprofitable for Iraq to deepen the crisis with the Turkish side. Such a given situation and interdependence even proved to be beneficial for both sides for that period. Following the end of the Iran-Iraq war, official Baghdad resumed its criticism of the GAP project and called on Turkey to work out a tripartite agreement on the redistribution of water.

The legal dispute between the Turkish and Arab sides of the Tigris and Euphrates is viewed differently by the sides. Syria and Iraq consider the Euphrates and Tigris rivers to be international rivers, while the Turkish side rejects their view of the international status of these two rivers and appeals for common and rational disposal across the Tigris and Euphrates. Moreover, Turkey believes that it even has the right to use these rivers indefinitely⁵.

According to the general principles of international law, there are several theories regarding the issue of water:

- absolute territorial sovereignty often referred to as the Harmon Doctrine, suggests that the upstream state has an indefinite advantage over its transboundary water resources within its national borders;
- absolute territorial integrity is preferred to the downstream state and the upstream state prohibits any project that may result in a reduction in water flow in the downstream state;
- limited territorial sovereignty is the most widespread principle, according to which downstream states have equal sovereign rights and upstream states must respect downstream rights over water. This principle also promotes the rational and equitable disposal of water resources;
- community of riparian states implies improper use of water resources and lack of political boundaries⁶.

⁵ M. El-Fadel, Y. El Sayegh, A. Abou Ibrahim, D. Jamali, K. El-Fadl, *The Euphrates-Tigris Basin: A case study in surface water conflict resolution*, "Journal of Natural Resources and Life Sciences Education", 1(31)/2002, pp. 99-110.

⁶ *Ibidem*.

According to the existing theories, it is easy to guess which state of the region which one prefers. Such an approach is dictated by their national interests. Turkey, which originates in the Tigris and Euphrates, of course, justifies its projects on the principle of absolute territorial sovereignty and does not take into account the rights or interests of the downstream states.

Syria supports the absolute territorial integrity approach because the dams built by Turkey on the Euphrates and Tigris are seriously reducing the amount of water in these rivers flowing into Syrian territory. Iraq, on whose territory the Euphrates and Tigris expeditions finally end, is in the most unprofitable position, as the flooding of rivers by Turkey on the one hand and by Syria, on the other hand, will have a catastrophic impact on the Euphrates and Tigris rivers in Iraq. Iraq is claiming its historical right to these rivers and is in favour of redistribution of the Tigris and Euphrates under the principle of limited territorial sovereignty.

Such an approach by the states and the lack of consensus between the sides underscores once again the fact that the principles and norms of international law are virtually weak. The anarchic nature of the international system and the instinct of self-preservation of the state in this anarchic system once again reinforces the realistic school thesis about the egotistic actions of states. Such data lay the groundwork for a crisis that can sometimes escalate into large and endless conflicts.

There are many reasons to be optimistic. Since 1948, there have been 37 incidents of acute conflict over water, while approximately 295 international water agreements were negotiated and signed in the same period⁷. These statistics further reinforce the inaction of the agreements reached under international law and push the world to look for new optimal ways.

It is self-evident that with existing paradigms and theories issues cannot be resolved, because they are unable to see the whole picture. Kurd's water security must be examined with other issues of Kurds. Quantum-Relativistic Noology, which is a novel method of approach to international relationships proves that realism, idealism, and other international relations theories examine global politics in the context of conflicts and competitions, where differences are only defining the combative individuals. According to realism, combative subjects are nations, but pluralism implies more actors and not only a nation, these actors are international corporations, non-government organizations, religious and ethnic groups, etc. According to structuralism: economical classes developed global economic system centres and backward peripheries. Resulting from the existing task of the international relation study field it's not reaching

⁷ *Transboundary Waters*, UN Water, <<https://www.unwater.org/water-facts/transboundary-waters/>> (20.06.2021).

out from the attempts of describing the strategies of plundering the vital resources.

It is easy to notice that the source of modern world problems is plundering the vital resources if we observe International political processes, each nation is dictated with this idea and tries to eliminate one another, and also they try to enforce the system of their values. According to Quantum-Relativistic Noology, the strategy of plundering the vital resources is characterized by timed optimization and requires putting the new paradigm in motion in international politics, “because mono-global paradigms cannot fixate the political order between nations within the influence of dominant nation's functional task of an international political system forming and stabilization”⁸.

An effective political program is founded based on the science of Quantum-Relativistic Noology – ‘Doctrine of Optimalism’ which implies establishing the optimal relations between the nations with consideration of their characteristics⁹. The 4 types of classes of nations can be described and characterized in the existing international system in the following way.

- the supreme representative body of the nations of the class of mania of form (Greeks, Germans, Spaniards, Italians, Czechs, Poles, Ukrainians, Jews, Arabs, Turks, Iranians, Japanese, Koreans, Chinese, Vietnamese, Indonesians...) corresponds to the legislative function; one of the major principles of the optimal structure is allocation to the nations of this qualitative type of territories in exclusive use (intolerance to another is the integral characteristic of the nations of this qualitative type, neglecting of this fact is a condition creating the danger of global destabilization)¹⁰;

- the supreme representative body of the nations of the class of mania of overcoming (Russians, Serbs, Mongols, Kurds-Ezids...) corresponds to the function of the international buffer force, including protection of above mentioned exclusive territories that means the creation of a military-industrial complex and a military machine of global disposition¹¹;

- the supreme representative body of the nations of the class of mania of relaxation (Americans, Englishmen, Frenchmen, Dutchmen, Indians...) corresponds to the international court, regulation of the international market and external contacts of civilization, including the function of

⁸ E. Khvichia, *Informational Civilization in the Globalized World and Georgia*, PhD dissertation, 22.06.2012, Georgian Technical University, p. 50, <<http://dspace.nplg.gov.ge/bitstream/1234/171161/1/Disertacia.pdf>> (22.06.2021).

⁹ *Ibidem*.

¹⁰ E. Khvichia, *Optimalism (National-Globalism) – Imperative Paradigm of Globalism. (Programme of Optimization of Global Political System)*, <<http://noosphereinstitute-georgia.blogspot.com/p/optimalism-national-globalism.html>> (10.06.2021).

¹¹ *Ibidem*.

defence of civilization from an external threat that means also a military institute of the corresponding function which at the same time will be the main parity factor with the military institutions of the nations of the class of mania of overcoming¹²;

- the supreme representative body of the nations of the class of mania of ruling (Georgians, Irish, Scots, Corsicans, Sicilians, Basques...) corresponds to the function of representation of civilization before the nations-members of the civilization, that means supervision of factors of unobstructed functioning of the ‘Global Centre’ (including military parity) and monitoring of strategic prospecting researches in scientific, technological and other spheres commercially unprofitable at the given stage¹³.

The Struggle Between Baghdad and Erbil and Water security of Iraqi Kurdistan

Results of the first world war and with forming the new world order founded modern near-east political map. Although because of some subjective and objective reasons Kurds did not get the opportunity to develop an independent country and the majority of Kurds are divided into 4 countries in the region (Turkey, Syria, Iraq, Iran). The habited locations by Kurds are called Kurdistan and as we pointed out before they are apportioned in 4 countries. The battle of Kurds for their political, social, economic, and cultural rights continues to this day in different countries of the region, although we must point out that in Iraq Kurds are exceptional with efficiency and particularism. The Kurdistan of north Iraq is autonomous since 1974, and the positions and political rights of Kurds have been strengthened since the end of Saddam Hussein's regime.

Iraqi Kurdistan is a mountainy region of the north of Iraq, its land is 40 thousand kilometres squared. From the north, it is adjoined with Turkey, northeast – Iran, and the western border is with the Arabic Republic of Syria. The population of Iraq's Kurdistan is 4.8 Million. Iraq's northern Kurdistan which represents the south part of the whole Kurdistan is noticeably different from other parts of Kurdistan. Iraqi Kurdistan is rich in natural resources such as gas and oil which adds financial and economic advantage and allows it to operate independently. From a water resource perspective region's important rivers is Tigris – the source of flow starts from Turkish Kurdistan and the Great Zab and the Little Zab – which take the source of flow from Zagros mountains at Iran's territory. Kurdistan's branches of agriculture and other directions are

¹² *Ibidem.*

¹³ *Ibidem.*

strictly dependent on these rivers. Other important water resources of the region are Lake Dukan, Darbandikhan Lake, and Duhok Lake.

Water volume has been reduced on Iraq's territory by Turkey and their gigantic dam constructions, and it threatened the security of water resources. Euphrates and Tigris flow has been reduced by 30% from 1980 and this percentage will increase to 50% by the year 2030 according to Iraq's government¹⁴. The populational increase in the last period increased the quantity of water usage in Kurdistan of Iraq. Because of all these Kurdistan of Iraq decided to resolve the issue independently from Baghdad. In 2014 Kurdistan of Iraq initiated the plan to reduce the risks with existing threats, and according to the initiation, there will be additional 245 water dams in the region.

17 Dams in the region have been lacking water for a while now. Kurdistan of northern Iraq is influenced by Iran as well in water reduction matters because Lesser Zab and Sirwan from Iran's side realized projects significantly reduce the water flow in the region. In 2019 realized projects by Iran on Lesser Zab and Sirwan significantly influenced Kurdistan of Iraq, so it leads to limitations of production of electro-energy and potable water. Aside from this serious issues were made to the region's irrigational system, which conveyed negatively on the region's agriculture.

The levelled initiation by the government of Kurdistan is a serious threat for official Baghdad because they announce that built dams in Kurdistan's region will further reduce the water volume on the remaining territory of Iraq. The relationship between Baghdad and Erbil is tense for years and this kind of action will aggravate the situation between the two sides and the relationship will be more intense.

The water security matter for Kurds can be discussed on three different levels. On the local level Implementing this initiation serves the well-being of the social and economic. Regional level the water security for Iraq has a political shade and we can view it as an instrument to keep up the pressure against official Baghdad. Kurdish side of this initiation offers to resolve the water security issue on one hand but on another, it tries to acquire more independence from Baghdad. After fully implementing The Kurdistan of Iraq's initiation results can be lethal for Iraq and the country will have to face a serious water crisis. On an international level, the Kurdish water security matter goes beyond the attention, Because the empowered Kurdistan is as threatening for Turkey and Iran as it is for Syria-Iraq.

As it was mentioned before, reviewing Kurdish water security is not expedient and it needs to be reviewed as a Kurdish problematic section. It is a

¹⁴ P.-J., Dockx, *Water Scarcity in Iraq: From Inter-Tribal Conflict to international Disputes*, "Institute of Peace and Conflict Studies", Report 203/2019, pp. 7-28.

fact that in the region Kurdish country cannot be developed yet and this will continue until the Doctrine of Optimalism will come to action. As it was mentioned the if the Doctrine of Optimalism is initiated nations will have their psychic type and considering the psychic type nations will have their role and function in the international system which the author of Quantum-Relative Noology Emzar Khvichia calls this 'Global Development Centre'. Although before implementing the Doctrine of Optimalism it is necessary to form a confederation of Turkey-Syria-Iraq where Kurdish national schools will be cast and Kurdish people will be able to self-identify and develop themselves as a nation. Meanwhile, Kurds should define their psychic type and should determine it because that way search for their role and function in 'Global Development Centre' will be simplified. The mentioned confederation is a necessary prerequisite for them to be able to create a Kurdish country in the future. The fact that creating the Kurdish country should be in Russia's interests should be marked Because both of the nations carry the supreme representative body of the nations of the class of mania of overcoming. For Russia, one nation that carries the class of mania is an additional resource for the class of mania of overcoming and the role and function that they have to fulfil effectively with the result of the doctrine of Optimalism in the founded new world order.

Conclusion

In conclusion, it can be said that the factor of water plays an essential role in forming regional politics in the Middle East. It is clear that Syria and Turkey see water security as an integral part of national security because water significantly impacts the country's socio-economic development. The latter notion was observed in an example of the „South-Eastern Anatolia Project”.

The water security issues are complex in the case of Iraq's Kurdistan as well, which further strains relations between Baghdad and Erbil. In the region, Kurd's water security matter aggravates correspondingly to climate change and population increase. According to Quantum-Relativistic Noology Kurds and Iraqi Arabs are different psychic types of nations. Consequently, future relations will be tenser and it all will result in water security aggravation. Kurd's water security and generally, the solution of Kurd's issue can only be possible if the Doctrine of Optimalism is put to action, which can only be achieved with an effort of strong international actors. Otherwise, this issue will be stretched in time without any feasible result.

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EU CYBER SECURITY STRATEGY AND ECONOMIC THREATS

Abstract:

Cyber-attacks have become one of the major problems in the modern world. Cyber-attacks can cause immeasurable damages to a company. They can cause tangible damages such as stopping services; they can ruin the public's trust in a company, and they can lead to leaks of important information that may affect corporate survival. For example, the EU cyber security market is estimated at 20.1 billion euros, which meets the established norms. However, the situation is being exploited by cyber-spies, hackers, posing a threat through various fraudulent and cyber-attacks, contributing to the collapse of the world economy. They also pose a great threat to the economies of different countries. Large European companies are more concerned with cybersecurity risks than the rest of the world. The rapid development of new technologies has shown that traditional approaches to cybersecurity are insufficient. The Council of the European Union announced today that it has officially adopted a new cybersecurity strategy. The strategy, which looks ahead to the next decade, was presented to the council in December 2020 by the European Commission and the high representative for foreign affairs. It contains a framework for how to defend businesses, organizations, and EU citizens from cyber-attacks and promote secure information systems. The strategy also outlines plans to make international cyberspace 'open, free and secure', according to the council. Cybersecurity as an economic means enables the creation of a single digital market if cybersecurity risks are minimized. The paper discusses the EU cyber security strategy and policy, as well as the challenges it faces. The role of new

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technologies in EU development and security. Significant attention is focused on economic issues and how they affect the cyber security strategies of EU member states.

Keywords:

Cyber Security, EU, Russia, China, G5, NATO, Economic Security.

Introduction

The Internet and technological advances have transcended physical boundaries and changed the world. Global giant networks, known as cyberspace, are extremely complex systems. It is available to everyone and it is often difficult to determine where a cyber-attack will take place, when it will take place, or what the capacity will be. There are a lot of uncontrolled spaces on the Internet and we have a high resource of opportunities in social, economic, political or other areas. Improvements in technology have also become a major cause of lawlessness, conflict and geopolitical controversy. Before we move on to the main issue, directly to the EU positions, to the economic situation, we must first clarify the small considerations related to cyber, which should not be confused with each other. The word ‘cyber’ is used today in a combination of many directions, for example, cyber security, cyber defence, cyber-attack, cyber deterrence, etc. Even the words associated with cyber have many definitions and interpretations. Although cyber security and cyber defence are often used in the same context, these are two different issues. Cyber security includes information and communication security (IT platforms required for operational technologies and digital assets). Cyber defence is a broader concept and includes cyber security as one of the sub-items; it includes threat analysis and defence strategies. For example, threats against citizens, institutions and governments. As for cyber-attacks, these are targeted activities aimed at disrupting or destroying computer systems and networks. We also have the term ‘cyber deterrence’, which means to take measures: to avoid a potential attack with strong technological defence systems, sanctions mechanisms and cyber diplomacy.

General aspects of cybersecurity in modern international politics

The EU, together with NATO, has recognized that cyber security is critical to prosperity as cyberspace becomes a growing, sought after, geopolitically necessary subject. In economic activity, as in all other areas, cyberspace is an important resource, especially in the face of a global pandemic. Here we must take into account the important event that has been going on around the world for

almost two years – a biological virus that has taken the cyber world to a much higher level and led to the transition of various institutions to a fully virtual world. Hybrid jobs have also emerged here and people have been given more opportunities to work from one end of the earth to the other. This has happened in diplomatic relations as well as in various international or local conferences. Online meetings are held between the main figures of the country and many important issues are resolved remotely – economic, political or conflict.

The coronavirus pandemic has impacted cybersecurity in several ways. The challenges range from the infrastructure of the internet itself to the spread of disinformation online. The challenges are abundant and are related to: (a) infrastructural limits, (b) the increase in cybercriminal activity (d) the growth of surveillance and espionage, and (d) the spread of disinformation online. Therefore, despite the marginal attention paid to it during the first stages of the outbreak, cybersecurity is emerging as an essential tool to cope with society's new demands³.

The coronavirus pandemic has created new challenges for states, international organizations and businesses as they adapt to an operating model in which working from home has become the 'new normal'. Companies are accelerating their digital transformation, and cybersecurity is now a major concern⁴.

Public attitudes towards the Internet have been growing over the years, as well as the number of cyber threats and the sophistication of cyber-attacks. Experts estimate that 125 billion devices will be connected to the Internet by 2030, of which 90% will be people over the age of six⁵.

The current situation in cyberspace is becoming increasingly worrying, because according to research conducted by security analysts: large countries are building their programs on cyber-warfare capabilities. There are already serious speculations that cyber-war and related activities will sooner or later become more active and states will have to deal with it seriously. Accordingly, states, regional and international organizations are adopting and implementing new cyber security strategies, taking into account from what threats and challenges they will have to protect their cyberspace.

Cyber touches any part of society (everything), and from that 'everything' she identifies and recommends focusing on five areas in which cyber warfare impacts society:

- Elections;

³ B. Toso de Alcântara, *The coronavirus pandemic and its impact on cybersecurity*, <<https://www.hiig.de/en/the-coronavirus-pandemic-and-its-impact-on-cybersecurity/>> (30.06.2021).

⁴ C. Nabe, *Impact of COVID-19 on Cybersecurity*, <<https://www2.deloitte.com/ch/en/pages/risk/articles/impact-covid-cybersecurity.html>> (22.06.2021)

⁵ IHS Markit, *The Internet of Things: a movement, not a market*, 2017, pp. 2-8, <https://cdn.ihs.com/www/pdf/IoT_ebook.pdf> (30.06.2021).

- Military secrets;
- Damage to infrastructure;
- Political and corporate espionage;
- Polluting information spaces.

Cyberattacks by state and non-state ‘foreign actors’ including state-sponsored actors, against democratic institutions, critical infrastructure and other governmental, military, economic, academic, social and corporate systems of both EU and the NATO Member States have noticeably multiplied in the past few years, and have become more sophisticated, more destructive, more expensive and often indiscriminate⁶.

Also worth noting are the timely and correct policies of different countries in matters of cyber security, of which Estonia and Finland are good examples with other EU member states. The usage of cyber-attacks in an armed conflict originates from the 2008 Russia-Georgia war. A mass cyber-attack undertaken parallel to ongoing military operations is the first precedent of the usage of cyberspace in armed conflicts. The 2007-2008 DDos attacks undertaken against Estonia and Lithuania were punitive operations and represented a sort of a political message, the aim of which was to incite civil unrest and mass panic, yet were not attempts of implementing any kind of military tasks or providing informational support to military actions⁷.

Estonia attaches great importance to the protection of its cyberspace and focuses on the security of information systems. The recommendation measures are civil and are based on legal regulations, training and cooperation. And, the cyber security strategy was adopted by Finland in 2008 and it is based on the understanding of cyber security as an economic problem that is closely linked to the development of the country’s information systems and society.

The 2008 Russia-Georgia war showed the whole world how necessary and important it is to protect cyberspace and develop national cyber security strategies. During the war, the Russian Federation carried out targeted and massive cyber-attacks against Georgia, in parallel with the ground, air and naval attacks. These cyber-attacks have shown that protecting cyberspace is as important to national security as protecting land, air and sea spaces.

Unlike conventional combat, which uses physical force and combat equipment, cyber-warfare is a more sophisticated tool in which a task performed at a strategic level can cause large losses and inflict colossal damage on an opponent. Much of modern networking is based on the Internet and its computer systems, which involve the banking, healthcare, energy and other vital sectors,

⁶ P. Poptchev, *NATO-EU Cooperation in Cybersecurity and Cyber Defence Offers Unrivalled Advantages*, “Information & Security: An International Journal”, Volume 45, (2020), p. 38.

⁷ A. Gotsiridze, *The Cyber Dimension of the 2008 Russia-Georgia War*, <<https://www.gfsis.org/blog/view/970>> (4.04.2021).

and with this in mind, a targeted attack on critical infrastructure facilities could be catastrophic. The most unprotected and vulnerable sectors today are:

- Banking sector and other financial institutions;
- Stock exchanges;
- Nuclear power plants;
- Water supply and treatment systems⁸.

Risk management is more difficult as a result. Interdependencies in critical infrastructure have multiplied to the extent that it is difficult, if not impossible, to define defensive perimeters. Such a concept has little meaning when connectivity is valued above security. Broad sectors such as food, water and transport are labelled ‘critical’, leaving ambiguity as to what needs to be prioritized within these sectors. Risk assessments are often conducted with only vague metrics for threats, vulnerabilities or potential impacts. This requires scrutiny for countries that are dependent on complex, interdependent global networks – in short, for nearly every country around the world⁹.

There are some differences in modern cybersecurity: both in cyber-attacks between states and in cyber-attacks by private hackers. One clear example is the cyber-attack on pipelines in the U.S. The Colonial Pipeline Company reported on May 7, 2021, that it was the victim of a ‘cybersecurity attack’ that ‘involves ransomware’, forcing the company to take some systems offline and disabling the pipeline. The Georgia-based company operates the largest petroleum pipeline in the United States, carrying 2.5 million barrels a day of gasoline, diesel, heating oil, and jet fuel on its 5,500-mile route from Texas to New Jersey¹⁰. This fact shows that we can easily see how significant the threat of cyber-attacks is. And also, how many threats emanate from cyberspace.

EU and NATO Cyber Security Environment and Existing Challenges and Economic Factors

Countries in the world are actively developing in terms of cyber capabilities, in the 21st Century cyberweapons have become a determinant of geopolitical prosperity and status. Today, the global value of cybercrime is 530 billion euros¹¹. Daily attacks are on the rise, causing huge financial losses. Protecting oneself from large-scale attacks goes beyond the defence

⁸ V. Svanadze, A. Gotsiridze, *Cyber Defence. The main players in cyberspace. Cyber Security Policy, Strategy and Challenges*, Tbilisi 2015, pp. 13-14.

⁹ D. Clemente, *Cyber Security and Global Interdependence: What Is Critical?*, Chatham House, February 2013, p. 1.

¹⁰ S. Morrison, *How a major oil pipeline got held for ransom*, <<https://www.vox.com/recode/22428774/ransomware-pipeline-colonial-darkside-gas-prices>> (20.06.2021).

¹¹ European Parliament, *Cyber: How big is the threat?*, p. 1, <[https://www.europarl.europa.eu/RegData/etudes/ATAG/2019/637980/EPRS_ATA\(2019\)637980_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2019/637980/EPRS_ATA(2019)637980_EN.pdf)> (8.04.2021).

mechanisms of governments. In 2017, EU President Jean-Claude Juncker said that cyber-attacks pose a greater threat to democracies and the economy than weapons and tanks¹².

There is no agreement on the definition of cyber security at the international level. Definitions of cyber security, cyberspace, cybercrime, and related key terms may differ significantly from country to country. Each country's approach to developing a cyber-security strategy also differs. Although the importance of international cooperation is recognized by all countries, the lack of common key terms and a common so-called 'language' makes cooperation at the international level very difficult.

Cyber risks and threats in the modern world pose a serious threat to the EU and NATO. This is why both organizations attach great importance to cybersecurity and are developing different protection mechanisms. The Communication on the Critical Infrastructure Protection, adopted by the European Commission on October 20, 2004, sets out the definition of critical infrastructure and its facilities, as well as the criteria for facilities that may arise in the future. In November 2005, the European Commission adopted the European Green Paper on Critical Infrastructure Protection, which sets out EU action in this area. In 2008, the European Commission launched a project to develop a common strategy for the protection of critical information infrastructure.

Cyber-attacks can damage not only the EU economy but also its democratic foundations, as cyberspace can be used in many ways, including disinformation, economic pressure and so on. Even in the case of a conventional military attack, cyber can be part of a hybrid operation, risks from the digital realm can pose a threat to governments and political systems, try to divide society and provoke conflict outside or inside the country, and we have many similar examples around the world.

The cyber-attack can be found in the World Economic Forum's 2019 Global Risk Document, which outlines cyber threats in five key economic risks. One of the most famous examples was the WannaCry cyber-attack, which spread to 300,000 computers in 150 countries. The Petya and NotPetya cyber-attacks took place, which also resulted in financial losses of hundreds of millions. These attacks and heavy losses have led to the disruption of strategic sectors and critical infrastructure, as well as interstate tensions¹³.

Russia's malicious activities against the EU The extensive scope of Russia's cyber operations is generally recognised by EU policymakers. The

¹² European Commission, *State of the Union 2017 - Cybersecurity: Commission scales up EU's response to cyber-attacks*, <https://ec.europa.eu/commission/presscorner/detail/en/IP_17_3193> (12.04.2021).

¹³ *Wild Wide Web – Consequences of Digital Fragmentation*, <<https://reports.weforum.org/global-risks-report-2020/wild-wide-web/>> (14.04.2021).

European Parliament in November 2016 adopted a resolution stating that Russia's goal is to distort truths, provoke doubt, divide member states, engineer a strategic split between the European Union and its North American partners, discredit the EU institutions and transatlantic partnerships as well as to undermine and erode (the European narrative based on democratic values, human rights and the rule of law). A report presented by the Estonian Foreign Intelligence Service in 2018 also asserted that the past few years have shown that the cyber threat against the West is growing and that most of the malicious cyber activity originates in Russia's. An analysis by the Alliance for Securing Democracy found, for instance, that the Russian government has “used cyberattacks, disinformation, and financial influence campaigns to meddle in the internal affairs of at least 27 European and North American countries since 2004”.¹⁴

According to Jarno Linnell: “Elections lie at the heart of the democratic political process. They are seen as nothing less than democracy in practice. The risk of cyber-enabled meddling in European elections is real, and, when assessing the hybrid threat, elections have emerged as key targets. The Italian general election in 2018, the French presidential election in 2017, the Brexit referendums and U.S. General Election in 2016, to name but a few, have all been subject to influence by malign external agents. It is hard to evaluate precisely how strong or far-reaching an impact these cyber-psychological operations have had, but interfering in European elections is something that should not be tolerated under any circumstances”¹⁵. And, subsequently: “The interference in the election campaign in France is a good example of how cyber operations include not just hacking and leaks, but the use of fake news and other forms of manipulation. According to several research findings and reports, the interference originated from Russia. Russia not only denies responsibility for these activities but claims that European countries were meddling in its presidential election. But Western countries are becoming more vocal in their accusations against Moscow as Russia's cyber interference in European elections shows no signs of abating. Clearly a set of measures to defend digital democracies against disinformation campaigns, hackers and cyberattacks is urgently required”¹⁶.

You will often hear that dealing with cyber threats requires a collective and large-scale approach. That's *not news* that NATO and the EU are actively cooperating in the direction of both information warfare and cyber warfare. NATO has identified cyber warfare as one of the major challenges, and more

¹⁴ J. Linnell, *Russian cyber activities in the UE*, [in:] *Hacks, Leaks and Disruptions: Russian Cyber Strategies*, eds. N. Popescu, S. Secieru, European Union Institute for Security Studies (EUISS), 2018, p. 68.

¹⁵ *Ibidem*.

¹⁶ *Ibidem*.

and more money is being spent each year on technological advances and protection against cyber-attacks. But noteworthy is a new initiative launched by French President Emmanuel Macron in 2018 – "The Paris Call for Trust and Security in Cyberspace"¹⁷. To tell the truth, this initiative is without a legal basis, but the call for cooperation in cyberspace is a high-level declaration, which was supported by 64 countries, including various international NGOs, universities and hundreds of private companies. There is also a Tallinn Guide to Defense Norms, developed by Estonia in cooperation with NATO. It is also known that this guideline is being refined and the European Union is actively involved in this issue. The EU strategy emphasizes that cyber-attacks pose a major threat to EU member and non-EU countries and that it should become a key 'future cyber player' in global politics, which will be fully involved in cyber diplomacy and will seek to deepen the partnership in the field of cyber security.

For the EU, cyber security is an attempt to create a stable digital Europe. In 2020, the EU and its High Representative for Foreign Affairs and Security Policy introduced a new cyber security strategy – the "EU Cybersecurity Strategy" (EUCSS)¹⁸. This document is very ambitious in its content; it aims to provide secure and reliable digital tools and connectivity across Europe, which means Europe to become a global leader in the digital economy. Vital sectors such as electricity, transport, healthcare, finance, telecommunications, security, defence, democratic processes and so on are becoming interdependent daily through information systems. For these interdependent devices, the EU has started to create a scheme and invest. For example, on issues such as artificial intelligence, encryption, and quantum computing. The digital transformation of society, intensified by the COVID-19 crisis, has expanded the threat landscape and is bringing about new challenges, which require adapted and innovative responses. The number of cyber-attacks continues to rise, with increasingly sophisticated attacks coming from a wide range of sources both inside and outside the EU¹⁹.

The EU should therefore be leading the efforts for secure digitalisation. It should be driving norms for world-class solutions and standards of cybersecurity for essential services and critical infrastructures, as well as

¹⁷ *Cybersecurity: Paris Call of 12 November 2018 for Trust and Security in Cyberspace*, <<https://www.diplomatie.gouv.fr/en/french-foreign-policy/digital-diplomacy/france-and-cyber-security/article/cybersecurity-paris-call-of-12-november-2018-for-trust-and-security-in>> (15.04.2021).

¹⁸ *New EU Cybersecurity Strategy and new rules to make physical and digital critical entities more resilient*, <https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2391> (17.04.2021).

¹⁹ *The Cybersecurity Strategy*, <<https://digitalstrategy.ec.europa.eu/en/policies/cybersecurity-strategy>> (16.04.2021).

driving the development and application of new technologies. Governments, businesses and citizens will all share a responsibility in ensuring a cyber-secure digital transformation²⁰.

And yet, what constitutes the structure of the EU Cybersecurity Strategy, which is directly linked to economic well-being? The new EU Cybersecurity Strategy is divided into three parts:

- 1) Sustainability, technological sovereignty and leadership;
- 2) Capacity building, prevention, containment and response;
- 3) Advancing global and open cyberspace²¹.

According to the EU, both the private and public sectors should be able to choose between the most secure infrastructure and services.

The EU has the Network and Information Security Directive, (NIS, or NIS Directive), which is a unified internet cyber-security database. According to the directive, it is necessary to upgrade the cyber technologies of all relevant sectors, for example, energy, transport, health, the financial sector. Reform of the NIS Directive has begun and it will help reduce internal market inconsistencies and set specific rules for strategically important sectors. It is known that Information Sharing and Analysis Center (ISAC) – Computer Security Case Response Group (CSCRG), Computer Security Incident Response Team (CSIRT) and SOC Security Operations Centers²² – will play an important role in a cyber technology competition. The establishment of these centres is based on overcoming cyber security threats by the public and private sectors, which means disseminating relevant information, identifying anomalies in real-time, or detecting hacker, viral attacks. The EU is ready to spend € 300 million to set up and operate such centres, which will create collective knowledge and best practices in the fight against cyber threats. The Commission plans to work with the EU Member States to establish a secure quantum communications infrastructure (QCI) for Europe that ensures the security of state government communications. The QCI will be equipped with fibre-optic communication networks as well as connected satellites, covering areas *inside and outside the European Union*.

In the context of the modern threats facing the EU and NATO, it is important to focus on G5 technology. The security risks inherent in Chinese-made 5G networking equipment are easy to understand. Because the companies that make the equipment are subservient to the Chinese government, they could

²⁰ *Ibidem*.

²¹ *Joint Communication to the European Parliament and the Council – The EU's Cybersecurity Strategy for the Digital Decade*, <<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020JC0018>> (17.04.2021).

²² *EU coordinated risk assessment of the cybersecurity of 5G networks*, 2019, pp. 4-12, <<https://digital-strategy.ec.europa.eu/en/news/eu-wide-coordinated-risk-assessment-5g-networks-security>> (18.04.2021).

be forced to include backdoors in the hardware or software to give Beijing remote access. Eavesdropping is also a risk, although efforts to listen in would almost certainly be detectable. More insidious is the possibility that Beijing could use its access to degrade or disrupt communications services in the event of a larger geopolitical conflict. Since the internet, especially the ‘internet of things’, is expected to rely heavily on 5G infrastructure, potential Chinese infiltration is a serious national security threat²³.

In March 2019, the EU Commission started working on 5G technology and the security of the next generation of mobile networks, the EU issued a recommendation on cyber security of 5G networks. The recommendation was followed in October 2019 by the EU 5G network cybersecurity risk assessment and in January 2020 by the 5G (EU 5G Toolbox) the adoption and mitigation of cybersecurity risk mitigation measures. In October 2020, the Council of Europe called on EU member states to make full use of 5G cyber security tools, as well as to apply appropriate restrictions on high-risk providers. It should be noted that in December 2020, the EU published a report on the impact of EU recommendations, which shows the important process that EU member states have undergone in the installation and implementation of EU 5G. However with some changes and in some cases remaining shortcomings. The EU called on member states to continue to implement the 5G key recommendations and improve them in the second quarter of 2021²⁴.

EUCSS stresses the vitality of EU-NATO cooperation and proposes to further advance inter-institutional cooperation, most notably in connection with cyber defence interoperability. The EUCSS is an ambitious strategy that tries to prepare the Union for the major cyber threats of the 21st Century. While the strategy itself is considered ‘soft law’ and is not legally binding, it introduces several initiatives that could be a real game-changer in cybersecurity²⁵.

Thus, it is clear that the EU is fighting on several fronts in the field of cyber security and cyber technology; it seeks to increase cyber resilience, fight cybercrime, enhance cyber diplomacy, strengthen cyber defence skills, enhance research, implement innovative technologies and protect critical infrastructure.

Internet disinformation has far-reaching consequences. It threatens the democratic debate and endangers the health, safety and environment of the population. The EU is therefore taking clear, multifaceted and comprehensive measures to prevent the spread of disinformation through the Internet in

²³ B. Schneier, *China Isn't the Only Problem With 5G*, <<https://foreignpolicy.com/2020/01/10/5g-china-backdoor-security-problems-united-states-surveillance/>> (20.04.2021).

²⁴ *EU coordinated risk assessment...*

²⁵ O. Noyan, *The New EU Cyber Security Strategy – Exploring Ways to Shape Europe's Digital Future*, <<https://finabel.org/the-new-eu-cyber-security-strategy-exploring-ways-to-shape-europes-digital-future/>> (18.04.2021).

Europe. NATO is also involved in combating the spread of Internet disinformation.

In 2021, the EU adopted a new cyber security strategy. It must be said that overall it is a pretty good document and takes into account many important aspects and factors in the cyber security dimension. But, problems remain in terms of the effectiveness of the cyber security strategy. The reason for this is that this field is quite complex and multidimensional. Threats come from private companies, states, hackers, cyberterrorists, non-state aggressive groups, etc. This all complicates the effectiveness of cyber strategies. It must be said that these subjects create new threats and challenges. Therefore, these strategies need to be periodically updated and countermeasures developed. All of this will focus on the effective management of threats, risks and challenges.

The EU and NATO must take into account the significant threats and risks posed by cyberspace to implement their cyber strategy. Therefore, the following issues should be addressed: resilience, operational capacity to prevent, deter and respond; technological sovereignty, cooperation to advance global and open cyberspace. For all this, it is necessary to develop a strong cyber strategy. This is associated with significant financial costs.

Conclusion

The EU Cyber Security Strategy responds today to the challenges and threats posed by cyberspace, although some issues need to be improved and require active efforts by member states. The economic sector is actively tied to cyberspace and for its effective operation, it is necessary to protect cyber security. International cooperation is one of the key conditions and prerequisites for the development of the cyber security sector. It is, therefore, necessary to have partnerships with organizations operating within the EU, a joint NATO-EU cyber security effort, as well as active involvement in various projects that will increase cyber security and exchange information between partner countries.

The modern world that is developing and advancing daily is experiencing and evolving cyber threats. EU member states, which are constantly facing new challenges and global threats in cyberspace, benefit greatly from having a flexible and operational cyber security strategy. The transboundary nature of cybercrime forces member states to work closely with each other and at the international level in general. Such cooperation is essential not only for effective preparation for cyber-attacks but also for timely response to them. Therefore, the approach of the state strategy towards cyber security should be comprehensive. While cyber terrorism is becoming quite dangerous and hacking cyber-attacks on government infrastructure, strategic facilities,

economic sector, citizens, various regional or international organizations and so on, are becoming more and more active.

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VENTURE CAPITAL AND PRIVATE EQUITY FUNDS. OPPORTUNITIES AND THREATS FOR ENTERPRISES

Abstract:

The article deals with the very important issue of supporting enterprises with the help of venture capital/private equity (VC/PE) funds and an attempt was made to identify opportunities and threats related to the use of this type of funds by enterprises. The first chapter defines the terms ‘venture capital’ and ‘private equity’, and characterizes the distinctive features of these funds. The second chapter presents the investment process of VC/PE funds from the moment of accumulating capital resources to the exit of the fund from the investment (disinvestment). In the third chapter, the most common opportunities and threats related to VC/PE investments were identified and ranked on the basis of 18 investment cases and 102 values added extracted from these investments.

Keywords:

venture capital, private equity, corporate financing

Introduction

Venture capital/private equity funds are one of the forms of not only financial but also non-financial support for enterprises. For this reason, they are often described as an alternative instrument² to traditional sources of corporate financings, such as a bank loan or leasing, or as a hybrid instrument³ - combining many aspects of enterprise support, not limited to financial support.

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² I. Piekunko-Matniuk, *Inwestycje na rynku private equity/venture capital jako forma lokaty kapitału*, [in]: *Inwestycje alternatywne*, ed. I. Pruchnicka-Grabias, Warszawa 2008, p. 59.

³ M. Panfil, *Fundusze private equity. Wpływ na wartość spółki*, Warszawa 2005, p. 19.

However, on the Polish market, the essence of this type of funds, their structure or phases of the investment process are unknown to many entrepreneurs. This is evidenced by both the quantity and the amount of VC/PE investments in Poland, especially compared to the Western European market⁴. It is also worth noting the duality of the enterprise-fund relationship: from the fund's perspective, an enterprise is just an investment, while from the perspective of an enterprise, VC/PE is a form of enterprise support.

Alternative forms of financing become particularly popular when access to more traditional forms, such as bank loans, is difficult or impossible, which causes an equity gap in the financial market. The reasons for the equity gap may be various and result from both the macroeconomic situation on the market (e.g. economic crisis, unemployment, inflation) and the microeconomic situation of the enterprise (e.g. low creditworthiness, high risk of failure of the planned undertaking, etc.). The pandemic resulting restrictions and economic lockdown may also be the reason why entrepreneurs start looking for additional forms of support. However, before using alternative forms of financing, entrepreneurs should be aware of the opportunities and threats that stand behind them. For this reason, the analysis of opportunities and threats of venture capital/private equity funds seems necessary and justified.

In order to fully present and explore the discussed issues, the article has been divided into 3 parts:

- in the first part, an attempt was made to define what are venture capital and private equity funds, what are their distinctive features and why the terms venture capital and private equity are often used interchangeably; the first chapter also presents selected types of VC/PE funds;
- the second part outlines the investment process of the VC/PE funds to look at the whole issue more broadly – from the fund's as well as enterprise's perspective;
- in the third part, on the basis of 18 investments of VC/PE funds and 102 added values, which the funds have singled out in their investments, an attempt was made to identify the opportunities and threats of VC/PE funds for enterprises.

Definitional controversies around the notions of venture capital/private equity

The 'venture capital' and 'private equity' terms are often used interchangeably, although they are not identical. However, in the literature on the subject, data on the venture capital/private equity market are given many

⁴ *European Private Equity Activity Data 2016, 2017*, Invest Europe Research, EVCA; *European Private Equity Activity Data 2007-2016*, Invest Europe Research, EVCA.

times without division into both types of funds. In the United States, the publications of the National Venture Capital Association (NVCA) are considered to be one of the primary sources of venture capital/private equity. Its counterpart in Europe is the European Venture Capital Association (EVCA), and in Poland – the Polish Association of Capital Investors (PACI or in Polish: Polskie Stowarzyszenie Inwestorów Kapitałowych – PSIK). Therefore it is worth referring to the definitions recognized by these organizations.

According to NVCA, venture capital fund is the long-term cooperation with innovative companies. Its goal is to turn ground-breaking ideas into new, growing companies that contribute to job creation and economic growth⁵. NVCA does not provide a definition of private equity.

EVCA extends the definition of venture capital more than NVCA. It also defines private equity. According to the European Venture Capital Association:

- venture capital is a capital invested in projects at the initial stages of development: seed or start, and in the expansion phase (geographic or industry); compensation for the high risk taken by the investor is the high expected rate of return;
- private equity is a long-term investment consisting in the purchase of shares in unlisted companies, whereby the investor not only finances but also becomes involved in the management of the enterprise. Private equity investments are aimed at developing a new product or technology⁶, improving the balance sheet, increasing working capital⁷.

The main difference between venture capital and private equity is the stage of development of the venture in which the funds invest. In the case of VC, these will be developing enterprises, while PE - mature enterprises with a relatively stable financial situation. Despite the theoretical distinction between the two terms, in practice, EVCA uses the term private equity to describe both types of investments. Although PE and VC refer to financing different stages of enterprise development, according to EVCA, the essence of the definition in both cases remains the same.

Iwona Piekunko-Matniuk notes that the European Commission (EC) takes a similar position in terms of terminology as EVCA, but venture capital is one of the types of private equity here⁸. The Commission divides the PE into three main sub-categories:

- venture capital – capital intended for launching a venture and financing the early stages of its development;

⁵ *NVCA About Us*, <<https://nvca.org/about-us/>> (30.06.2021).

⁶ *About private equity*, <<https://www.investeurope.eu/about-private-equity/>> (30.06.2021).

⁷ *Guide to Private Equity and Venture Capital for Pension Funds*, Brussels, <<https://www.investeurope.eu/media/510671/Invest-Europe-Pension-Fund-Guide-to-Private-Equity-and-Venture-Capital.pdf>> (30.06.2021).

⁸ I. Piekunko-Matniuk, *Inwestycje na rynku private equity...*, *op. cit.*, p. 59.

- expansion capital – intended for later stages of development, such as the development of new products and services, the establishment of a foreign branch, increase in production capacity;
- management buy-in, MBI or management buy-out, MBO – investments undertaken in developed enterprises in cooperation with the existing management board or with a new, specially created management board⁹.

The Polish Association of Capital Investors defines private equity as medium- and long-term investments made in order to achieve profits from the increase in the value of capital. PE invest in mature companies that require restructuring or change owners. PE funds buy shares of unlisted companies and take measures to increase the value of the enterprise in order to sell their shares at a profit. Therefore, the interests of the funds are in line with the interests of the remaining shareholders of the company, who also care about its growth¹⁰. The definition of private equity developed by PSIK is consistent with that provided by EVCA. In both cases, such features of the PE as investing in mature, unlisted companies, buyout of shares of a given enterprise in order to sell them profitably, long-term activity, active participation of the PE investor in the management of the enterprise and supporting the management board in the company's development are emphasized.

According to the definition of the Polish Association of Capital Investors, venture capital is one of the types of private equity. PSIK, like its American and European counterparts, highlights the main distinctive feature of VC, i.e. investment funds made in the early stages of enterprise development, which are investments aimed at starting the company or its expansion. Similar to PE, a VC fund buys the company's shares and earns when the other shareholders earn and take the risk with them. The VC investor is also an investor actively involved in the management of the enterprise.

In Poland, one of the first compact publications on venture capital was prepared by Jerzy Węclawski in 1997. According to him, “venture capital can be defined as an equity contributed for a limited period by external investors to small and medium-sized enterprises with an innovative product, production method or service that have not yet been verified by the market, and therefore have a high risk of investment failure, but at the same time, in the event of a successful venture, supported in the management by investors, they ensure a significant increase in the value of the invested capital, which is realized through the sale of shares”¹¹. This approach is defined as traditional, classic or

⁹ *Report of the Alternative Investment Expert Group. Developing Europe Private Equity*, European Commission, Internal Market and Services DG, 2006, pp. 9-10.

¹⁰ *Polskie Stowarzyszenie Inwestorów Kapitałowych*, <<https://psik.org.pl/>> (30.06.2021).

¹¹ J. Węclawski, *Venture capital. Nowy instrument finansowania przedsiębiorstw*, Warszawa 1997, p. 17.

VC in the narrow sense because it limits VC investments only to enterprises from the SME sector that have an innovative product, production method or service idea.

A slightly broader definition, based on the definition formulated by EVCA, is presented by Piotr Tamowicz, who emphasizes that “venture capital is a medium and long-term capital invested in equity securities of unlisted enterprises”¹². Through this formulation, the author wants to emphasize that the concept of venture capital refers to developing enterprises, not listed on the stock exchange, that are interested in VC capital. This definition represents a pragmatic approach (development finance, VC largo sense): it rejects the novelty of the enterprise, its technological nature and high investment risk as necessary to be included in the group of VC financing.

A similar definition is presented by Katarzyna Sobańska-Helman and Piotr Sieradzan, who distinguish such features of VC/PE investments as: medium- and long-term nature, financing combined with managerial support, investments in enterprises with a chance to achieve an above-average increase in value¹³.

Summing up, the meaning of venture capital has evolved in the literature on the subject. Initially, this term was understood only as long-term investments in enterprises at the initial stages of development, having an innovative idea, product or service with the highest possible rate of return in the event of success, but also a sufficiently high risk of failure. Such definitions are defined as traditional or venture capital in a narrow sense¹⁴. After some time, the terms venture capital and private equity have started to be used interchangeably in the European nomenclature, and the statistical data for both types of funds are given jointly (EVCA, PSIK). VC/PE financing is currently most often defined as financing not only intended for young enterprises, such as start-ups, but also as restructuring financing for developing and developed enterprises entering a new geographic or industry market. The key fact is that venture capital financing consisting in the purchase of company shares is not only equity financing, but also financing through added value – knowledge of a given industry, company management, information about business contacts. This is a broader definition of venture capital, called development finance or venture capital largo sense, which will also be adopted in this article.

There are many classifications of VC funds. Venture capital funds can be classified according to criteria such as the scope of activity, the purpose of the

¹² P. Tamowicz, *Fundusze inwestycyjne typu venture capital. Narodziny i rozwój. Warunki rozwoju venture capital w Polsce*, Gdańsk 1995, p. 3.

¹³ K. Sobańska-Helman, P. Sieradzan, *Inwestycje private equity/venture capital*, Warszawa 2013, p. 13.

¹⁴ J. Węclawski, *op. cit.*

activity, source of capital, etc. Taking into account the purpose of the activity of VC funds, we divide them into:

- commercial funds, the main purpose of which is to achieve maximum income;
- aid funds for which the income is not, or is one of the purposes of the activity.

The type of VC objective depends mainly on the founder of the fund and its affiliation with the management company. For this reason, we can distinguish:

- independent funds – created with the help of the capital of private persons or financial institutions (banks, pension funds, insurance companies). The purpose of such funds will be to achieve maximum profitability when purchasing shares in the company and selling them thereafter;
- subsidiary funds – created mainly by public institutions, but also banks and other entities. In addition to the profit criterion, subsidiary funds may pursue other goals: the state may pursue by establishing this type of funds to develop innovative processes, industrial enterprises - to gain access to the latest technology and competitive solutions through share-based enterprises, while banks use VC to finance higher-risk investment projects¹⁵. In this way, banks gain the opportunity to invest in financial surpluses, acquire new customers, increase the profit rate with above-average profit, etc¹⁶.

Looking from the material scope, VC funds can be divided into:

- universal funds – deal with most types and forms of investments;
- specialist funds – invest in specific industries, in enterprises at a specific stage of development (e.g. in the seed stage, expansion, etc.)

A similar criterion is a division according to the relationship between the accumulation of capital and the choice of shareholding enterprises, within which the following are distinguished:

- blind pool funds – first they acquire capital and then look for the possibility of investing it;
- specified pool – are created for predefined projects.

From the territorial point of view, the following are distinguished:

- regional funds – invest only in companies registered and operating in a designated area;
- supra-regional funds, also known as nationwide funds¹⁷ - operate

¹⁵ M. S. Wiatr, *Bankowość korporacyjna*, Warszawa 2012, Chapter 1; M. Pacholczyk, *Zabezpieczanie pożyczek i kredytów bankowych*, Warszawa 2008.

¹⁶ J. Węclawski, *op. cit.*, p. 19.

¹⁷ K. Gabryelczyk, *Nowe usługi finansowe*, Warszawa 2006, p. 53.

throughout the country;

- International funds – invest through foreign branches or cooperative links¹⁸.

Based on the criterion of legal relations between the capital giver and the managing entity, VC funds are divided into:

- contractual funds – the legal relationship between the principal and the management company is not of a corporate nature. The management of the fund is entrusted to a separate management company with assets kept separate from those of the fund. The advantage of a contractual fund is high organizational flexibility and less exposure to the fund in connection with the investments made;
- statutory (company) funds – no separation of the fund's assets from the assets of the company managing it. The capital provider is both an investor and a shareholder. It can therefore directly exert pressure on investment decisions, which on the one hand gives it greater control, but on the other hand, is more exposed to the risk associated with the investments it makes¹⁹.

Another criterion for the division of VC is the origin of the fund's capital:

- funds using capital from their founder;
- funds raising financial resources on the capital market;
- funds that use public money, for example under innovation support programs.

Funds from the first two groups are non-public funds, and funds from the third group can be classified as public funds.

Depending on how the fund accumulates capital²⁰, funds are divided into:

- open-end investment funds (FIO) – accumulate capital by selling participation units. The number of these units is not limited and the buyer can buy or sell any number of them at any time. VC funds are rarely in the form of an open-ended fund;
- closed-end investment funds (FIZ) – the capital is defined in advance and the number of shares is fixed. Assets are divided into investment certificates. Funds raise funds by increasing the number of shares or issuing new shares. Closed-end funds have a defined life cycle and are dissolved after the investment is completed²¹.

VC funds also differ in the way they acquire investment projects. According to this criterion, they can be divided into:

¹⁸ H. Podedworny, M. Żynek, *Venture capital - kapitał wysokiego ryzyka w finansowaniu małych i średnich przedsiębiorstw w Polsce*, Białystok 2000, p. 31.

¹⁹ P. Tamowicz, *op. cit.*, p. 7.

²⁰ A. Chłopecki, *Fundusze inwestycyjne*, "Przegląd Podatkowy", No 4, 1992.

²¹ W. Przybylska-Kapuścińska, M. Mozalewski, *Kapitał wysokiego ryzyka*, Warszawa 2011, p. 47.

- funds that independently select and finance enterprises;
- funds cooperating with other VC companies as part of a consortium aimed at acquiring and financing investment companies. Usually, one of the funds is a leader and the rest provide capital.

Depending on the intensity of support for participating enterprises in management, the following can be distinguished:

- active funds supporting a participating enterprise in all difficulties related to its activity;
- passive funds controlling the activities of the enterprise without support in day-to-day management.

The last, very common division of VC funds presented here, is the classification introduced by W. D. Bygrave²² according to the criterion of the amount of capital at the fund's disposal:

- megafunds – independent funds with capital not less than 100 million dollars. A. Silver claims that the creation of megafunds is less and less profitable due to too many negative factors related to their activities, such as: investing more capital in one project than necessary, realizing financial benefits in the long run than smaller funds, the lower propensity of megafunds to creating consortia, which contributes to the lack of verification of decision-making processes by other members of the consortium²³, mega-funds operate mostly on domestic and foreign markets, and their involvement in one project ranges from USD 1 to 3 million;
- mainstream funds - they have capital from USD 25 to 99 million, engaging an average of USD 1 million in one project, operate mainly on the domestic and regional market;
- second-tier funds - they manage the capital of approximately USD 25 million with an average investment of 500-750 thousand dollars, invest in regional and local markets;
- niche funds - with capital up to USD 25 million with an average investment amounting to 50-250 thousand dollars, specialize in financing start-ups and financing specific industries;
- corporate funds - are owned by large industrial corporations with capital from 25 to 50 million dollars.

In addition to the above-mentioned, other VC partition criteria may be used²⁴. It is also possible to have mixed solutions combining various features of the presented typologies.

²² W. D. Bygrave, J. A. Timmons, *Venture Capital at the Crossroads*, Boston 1992, p. 52; P. Tamowicz, *op. cit.*, p. 45.

²³ A. D. Silver, *Venture Capital. The Complete Guide for Investors*, New York 1985, p. 19.

²⁴ A. Bellucci, G. Gucciardi, D. Nepelski, *Venture Capital in Europe. Evidence-based insights about Venture Capitalists and venture capital-backed firms*, Brussels 2021, p. 12.

The investment process of venture capital/private equity funds

VC/PE funds consist of two entities: a management company and funds that they manage on behalf of investors. Most of these funds are organized as limited partnerships. They can be divided into:

- companies that manage independently – most often they are owned by key partners. They raise capital as part of a formalized process (fundraising);
- managing companies dependent on financial institutions (captive investors) – founded by financial institutions, called sponsors, which also put their funds for management. Most often, owners of management companies are financial institutions, and their employees receive remuneration but are not co-owners of the fund;
- a separate form of operation of high-risk organizations is corporate venturing²⁵.

The management of venture capital/private equity funds is divided into 5 basic stages:

- 1) Raising funds – institutional or private investors provide funds to manage funds. The main elements of this phase are: defining the fund's operating strategy, recruiting qualified employees, establishing the principles of remuneration and functioning of the funds, creating legal and financial documentation for obtaining funds;
- 2) Selection of portfolio companies – VC/PE fund managers choose companies that will allow investors to obtain a high rate of return. The key element is to conduct a pre-investment analysis, which consists of a business plan analysis²⁶ and due diligence²⁷ - a detailed assessment of the company. The second element is a reliable valuation of the company;
- 3) Structuring of transactions – negotiating and concluding transactions of purchase of shares or stocks of portfolio companies. The success factor is: obtaining a favourable price in the transaction, securing the fund against the risk of share decline and the risk of conflict with other owners and employees, motivating to maximize the value of shares;
- 4) Ownership supervision – VC/PE funds offer substantive support and supervise the activities of company managers. They do this through creating favourable relations between the fund and the portfolio

²⁵ M. Wrzesiński, *Kapitał podwyższonego ryzyka: proces inwestycyjny i efektywność*, Warszawa 2006, p. 30.

²⁶ K. Vandenbempt, P. Dunne, *A Look at the Business Plan*, Zaventem 2004, p. 10.

²⁷ W. Przybylska-Kapuścińska, M. Mozalewski, *op. cit.*, pp. 75-98.

company, advisory support for companies, constant monitoring of companies' activities;

- 5) Exit from the investment – VC/PE funds sell shares and take profit from the investment²⁸.

Indirectly investing venture capital/private equity funds (dependent on financial institutions) typically consist of three main components:

- capital pool organized in the form of an appropriate legal structure;
- capital investors, i.e. various types of entities that become co-owners by contributing appropriate expenditures to the capital mass;
- a managing entity that manages their capital on the basis of a contract concluded with investors²⁹.

The VC cycle begins with a venture capital firm that decides to raise funds from external investors to set up a fund. At this stage, it has limited ability to raise capital due to high investment risk. A venture capital company is referred to as a general partner (GP) or management company, while investors – limited partners (LP). LP are most often institutional investors – foundations, pension and insurance funds, investment banks, industrial enterprises. GP usually provides 1% of the fund capital, while LPs provide the remaining 99%. The GP also receives an annual remuneration of 2-3% of the value of the funds contributed³⁰. On the other hand, LP investors often use the experience and business contacts brought by GP.

VC/PE use different methods to attract potential stakeholder companies. In the literature on the subject, three approaches to the acquisition of capital of venture capital funds are distinguished³¹:

- passive attitude – characteristic for a developed market and high innovative activity of enterprises; the funds passively await applications from interested companies;
- cooperation with other funds – VC funds exchange information about companies interested in investing or implementing a collective investment strategy (co-venturing);
- independent initiation of the creation of enterprises – occurs when there are no interesting projects for the VC fund on the market; acquisition may take place by supporting a promising innovative project or persuading already existing companies to restructure, enter the stock exchange, etc.

The group of investors interested in creating VC funds includes a broad range of financial and non-financial institutions³². The basic typology of

²⁸ M. Wrzesiński, *op. cit.*, pp. 31-33.

²⁹ P. Tamowicz, *op. cit.*, pp. 34-35.

³⁰ W. Przybylska-Kapuścińska, M. Mozalewski, *op. cit.*, p. 57.

³¹ J. Węclawski, *op. cit.*, pp. 126-127.

venture capital investors was created by EVCA³³, including among them (the summary is presented in Table 1):

- individuals – by participating in the fund, they diversify their investment portfolio, they are often encouraged to invest by the possibility of taking advantage of tax reliefs;
- enterprises, corporations – apart from participation as ‘external’ recipients of VC financing, they can engage in the fund's activities as internal venture capital donors. The main reasons for the participation of enterprises in VC investment projects are: diversification of income, insight into innovation and R&D activities of companies financed by VC (window on technology), obtaining information on new, developing industries and technological solutions later transferred to the production activity of a given corporation (venture management), identification of potential companies for a buyout. On the other hand, barriers may be conflicts between the slow, hierarchical decision-making procedure within the corporation and the need for quick and flexible investment decisions in the fund³⁴. The method of remuneration can also cause confusion, especially if it differs from the solutions usually applied in remuneration of managing entities;
- banks – due to the willingness to expand their operations and attract new clients (it is assumed that if a company manages to tie it with a financial institution in the initial period of its operation, it will become its client when the company matures). The accusation against banking funds is that they treat investment projects too conservatively (the requirement to have appropriate collaterals);
- pension funds and insurance companies – for additional income;
- scientific institutions – in order to support and stimulate their employees in setting up enterprises using for commercial purposes the results of research developed in these institutions. Sometimes the presence of a scientific institution among the fund's funders improves the financial credibility of a given research institution and affects the interest of a wider group of investors;

³² E. Grzegorzczak, *Dokapitalizowanie rynku private equity/venture capital przez środki publiczne drogą do rozwoju innowacji w Polsce*, “Journal of Capital Market and Behavioral Finance”, vol. 1(1), Łódź 2014, pp. 45-63.

E. Grzegorzczak, *Funkcjonowanie kapitału private/equity/venture capital w Europie na przełomie pierwszej i drugiej dekady XXI w.*, “Studia Ekonomiczne”, No 174, 2013, pp. 277-290.

³³ *EVCA Yearbook*, 2012.

³⁴ R. Sułkowski, *Publiczne fundusze venture capital – źródło kapitału dla małych i średnich przedsiębiorstw*, “Zeszyty Naukowe Akademii Ekonomicznej w Krakowie”, No 667, 2004, pp. 5-7.

- public institutions – for economic activation of some regions and reduction of unemployment by supporting the SME sector³⁵.

Table 1. Investors and motives to invest through venture capital/private equity funds.

Investor type	Investing motive
individuals	portfolio diversification, tax breaks
enterprises, corporations	access to new technologies and innovations, venture management, identification of potential companies to buy out, portfolio diversification
banks and other financial institutions	business expansion, customer acquisition
pension funds and insurance companies	getting additional income
scientific institutions	promotion of own research results
government institutions	stimulating the economy

Source: own study based on: K. Sobańska-Helman, P. Sieradzan, *op. cit.*, pp. 33-35, P. Tamowicz, *op. cit.*, pp. 35-36.

The selection of portfolio companies in the second phase of VC/PE fund management, during which VC/PE fund managers select companies that will allow investors to obtain a high rate of return. The key element is to conduct a pre-investment analysis, which consists of a business plan analysis and due diligence – a detailed assessment of the company.

During the overall analysis, there are no standardized enterprise assessment procedures and schemes. It can be assumed that the overall assessment of a company by venture capital/private equity is based on four pillars³⁶:

- the company's growth potential;
- a product or service with unique features;
- a team of experts in the field of finance, management and marketing;
- consent of the enterprise to resell a part of the shares to the VC/PE fund.

Overall analysis can also be composed of more than one stage. Then, in addition to the four pillars mentioned above, the VC fund may apply additional

³⁵ K. Sobańska-Helman, P. Sieradzan, *op. cit.*, pp. 33-35.

³⁶ T. M. Dudzik, *Ewolucja koncepcji marketingu – marketing między ekonomią i zarządzaniem*, "Zeszyty Naukowe SGH", 2010, pp. 59-78.

criteria, such as the industry and region the enterprise comes from, the minimum expected rate of return in a given period, etc.

The next stage is a detailed analysis of the project, also called due diligence. Unlike an audit, due diligence is future-oriented; is an assessment of the company's condition and risk areas that may in the future lead to a weakening of the company's competitive position³⁷. In addition, the detailed analysis of the project is not limited to the internal analysis, as in the case of an audit, but also includes an analysis of the external environment³⁸. Due diligence is not subject to strict rules. It is a multifaceted analysis depending on the size of the company, its structure, stage of development, industry, and above all, on the needs of the person commissioning the study. Depending on the type of information that a venture capital fund needs, the research may include legal and tax aspects of the company's operations, financial, cultural, marketing and sales, environmental and strategic aspects. Due diligence is not legally required but is highly recommended.

Transaction structuring is the third step in managing a VC/PE fund. It consists in negotiating and concluding transactions of purchase of shares or stocks of portfolio companies. During venture capital negotiations, they try to obtain as many securities as possible against investment risk and solutions that facilitate quick withdrawal of the capital involved. Such solutions include introducing fund representatives to the company's management bodies, reserving the possibility for VC to take control of the enterprise in the event of the lack of certain financial results within the agreed deadline, providing funds with priority rights with regard to further stages of financing or taking up new shares. During the negotiations, the method of divestment of the fund is also regulated. The funds may reserve the right to sell shares to other owners of the company or on the market, after achieving the assumed value growth. The negotiations end with the definition of the rights and obligations of both parties, the number of shares and the designation of the investment period.

After the conclusion of the negotiations and the signing of the investment agreement, the investment phase, so enterprise management by VC takes place, which ends at the time of disinvestment. The basic duties of the fund during the management of the enterprise are: control over the current activity, participation in making strategic decisions and advising on the key problems of the company³⁹. In order to fulfil these obligations, the fund requires monthly,

³⁷ E. Chojnacka, *Pozyskiwanie źródeł finansowania a cykl życia przedsiębiorstwa: analiza przypadków wybranych spółek kapitałowych notowanych na rynku New Connect*, "Roczniki Naukowe Wyższej Szkoły Bankowej w Toruniu", No 8, 2009, pp. 43-54.

³⁸ K. Brzozowska, *Due diligence jako źródło informacji w procesie podejmowania decyzji inwestycyjnych*, "Ekonomika i Organizacja Gospodarki Żywnościowej. Zeszyty Naukowe SGGW", No 91, 2011, pp. 17-26.

³⁹ W. Przybylska-Kapucińska, M. Mozalewski, *op. cit.*, p. 155.

quarterly and annual financial reports, reports on the implementation of investment plans, sales and production, as well as information on turnover and liquidity from the company. Additionally, the fund's management permissions are a very important element, which may include:

- approving the company's business plans and introducing changes;
- changes and termination of contracts concluded by the enterprise;
- sale of part or all of the company, opening and closing branches or subsidiaries;
- merging with other companies;
- granting loans and incurring credit obligations⁴⁰.

The last, fifth phase of managing the investment process is the exit from the investment (divestment). Disinvestment is a natural stage ending the investment process for venture capital/private equity funds. The purpose of venture capital funds is not to remain in a company that does not generate a profit corresponding to the risk incurred by the fund. Through the restructuring of their investment portfolio, funds obtain capital for new investments and capital for meeting their obligations towards their capital providers (investors financing the VC fund). The date and manner of the fund's exit from the investment are usually agreed upon in the negotiation process concluded with the signing of an investment agreement. The VC/PE fund may demand additional conditions necessary for disinvestments, such as the achievement of specific economic results by the enterprise or the achievement of a set goal⁴¹.

As in the business valuation stage, VC funds use various statistical tools to calculate investment returns before deciding to divest. The obtained results may be the basis for them to exit the company and sell shares⁴². The most common tools used for economic analysis are⁴³:

- static investment effectiveness assessment formulas such as payback period (PP) and accounting rate of return (ARR);
- dynamic formulas for assessing the effectiveness of investments such as net present value (NPV), internal rate of return (IRR) and modified internal rate of return (MIRR).

After analyzing the company's results on the basis of the tools described above, the investor selects the method of exit from the investment (if the

⁴⁰ K. Sobańska-Helman, P. Sieradzan, *op. cit.*, p. 110.

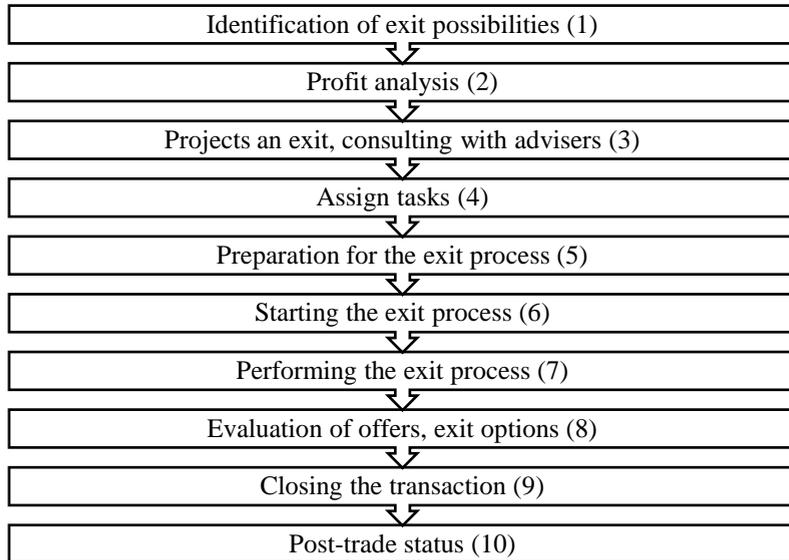
⁴¹ J. Nowak, *Scenariusze dezynwestycyjne funduszy venture capital na rynku Europy Środkowo-Wschodniej*, "Studia Ekonomiczne. Międzynarodowe stosunki gospodarcze – wybrane podmioty i procesy gospodarki światowej", No. 122, 2012, pp. 173-182.

⁴² A. Ożóg, J. Wojnar, *Ocena kondycji finansowej przedsiębiorstwa na podstawie analizy wskaźnikowej i modeli analizy dyskryminacyjnej*, "Przedsiębiorstwo i Finanse", No. 2015/4 (11), 2015, pp. 91-103.

⁴³ E. Ostrowska, *Ryzyko projektów inwestycyjnych*, Warszawa 2002, pp. 63-77.

indicators meet its assumptions set before the venture capital fund entered the company).

Figure 1. Stages of the disinvestment process



Source: own study based on: S. Povaly, *Private Equity Exists: An Analysis of Divestment Process Management in Relation to Leveraged Buyouts*, St. Gallen 2006, p. 162.

Disinvestment is the last stage of the investment process of venture capital/private equity funds. After exiting the investment and realizing portfolio profits, the fund starts another investment cycle looking for new projects.

The investment process in the case of VC/PE funds is, as can be seen based on the literature on the subject and the opinions of VC practitioners, a multi-stage and carefully structured. It requires both companies applying for funding and fund managers to be precise, be able to look critically at a given idea and be professional.

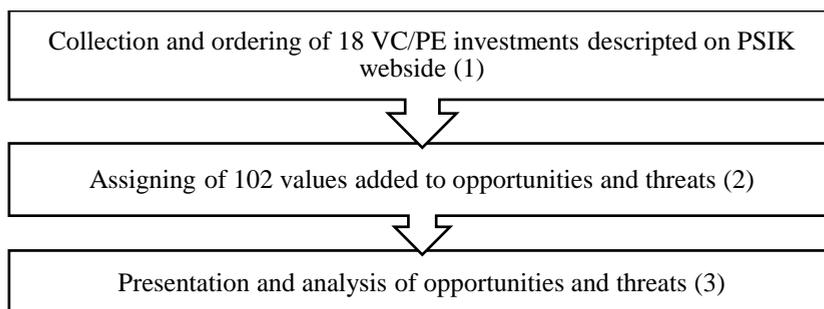
Opportunities and threats of venture capital/private equity investments for enterprises

In order to distinguish opportunities and threats for enterprises resulting from VC/PE investments, it seems most reliable to conduct research on live case examples – investments that took place in reality. Unfortunately, access to information on VC/PE investments is very often difficult. First of all, there

is no single institution that would collect data on all existing VC/PE funds – we have EVCA on the European market, and PSIK in Poland, but both of these institutions, although considered to be VC/PE associations, do not cover all funds from this type, and membership in EVCA / PSIK is voluntary. Moreover, a fund may be removed from the list of members if it does not meet the requirements of the Code of conduct⁴⁴. Second, the investment process between the fund and the company, from the initial screening to the exit of the fund, is often not publicly known and confidentiality applies to both parties.

For this reason, bearing in mind the above limitations, the author decided to collect and analyze all available VC/PE investments published on the website of the Polish Association of Capital Investors⁴⁵. The presented list includes 18 investments and 102 added values, which each fund has identified on the basis of its investment. Then, each added value was assigned by the author to at least one opportunity or threat related to this value (Table 2). In the next part of the study, the opportunities and threats were ordered and presented with the frequency of occurrence in the analyzed cases (Table 3). Detailed stages of the research were presented in Figure 2.

Figure 2. Stages of the research.



Source: own study.

⁴⁴ *Charter and Code of Conduct*, <<https://psik.org.pl/en/about-psik/charter-and-code-of-conduct>> (30.06.2021).

⁴⁵ *Case studies*, <<https://psik.org.pl/en/about-private-equity/case-studies>> (30.06.2021).

Table 2. Value-added of VC/PE investments in selected enterprises and assigned to their opportunities and threats.

enterprise	investor	industry	year of investment	year of divestment	opportunity*	threat*	the added value of the VC/PE fund
City Parking Group	Royalton	Business services	2009	2017	a, k	-	Support for the company's growth from 38,000 to 120,000 parking spaces with EUR 3.8 million in revenues and EUR 0.5 million in EBITDA to EUR 8.5 million in revenues and EUR 3 million in EBITDA.
					a, k	-	Financing accelerated growth.
					j, k	q	Strategic vision to create a platform for consolidation and expansion in Central Europe.
					a, k	-	Creation of the fastest growing parking operator in Central Europe, with annual EBITDA growth of 35%.
					b, k	-	Strengthening the board.
					g, k	-	Increasing operational efficiency.
Delicpol	Resource Partners	Food processing	2012	2017	a	q	Sale of an EBITDA-neutral subsidiary in the first 6 months of the investment.
					a, b, g, j, k	q	Successful acquisition and integration of two additional companies (2013 and 2015) struggling with liquidity problems resulting from overinvestment: by providing liquidity and realizing synergies, we were able to significantly improve the efficiency of these companies. Both companies were direct competitors of Delicpol in the production and sale of jelly biscuits, and their acquisition helped improve the Company's margin. The company Chojecki, the second acquisition target, also brought expertise in the production of American cookies and filled biscuits.

					a, k	-	Increase in sales and EBITDA from PLN 167.6 million and PLN 18.9 million in 2012 to PLN 466.5 million and PLN 38 million in 2016, respectively.
					e, j, k	q	Extending the product offer both by creating an R&D department and by purchasing companies with experience in these products. Delicpol has developed a promising series of new products with a high penetration potential for other private label categories, such as cereal cookies, American cookies, and gingerbread. Some of them have been introduced to leading discount stores, e.g. cereal (breakfast) cookies or gingerbread cookies.
					c	p	Introducing an ESOP program to settle the board's shares with the rest of the Company.
					a	p, q	Cash Generation: In mid-2015, we conducted dividend summaries that returned approximately 70% of the investment cost. Strong financial results allowed us to pay a dividend in the second half of 2016.
					i	-	The Exit Deal was nominated for Real Deals' of the Year CEE Award.
	Dino	Enterprise Investors	Consumer goods	2010	b, n, o	-	Building a corporate structure around the founder and his closest associates.
					a, k	-	Financing the expansion of Dino stores
					a	-	Optimizing the financing structure.
					i, k, l	-	Increasing the company's credibility in the banks opinion.
Dotcard	MCI	Electronic payments	2015/2016	2019	b	q	Strengthening the company's management board and supervisory board with experienced managers from renowned financial institutions (ex-Mastercard, ex-Visa, ex-PayU).

					j, k	q	Expanding the assortment offered in the rice wafer segment by introducing new flavour variants and mixes of cereals and convenience packaging.
					b	q	Introduction of an incentive system for key managers in the company.
home.pl	Value4Capital	Business services	2012	2015	b	-	Providing the management board with the initiative to expand the offer of services.
					b, g, i, k, o	-	Introduction of the highest-class standards in the field of corporate governance and reporting.
					h, j, k	q	Acquisition of a competitor to increase the scale of operations and further strengthen the company's market position.
					b, k	q	Centralizing operations in a modern headquarters and improving standards in the field of human resource management in order to more effectively attract and retain talented employees.
					a, b, g, k	-	Improvement of many operational aspects of the home.pl, thanks to which the company's profitability level exceeded the levels achieved by leading international players.
					b, c, k	q	Additional investments (TravelOne, Travelata) - support for mergers and acquisitions (M&A), also in the field of post-merger integration.
					d, f, g, k	-	Operational improvements - transfer of expertise on the digital economy.

Mykogen	Abris Capital Partners	Manufacturing/Agriculture	2012	2017	j, k	q	Expansion of activities: 1) expansion of the plant in Karszewo (Poland) from 60,000 tonnes of the annual production at the time of the takeover, up to 115,000 tons in 20 months; 2) installation of a compost packing line in Karszewo (Poland); 3) launching own production of mycelium in Villya (Ukraine), covering the entire demand of the plant and significantly reducing the cost of this raw material; 4) construction of a second production plant in Uman (Ukraine) with an annual capacity of 45,000 tons of phase 2 and 3 substrate.
					c, j, k	r	Mergers and acquisitions: Successful acquisition of Fungis, a direct competitor in Poland with an annual production capacity of 100,000 tones. The market share has doubled compared to the entry point.
					b	q	Appointment of two new members of the management board (CEO and CFO) as well as an independent member of the supervisory board.
					b, c	q, r	Building a solid financial control team from scratch; introducing detailed financial reporting.
					i, o	q	Strengthening corporate governance.
					b	q	Implementation of ERP software.
					i	q	Introducing a logo change and a new PR strategy.
					i, k, m	-	Creation of the undisputed market leader: the most innovative player in the waste management and energy recovery sector, very attractive to international strategic investors.
					d, k, m	q	Redefine group strategy: build a fully integrated group that turns waste into energy.
					a, k	q	Creation of new development opportunities: through additional Abris funding.

					i	q	Support for local fire brigades - the company provided financial support for the purchase of new equipment and for joint training.
					i	q	Support for local church communities and other charitable endeavours.
					i	q	Support for local governments, including on the occasion of the 700th anniversary of the city of Żnin and the reconstruction of the Battle of Mława, the first Polish battle of World War II.
					i	q	Organizational support and financing of an annual conference on the latest trends in the waste sector, including new technologies, regulations and challenges. The conference is attended by representatives of local governments, universities, industry experts and market participants.
Nowel managed by CVI Dom Maklerski	Bakery industry	2015	-	a, k	-	Optimization of the financing structure.	
				i, o	q	Introducing corporate governance.	
				j, k	q	Support in the analysis of strategic development options in Poland and abroad.	
				b, k	q	Strengthening the Supervisory Board with an industry expert.	
				j, k	q	Development of new products.	
OT Logistics	Krokus PE	2007	2015	j, k	q	Support in territorial expansion from Poland to Germany and Central and Eastern Europe.	
				j, k	q	Support in expanding the scope of business activities from the previously offered inland navigation to comprehensive logistics services.	
				b	q	Supervision over six acquisitions: DBR AG (German, direct competitor), Rentrans Cargo (freight forwarder), Rentrans Int. (rail freight forwarder), PHS (Baltic cargo port), C.Hartwig (sea freight forwarder) and BTDG (groupage port on the Baltic Sea).	
				b, k, n	q	Strengthening the management staff.	

					a	q	Diversification of the financing structure through corporate bond issues.
					a, c	q, p	Support in introducing the company to trading on the Warsaw Stock Exchange. The stock exchange debut provided OT Logistics with the capital necessary for further development.
					i, k, o	q	Implementation of corporate governance.
					a, g, k	q	Assistance in the field of asset optimization, including relocation of the company and sale of non-operating assets.
					i, o	q	Krokus implements best ESG practices (environmental, social and corporate governance regulations).
ProService	Highlander Partners	Business services	2012	2016	b, f, n	q	Building a strong management team and supporting the management board in carrying out a cultural change in the company (soft HR).
					k, m	q	Creation of a long-term development strategy.
					d, k	q	Investments in new technologies.
rankomat.pl	3TS Capital Partners	Online insurance aggregator	2010	2015	a, b, j, k, m	q	Defining the target business model adjusted to the local market and introducing changes in the company's management board.
					a, i, k, l	-	Improving terms of cooperation with insurers.
					i	-	In December 2013, Rankomat made its debut with a television advertising campaign, which turned out to be a great success and opened the way for further growth for the company.
					a, j, k, l	q	The company expanded its portfolio with products in the area of personal finance and other insurance and achieved profitability at the level of EBITDA. The process of selling shares and exiting the investment was initiated at the end of 2014 and met with great interest, both on the part of industry and financial investors.

					a, b, j, k, m	r	In mid-2015, 100% of the Company's shares were sold to Bauer Media GmbH. The fund played a key role in initiating the process and negotiating with selected investors. The fund realized an almost 6-fold return on invested capital reaching an internal rate of return on investment (IRR) at the level of 56%.
Velvet Care	Avallon MBO Fund	Diapers	2013	2018	a, b, d, k	q	Creating the basis for the development of an independent organization operating outside the structures of an international concern, including: introducing new brand identification and corporate visualization, building a purchasing department, restoring IT systems, optimizing costs and financing.
					j, k	-	Gaining the position of the market leader in the main product categories.
					a, k	q	Doubling of sales (from PLN 234 million to PLN 488 million) as a result of the introduction of new sales segments such as the private label channel for acquiring new export markets (DACH) and the development of new product categories under the Velvet brand.
					c, k	q, r	Joint venture with a German partner combined with expansion on the DACH markets.
					d, g, k	q	Implementation of development investments - a total of approx. PLN 250 million was invested in a machine park in 2013-2017, which allowed to double the production capacity and build the largest investment in the history of this company - a new paper machine.
Wirtualna Polska	Innova Capital	Communication, media	2014	2016	b	-	Building a "top league" management team.
					j, k	q	Connection of two internet portals, support for acquisitions and integration of 13 companies.
					b	q	Simplification and organization of the company's structure.

					j, k	q	Changing the company's strategy and business model, focusing on the video, mobile and e-commerce segments.
					a, k	q	Providing external financing for further development.
					a, c	q	Support in the process of listing the company on the stock exchange.
					a	-	Building a company with a market capitalization of over 1 billion PLN in 18 months.
Żabka	Mid Europa Partners	The retail trade	2011	2017	j, k	q	Acceleration of expansion: improvement of mechanisms enabling the opening of new locations, contributing to a significant acceleration of the pace of organic growth.
					i, k	q	Network repositioning: implementation of a strategy aimed at improving the perception of the brand by the customer (better quality, prices, assortment diversity).
					g, k	q	Internalization of logistics and optimization of the distribution process (opening of the fourth distribution centre in 2015).
					b	q	Support for the company's Management Board: appointment of new functions (CFO, COO, CMO) and strengthening of the Supervisory Board.
					b	q	Improve internal reporting and reporting systems during fund investments.
					b, c, j, k	q	Consolidation: creating and supporting the activities of an internal M&A team. Żabka took over 8 strong regional players, expanding the network by over 200 stores.

Source: own study.

* legend for letters defining opportunities and threats is introduced in Table 3

Table 3. Definition of opportunities and threats of VC/PE investments and the frequency of their occurrence in the analyzed cases.

Letter	Definition	The frequency of occurrence in the analyzed cases
opportunities		
a	financial support - granting capital by the fund and assistance in obtaining additional sources of financing (e.g. diversification of the financing structure through assistance in obtaining a bank loan, renegotiating existing agreements with banks and insurers, support in the process of listing the company on the stock exchange)	27
b	increasing the quality of management on many levels - e.g. managing people, company, processes, manufactured product or provided service	32
c	assistance in the field of law, taxes, accounting - e.g. in the case of corporate events such as Mergers and Acquisitions (M&A), Initial Public Offering (IPO) etc.	9
d	access to the latest technological developments in the industry	7
e	supporting research and development (R&D) activities in the enterprise	2
f	access to experienced specialists - fund employees	4
g	optimization of business processes resulting in increased operational efficiency	9
h	the ability to use the fund's contact database, which contains data of potential contractors, suppliers, customers and investors	2
i	increase in credibility and improvement of the company's image on the market – for example through PR and charity activities, environmental, social and corporate governance (ESG)	22
j	support for industry and geographic expansion of the enterprise	24
k	increasing the company's competitiveness	65
l	decrease in the risk of doing business	5
m	verification of the project by VC/PE experts	7
n	training of the company's employees	3
o	improving the company's organizational culture - e.g. by	7

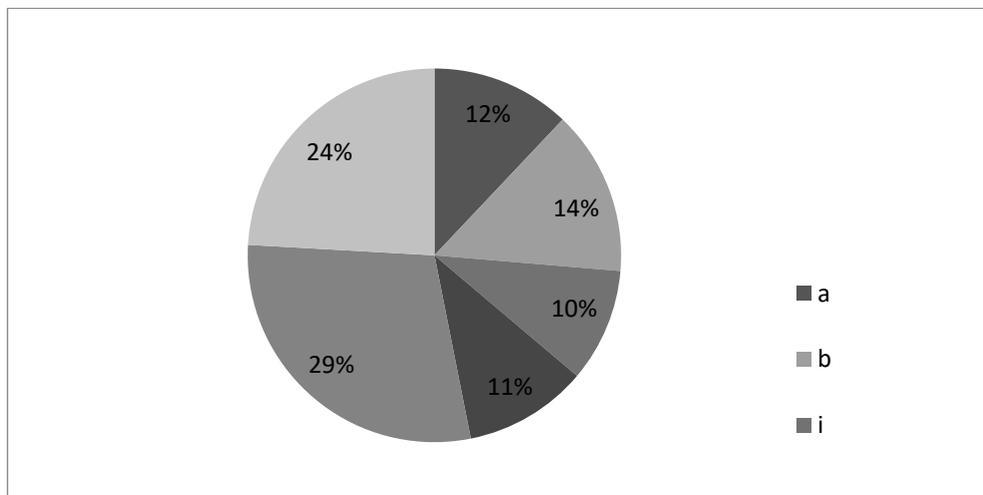
	building a corporate structure, implementing corporate governance	
threats		
p	the entrepreneur must share the profits and shares in the company	3
q	the entrepreneur has to hand over some of the decision-making power in the company to a new shareholder	71
r	disclosure of the company's competitive advantage (know-how) to unauthorized entities - e.g. fund employees, companies included in the portfolio of the VC/PE fund	6

Source: own study.

In the case of opportunities, the following values obtained the highest frequency (Figure 3):

- k – increasing the company's competitiveness (29%);
- b – improving the quality of management (14%);
- a – financial support (12%);
- j – support for industry and geographic expansion (11%);
- i – increase in credibility and improvement of the company's image on the market (10%).

Figure 3. Chances of VC/PE investments for enterprises and the frequency of their occurrence in the analyzed cases – percentage ratio.

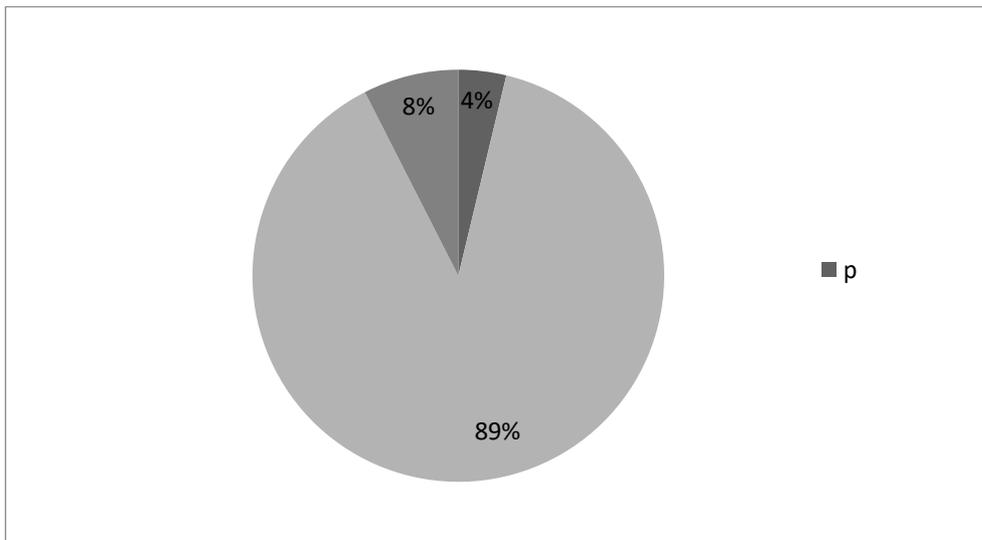


Source: own study.

It is interesting that financial support was present only in 12% of the analyzed added values, and non-financial support (e.g. increasing the company's competitiveness, improving the quality of management, support for industry and geographic expansion, increase in credibility and improvement of the company's image on the market) in 88%. Almost 1/3 of the opportunities were related to increasing the competitiveness of the enterprise (29%), and 24% of opportunities were in the 'other' category – which included for example assistance in the field of law, taxes, accounting, supporting R&D activities in the enterprise, access to experienced specialists.

In the case of threats, 3 main threats were identified (Figure 4), among which as much as 89% were related to the reduction of the entrepreneur's decision-making as a result of taking over the company's shares by the VC/PE fund. The next places include the risk of revealing the competitive advantage to unauthorized entities (8%) and sharing profits in the enterprise with a new shareholder (4%).

Figure 4. Threats to VC/PE investments for enterprises and the frequency of their occurrence in the analyzed cases – percentage ratio.



Source: own study.

At first glance, the opportunities associated with an investment by a VC/PE fund in an enterprise are much more than threats. However, the significance of any of the above-mentioned threats, if they occur in a given investment, will have a key impact on the functioning of the enterprise. Therefore, just as the fund carries out a detailed due diligence analysis of the

company before making a decision to invest, the company should also thoroughly analyze the decision to use the type of support such as a venture capital/private equity fund.

None of the analyzed cases was limited just to financial support. Thus, the analysis showed that VC/PE funds are actively involved in managing the enterprise and non-financial forms of support are very common.

The presented list of opportunities and threats is, as mentioned, based on selected examples, therefore more extensive research on VC/PE investments would be justified. It would also be interesting to present the opportunities and threats from the perspective of entrepreneurs who decided to use this form of support. It is worth noting that qualitative research in this matter will not take into account all VC/PE investments, due to the lack of availability of such data. This does not mean, however, that researchers should refrain from exploring this issue as studies would significantly deepen our knowledge of these still new forms of supporting enterprises.

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**MECHANISM OF THE CHANGE OF THE POLISH CURRENCY TO
EURO AND THE IMPLEMENTATION OF CONVERGENCE
CONDITIONS IN POLAND IN 2018-2020**

Abstract:

Fulfilling the European Union's accession treaty, Poland was obliged to adopt the euro currency, without a specified 'road map' for the implementation. The euro currency is the best example of progressive European integration, consisting of the complete liberalization of capital flows between the countries belonging to the monetary union. This phenomenon applies not only to banking services but also to financial services. A state that wishes to join the European Union must adopt many economic, political and social aspects to the standards existing in the EU. The alignment is aimed at ensuring the corrective actions taken by the candidate country within the EU's single market for goods, services, capital and labour. Therefore, before a Member State adopts the euro, it is forced to meet specific economic criteria, in other words, nominal and legal, known as convergence criteria. The purpose of this article is to assess the level of Poland's preparation for membership in the euro area, i.e. compliance with the established convergence criteria in 2018-2020. The article presents the mechanism of converting the Polish currency into the euro according to the rules in force in the EMU.

Keywords:

euro, single currency, convergence conditions, European monetary union, derogation, Exchange Rate Mechanism (ERM), Treaty on the Functioning of the European Union (TFEU), monetary criteria, fiscal criteria

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Introduction

Following the provisions of the accession treaty which is the basis for membership in the European Union (EU), also known as the Treaty of Athens, on April 16, 2003, Poland undertook to adopt the euro currency, without, however, specifying the accession plan. Poland is therefore an example of an EU Member State that has a derogation following Art. 122 of the Treaty establishing the European Community². Poland's commitments to participate in the Economic and Monetary Union (EMU) are the basis for assessing the potential opportunities and threats of implementing the single currency. The euro currency is currently used by 19 out of 27 EU countries. The single currency was introduced for non-cash payments and accounting settlements on January 1, 1999, and in the form of cash, it began to operate on January 1, 2002.

The euro currency is the best example of progressive European integration, consisting of the complete liberalization of capital flows between the countries belonging to the monetary union. This phenomenon applies not only to banking services but also to financial services. The moderate support for the implementation of the single currency in Poland illustrates the development of the perception of the balance of benefits and potential costs of currency integration in connection with the emergence of crises in the euro area and the institutional imperfections of the Monetary Union. This fact may suggest increasing the awareness of Polish entrepreneurs that for the benefits of adopting the euro it is necessary to fulfil the established conditions. They are related both to guaranteeing the stability of the euro area, as well as to the real convergence of the Polish economy and the obligation to manage resources related to international competitiveness. A state that wishes to join the European Union must adopt many economic, political and social aspects to the standards existing in the EU. The alignment is aimed at ensuring the corrective actions taken by the candidate country within the EU's single market for goods, services, capital and labour. A much more complex process of integration is the adoption of the common currency and joining the euro area because it is economic integration with other euro area members and requires much longer preparations. Therefore, before a Member State adopts the euro, it is forced to meet specific economic criteria, in other words, nominal and legal, known as convergence criteria.

² *Treaty on the Functioning of the European Union of Lisbon, amending the Treaty on European Union and the Treaty establishing the European Community, signed in Lisbon on December 13, 2007*, <<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:12007L/TXT>> (30.06.2021).

The purpose of this article is to assess the level of Poland's preparation for membership in the euro area, i.e. compliance with the established convergence criteria in 2018-2020. The article presents the mechanism of converting the Polish currency into the euro according to the rules in force in the EMU. The study was carried out with the use of several research methods. These include the (comparative-descriptive) analysis of national legal acts and literature on the subject, as well as the method of synthesis and deduction. The basic research method was the analysis of empirical material, literature review and inference.

Legal basis for the implementation of the euro in the European Union countries

The legal basis governing the functioning of the Economic and Monetary Union is the Treaty on the Functioning of the European Union of February 7, 1992³. This issue has been related to Poland since it acceded to the Communities, which is from May 1, 2004. This treaty was attached to the Accession Treaty, which was signed on April 16, 2003, in Athens. One of the main goals set for the EU is the establishment of an Economic and Monetary Union, which will ultimately only include one currency. This means that each Member State is obliged to adopt the common currency, which is the euro. Delors' 1989 plan was implemented, which envisaged the emergence of an EMU, providing a currency area that guaranteed:

- complete and irreversible currency convertibility;
- relaxation of capital transactions and complete integration of the financial market;
- removal of fluctuations in exchange rates and freezing of exchange rates.

The euro should be used as the currency of both the single financial market of the European community and as an international currency⁴.

Both monetary and exchange rate policies are uniform only in the countries belonging to the euro area. The aforementioned currency uniformity does not apply to the European Union countries with a derogation, i.e. the exclusion from full participation in the EMU.

Two types of derogation can be distinguished (Figure 1), i.e.:

- a protocol derogation, whereby countries joining the European Union have the right to join the monetary union at any time they declare. At the moment, it is only Denmark, because the United Kingdom, which

³ *Treaty establishing the European Community (consolidated version)*, <<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A12002E%2FTXT>> (30.06.2021).

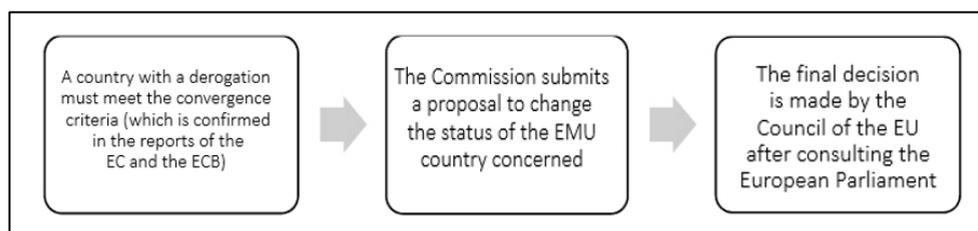
⁴ A. Kaciuba, *Mechanizmy funkcjonowania strefy euro*, Rzeszów 2016, p. 6.

has also reserved this right, has left the European Union;

- a treaty derogation according to which states must adopt the single currency, thanks to which they will obtain the status of the full membership of the EMU. These countries are committed to implementing far-reaching measures aimed at meeting the convergence conditions aimed at joining the euro area⁵.

Article 140 of the Treaty on the Functioning of the European Union also describes the obligations that are required to be fulfilled by the Member State concerned by the derogation. Article 140 also contains a description of the procedure for withdrawing the derogation, as presented in Figure 1. The Council of the European Union decides on the date of conversion of the national currency into the euro, after meeting the convergence criteria.

Figure 1. Derogation procedure.



Source: Own study based on: A. Kaciuba, *op. cit.*, p. 7.

In the case of countries with a derogation, the following provisions of the Treaty on the Functioning of the European Union do not apply:

- Art. 126 paragraph 9 and 11 relating to the high deficit procedure which is not fully applicable to such countries;
- Art. 127 sec. 1-3 and 5, relating to the single monetary and monetary policy performed within the European System of Central Banks, where countries with a derogation do not participate in it;
- Art. 128, including the powers of the European System of Central Banks to issue banknotes and coins;
- Art. 132, relating to the obligation to be subject to secondary law, established by the European System of Central Banks, aimed at the exercise of both its powers under the single monetary and monetary policy, and the delegated specific competencies;
- Art. 138, talking about the secondary legislation introduced by the

⁵ M. Gwóźdź-Lasoń, S. Miklaszewicz, K. Pujer, *Unia Europejska, Strefa Euro, doświadczenia i wyzwania ekonomiczne, techniczne, inżynieryjne*, Wrocław 2017, pp. 23-25.

Council regarding the single monetary policy;

- Art. 283 paragraph 2, relating to the possibility of candidacy and holding the position of the president, vice-president or member of the Executive Council of the European Central Bank by a citizen of a country belonging to the euro area⁶.

Due to the potential accession of Poland to the euro area, the following changes to the Constitution of the Republic of Poland should be introduced⁷:

- Art. 203 paragraph 1, referring to the control function of the Supreme Audit Office about the government administration, the National Bank of Poland, state legal persons, etc. Following EU law, the powers of this body will be limited only to the control of the National Bank of Poland in terms of operational activity, while not interfering with the scope of competencies allocated to the European System of Central Banks;
- Art. 227 paragraph 1, concerning the exclusive right of the National Central Bank to issue money, exercise monetary policy and shape the value of Polish money. Regarding joining the euro area, the first two powers of the National Bank of Poland must be changed to those assigned to the European System of Central Banks and the European Central Bank, while shaping the value of Polish money will be transformed into the responsibility of the National Bank of Poland for maintaining price stability;
- Art. 227 paragraph 6, relating to the powers of the Monetary Policy Council. Due to belonging to the currency community, this institution should be liquidated or transformed into an advisory or opinion-making institution⁸.

Criteria for participation in the Economic and Monetary Union

A state that wishes to join the European Union must adopt many economic, political and social aspects to the standards existing in the Union. This adjustment is aimed at ensuring correct actions taken by the candidate country within the EU single market for goods, services, capital and labour. A much more complex process of integration is the adoption of the common currency and joining the euro area because it is economic integration with other euro area members and requires much longer preparations. Therefore, before a Member State adopts the euro, it is forced to meet specific economic criteria, in other words, nominal and legal, called convergence criteria. The graphical division of the criteria is presented in Figure 2. Nominal criteria are set out in

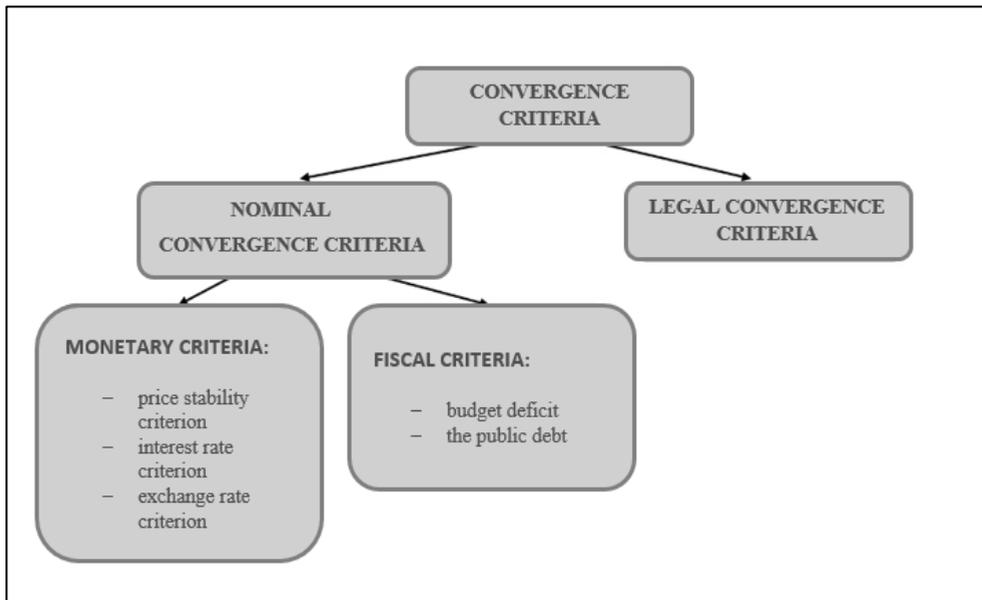
⁶ C. Kosikowska, *Prawo finansowe w Unii Europejskiej*, Warszawa 2008, p. 37.

⁷ *Constitution of the Republic of Poland of April 2, 1997* (Dz. U. Nr 78, poz. 483).

⁸ J. Barcz, *Prawne aspekty członkostwa Polski w Unii Europejskiej*, Warszawa 2009, p. 99.

detail in the Treaty on the Functioning of the European Union, Art. 140 and in Protocol No. 13 on the convergence criteria. The criterion of legal convergence forces the compliance of national laws of the Member States with Art. 130 and art. 131 of the Treaty on the Functioning of the European Union and the Statute of the European System of Central Banks and the European Central Bank⁹.

Figure 2. Criteria of convergence.



Source: Own study based on: M. Andrzejewska, I. Górczyńska, *Szanse i zagrożenia wejścia Polski do strefy euro*, Łódź 2015, p. 10.

The single currency and the single monetary policy in the euro area follow a specific legal and economic procedure. This procedure requires the fulfilment of many established macroeconomic factors and adjustment of legal regulations. When assessing the readiness of a given country to join the euro, the European Commission and the European Central Bank are the first to consider meeting the nominal convergence criteria set out in Article 121 of the Maastricht Treaty together with the protocol attached to it. The fulfilment of these criteria is an economic indicator that guarantees that a given country is

⁹ M. Andrzejewska, I. Górczyńska, *Szanse i zagrożenia wejścia Polski do strefy euro*, Łódź 2015, p. 9.

ready to participate in the common currency area. The nominal convergence criteria set out in the Maastricht Treaty concern:

- the size of the deficit and public debt,
- price stability,
- the level of long-term interest rates,
- invariability of the exchange rate.

The adopted convergence criteria are both a formal condition for joining the euro area and the foundation of macroeconomic stability, which are favourable conditions for long-term economic growth. The convergence criteria described above create the conditions for a 'healthy economy' characterized by low inflation, stable public finances and a normalized exchange rate¹⁰.

The nominal convergence criteria define both the reference values and the amplitude of the exchange rate fluctuations. Meeting the criteria allows for the recognition of the economy of a country newly admitted to the euro area as competitive and not a burden for other member states. The Maastricht convergence criteria do not, however, include several conditions relating to the theory of the functioning of optimal currency areas, and more specifically the diversification of production and the openness of the economy. The fulfilment of the above-mentioned conditions guarantees the full possibility of the country's accession to the EMU¹¹.

The European Commission and the European Central Bank have defined specific rules for assessing the convergence criteria. These principles ensure: consistency and compliance of criteria, rigid assessments, clarity and openness of verification, and unquestionable convergence¹².

The principle of consistency of criteria is characterized by the fact that all the required criteria should be met simultaneously, which also applies to the criteria for the periods in which the evaluations were developed. The next principle of equivalence holds that all criteria are equally important, so no strict system of hierarchy has been established regarding the performance and value of assessment. Restrictiveness determines that the assessment of the level of convergence, is based strictly adhered to rules and the required benchmarks are consistently enforced. As for the principle of transparency and openness, it guarantees the clarity of the verification procedures of countries in terms of the level of compliance with the convergence criteria. Nevertheless, the most important principle is the principle of the durability of convergence, under which the fulfilled convergence criteria confirm long-term macroeconomic stability¹³.

¹⁰ J. Borowski, *Polska i UGW: Optymalny obszar walutowy?*, Warszawa 2000, p. 23.

¹¹ K. Kopeć, *Mechanizmy funkcjonowania strefy euro*, Rzeszów 2016, p. 8.

¹² *Traktat o funkcjonowaniu Unii Europejskiej...*

¹³ J. Rus, *Mechanizmy funkcjonowania Strefy Euro*, Kraków 2016, pp. 56-57.

These criteria should be met by all Member States intending to join the optimal currency area. More criteria met increases the likelihood of a common economy operating properly. In their assumptions, the Maastricht convergence criteria do not apply to all conditions applicable in the theory of the optimal currency area. It concerns among others diversification of production, or openness of the economy. However, the most important condition for membership in the EMU is the transfer of the national currency to the euro using a nationwide referendum.

Assessment of Poland's fulfilment of convergence conditions in 2018-2020 in connection with its potential accession to the euro area

As of May 1, 2004, Poland is a full member of the European Union. The next stage of integration is membership in the Economic and Monetary Union, to which our country has committed itself during the negotiations on joining the European Union. Negotiations in this area began on September 30, 1999, and ended on December 7, 2002.

The adoption of the single currency by Poland may only take place when the domestic economy is stable and strong, and therefore the macroeconomic requirements of EMU membership will be met. The required criteria were set under pressure from Germany to protect the euro area economy. More specifically, the idea is to allow participation only in those countries that have a very good economic situation, which is similar to that of other euro area member states. The maturity of the economies of countries applying for EMU membership is assessed following the previously mentioned criteria relating to:

- inflation rate, which should not be more than 1.5 percentage points higher than the average inflation in the 3 countries with the lowest inflation rate;
- the state of the budget deficit, the value of which should not exceed 3% of the country's GDP;
- public debt, which should not exceed 60% of GDP;
- long-term interest rate – the rate should not be more than 2 percentage points higher than the average interest rates in the three countries with the highest price stability;
- official participation in ERM II¹⁴ – during the 2 years preceding the accession to the Economic and Monetary Union, the currency of a given country must be stable, i.e. its fluctuations cannot exceed the adopted framework, and the currency cannot be devalued at that time

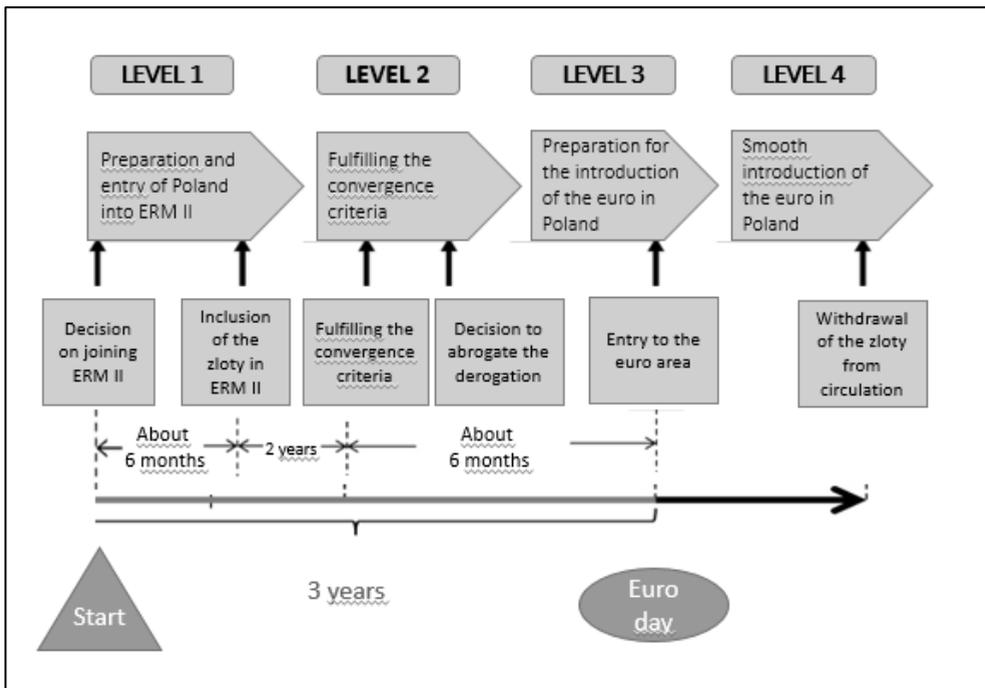
¹⁴ *ERM II – the EU's Exchange Rate Mechanism*, <https://ec.europa.eu/info/business-economy-euro/euro-area/introducing-euro/adoption-fixed-euro-conversion-rate/erm-ii-eus-exchange-rate-mechanism_en> (30.06.2021).

against other European currencies during this time.

The condition of the Polish economy is also assessed.

Choosing price stability under one of the cohesion criteria results directly from a few principles, and more precisely from the belief that low inflation determines sustainable economic growth, which affects the prosperity of the society. It also influences social conflicts and causes inequalities. In countries where the industry is well developed, achieving price stability becomes a priority. Domestic economists believe that Poland may adopt the common currency, the euro, but not yet. This situation may change due to the strengthening of the country's economy. Too quick adoption of the common currency may deteriorate the attractiveness of the domestic economy, which is based on low labour costs and wages, and the sharp rise in prices will not correspond to wage increases. The stages of introducing the euro in Poland are shown in Figure 3. The topic of costs and benefits after Poland adopts the euro will be discussed in detail in the next chapter.

Figure 3. Stages of euro introduction in Poland.

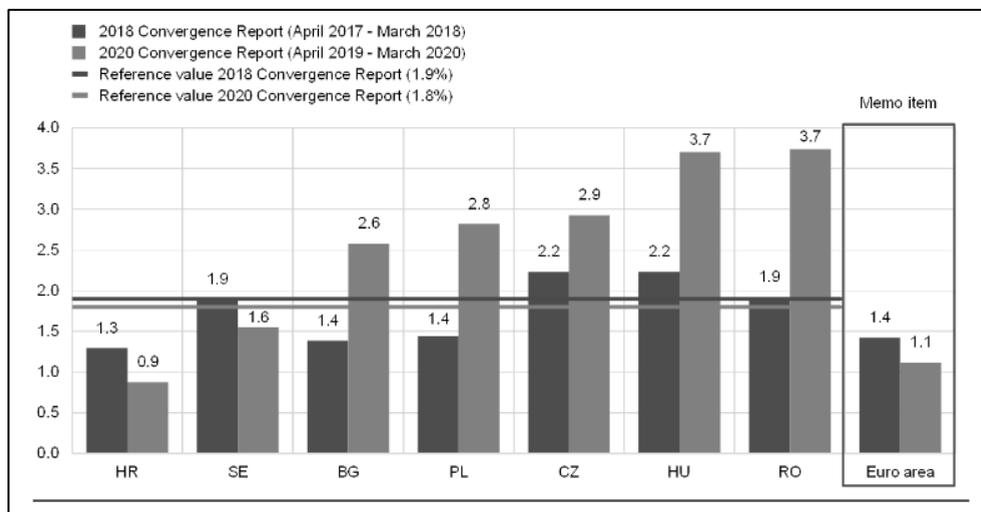


Source: Own study based on M. Andrzejewska, I. Górczyńska, *op. cit.*, p. 25.

According to the information included in the Report of the European Commission, in March 2020 the reference value of the price stability criterion

was 1.8%, while the reference countries were Portugal, Cyprus and Italy. At the same time, the HICP index in Poland oscillated at the level of 2.8%, thus it was higher by 1 percentage point than the reference value (Figure 4). In line with the forecasts of the European Commission, the HICP level in our country exceeded the reference value in the following months of 2020. The described trends also reflect the estimates of the Ministry of Finance. In October 2020, the average annual growth rate of the HICP index in our country was 3.5% and was 0.8 percentage points higher than the established reference value. The reference value was determined by the available data from the three European Union countries that were characterized by the most stable prices, Estonia, Ireland and Greece among them¹⁵.

Figure 4. HICP inflation.



Source: *Convergence Report*,

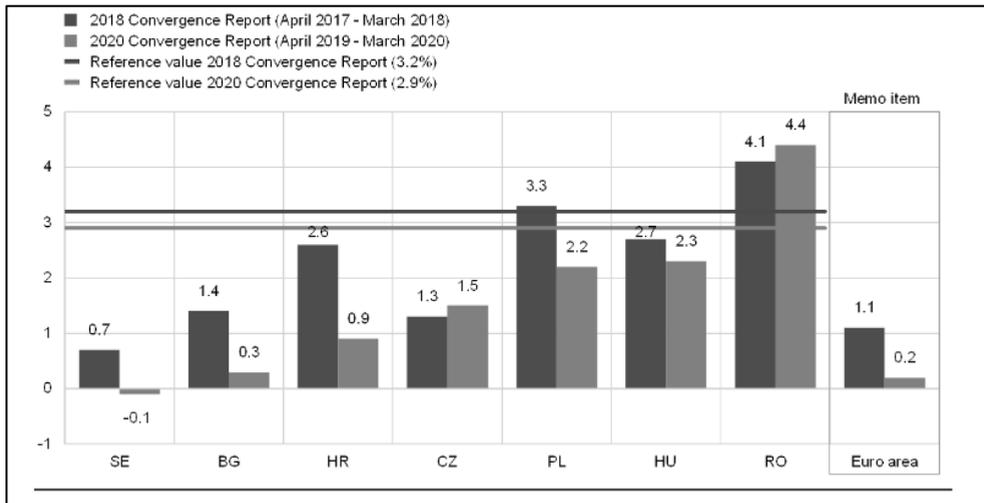
<www.ecb.europa.eu/pub/convergence/html/ecb.cr202006~9fefc8d4c0.en.html>, (02.06.2021).

Since the last published Report of the European Commission, the average nominal long-term interest rate in our country has decreased and in March 2020 it was 0.7 percentage points lower than the defined reference value of 2.9% (Figure 5). According to data prepared by the Ministry of Finance in October 2020, the average long-term interest rate in Poland in the last year was 1.6%, which was 1.1 percentage points less than the reference value of 2.7%. A

¹⁵ *Monitor Konwergencji z Unią Gospodarczą i Walutową*, No. 5, December 2020, <<https://www.gov.pl/web/finanse/monitor-konwergencji-z-ugw>> (30.06.2021).

decrease in long-term interest rates in 2020 was recorded in many European Union countries. This situation was directly influenced by the record low-interest rates set by both the European Central Bank and the central banks of the Member States. These decisions were the result of actions intended to protect the economies of the Member States in connection with the outbreak of the pandemic and the accompanying economic crisis¹⁶.

Figure 5. Long-term interest rates.



Source: *Convergence Report*,

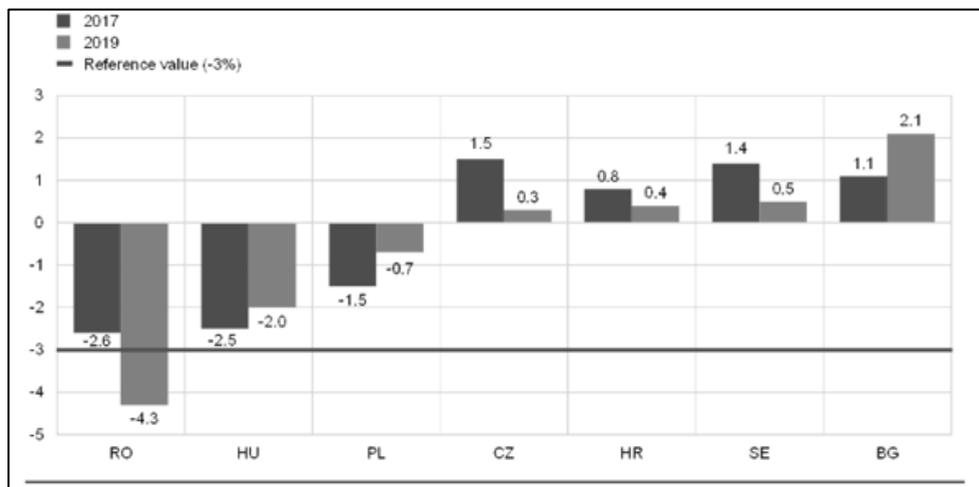
<www.ecb.europa.eu/pub/convergence/html/ecb.cr202006~9fefc8d4c0.en.html>, (02.06.2021).

Recently, Poland has not been subject to the excessive deficit procedure, which is synonymous with the fulfilment of the fiscal criterion. The deficit of the general government sector in our country in 2019 amounted to 0.7% of GDP, while the debt of the g. g. in 2019 it decreased compared to 2018 and accounted for 45.7% of GDP (Figure 6). Both values were below the reference values of 3% of GDP and 60% of GDP, respectively. In March 2020, due to the drastic economic slowdown caused by the epidemic, a general exit clause was introduced, which allowed the Member States to temporarily waive the recommendations of the Council of the European Union applicable to

¹⁶ D. Rosati, *Czy Polska powinna przystąpić do strefy euro?*, “National Economy. The Polish Journal of Economics”, No. 10, 2013, p.4.

budgetary policy, provided that this departure does not adversely affect financial stability public in the medium term¹⁷.

Figure 6. General government deficit.



Source: *Convergence Report*,

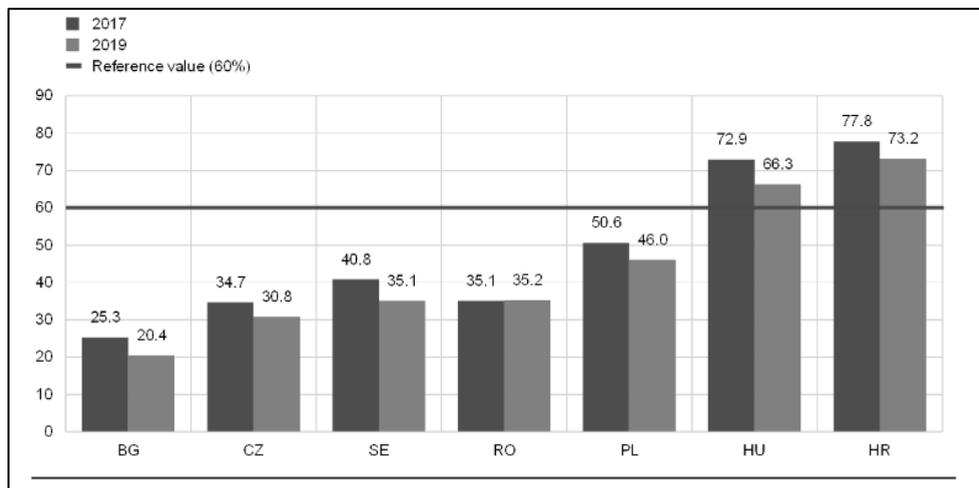
<www.ecb.europa.eu/pub/convergence/html/ecb.cr202006~9fefc8d4c0.en.html>, (02.06.2021).

The year 2020 brought a sharp increase in the size of the budget deficit to GDP, up to 8.9%, according to the EC's forecasts (Figure 7). The result of this situation is aid programs for the economy. The year 2021 will most likely bring similar results, so the return to the deficit of 3% of GDP may take up to several years. The same situation applies to public debt, because its value in 2020 will also exceed the level of 60% of GDP, and its further growth is expected in 2021. In this situation, Poland no longer meets the fiscal criteria. Moreover, the condition of price stability is also not met. The described situation postpones the possibility of joining the euro area for several years before the required levels of criteria are met. The position of economists on the subject of the profitability of Poland's membership in the euro area indicates that at present, during the crisis, this would benefit from this fact, as the country would be able to cope better, inter alia, through possible lower debt costs¹⁸.

¹⁷ S. Kawalec, E. Pytlarczyk, *Paradoks euro: jak wyjść z pułapki wspólnej waluty?*, Warszawa 2016, pp. 10-11.

¹⁸ *Okienko dla euro w Polsce zamknięte na wiele lat*, <<https://businessinsider.com.pl/finanse/makroekonomia/euro-w-polsce-nie-spelniamy-kryteriow-wejscia-do-strefy-euro/byps55f>>, (11.05.2021).

Figure 7. General government gross debt.



Source: *Convergence Report*,

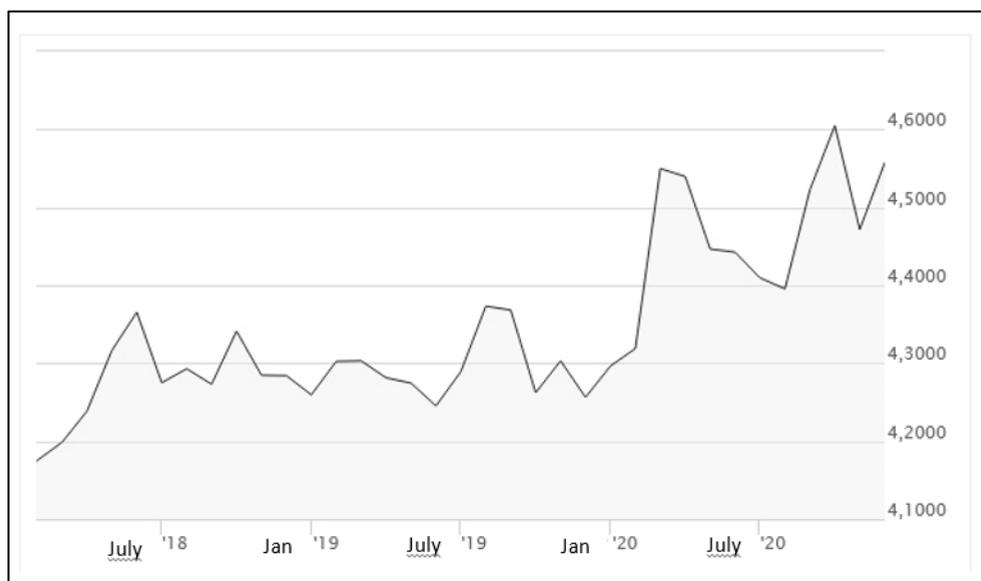
<www.ecb.europa.eu/pub/convergence/html/ecb.cr202006~9fefc8d4c0.en.html>, (02.06.2021).

Another exchange rate criterion obliges a member state to have its currency participating in the European Exchange Rate Mechanism (ERM2) for at least two years. During this period, the exchange rate of the national currency should be within the fluctuation range of +/- 15% against the established central parity and should not be subject to strong tensions, and above all, it should not be devalued against the euro currency¹⁹.

The criterion relating to the stability of the currency exchange rate leads to the obligation to include the domestic currency, i.e. the Zloty, in the ERM II Exchange Rate Stabilization Mechanism. This share must cover at least two years, and it is associated with the need to check the ability of the Zloty to stabilize within certain limits (Figure 8). The allowed range of fluctuations of market rates by the adopted mechanism is +/- 15% from the bilateral central rates. There is also a requirement that the currency must not be devalued while participating in ERM II. It was established to counteract the depreciation of the currency preceding the accession to the Economic and Monetary Union. The exchange rate criterion is not met as Poland does not participate in ERM II.

¹⁹ *Monitor Konwergencji z Unią Gospodarczą i Walutową*, No. 3, June 2018, p. 15, <<https://www.gov.pl/web/finanse/monitor-konwergencji-z-ugw>> (30.06.2021).

Figure 8. Euro exchange rate in 2018-2020.



Source: *Kurs EUR/PLN FOREX*, <<https://www.bankier.pl/waluty/kursy-walut/forex/eurpln>>, (12.02.2021).

In connection with the pandemic situation, a general escape clause (GEC) was launched in March 2020, which allowed countries in 2020 to temporarily depart from the EU Council's recommendations regarding budgetary policy, as long as it does not threaten sustainability of public finances in the medium term. May 20, 2020, was adopted by the report according to Art. 126 paragraph 3 TFEU concerning the planned excess of the reference value for Poland of 3% of GDP. The report concluded that the criterion was not met, but the excessive deficit procedure was temporarily suspended due to the current situation. In June, the Commission presented a report which noted that decisions in this area should not be taken under the conditions prevailing at the time. Decisions regarding changes in the deficit criterion will be made depending on the changing situation regarding the pandemic situation in the world²⁰.

The conversion of one's own currency into the euro is an exceptionally important and strategic decision leading to visible changes both in the economy and also for all market members, so there are many contradictory emotions among various social groups. This situation is fully understandable because it is not clear what will weigh on the balance of benefits and costs in the process of

²⁰ *Monitor Konwergencji z Unią Gospodarczą i Walutową*, No. 5, December 2020, p. 16, <<https://www.gov.pl/web/finanse/monitor-konwergencji-z-ugw>> (30.06.2021).

implementing the single currency, so one group welcomes changes, believing that this process is a reasonable consequence of joining the European Union.

Conclusions

In recent years, social support for adopting the euro in Poland has been highly volatile. Over time, since Poland's accession to the European Union, the degree of fulfilment of the convergence criteria by Poland was varied and mainly changed depending on the stability of the country's economic policy at a given time, and the events influencing and conditioning it. The sudden outbreak of the COVID-19 pandemic in 2020 had a very negative impact on the country's economy, thus moving it away from meeting any of the required criteria. Before the appearance of this long period of burden and difficulties for the state, Poland was slowly becoming more and more similar in terms of economic structure to other euro areas the Member States and fulfilled two of the four criteria related to price stability and the fiscal criterion related to the budget deficit and public debt.

The conclusions resulting from the adoption of the euro and its long-term functioning in other countries are diverse. How the new currency influenced individual countries depended on their actual economic situation, the size of the country, or the country's economic position in the international arena. Although the analysis shows that the euro was rather profitable in Germany, we can meet German economists with a strong rejection of the idea of the euro in Poland. Slovakia also performed quite well after the introduction of the euro, developing relatively better than its neighbouring countries. Among the analyzed experiences of three countries, Greece turned out to be in the most difficult situation after adopting the common currency. However, this was the result of a government fraud that was committed, so that the example of this country allows one to learn from mistakes and avoid distorting the statistical data, lest it has the same consequences as in the case of Greece. Therefore, the experiences of states suggest that, first of all, to achieve an appropriate economic level that will be in line with the required convergence criteria, but also to properly prepare the citizens of the country for such a great change.

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**CAN THE BOOST OF CRYPTOCURRENCY RESULT IN ALTERING
THE WAY HOW THE TRADITIONAL NEOLIBERAL ECONOMICS
OPERATES IN TERMS OF SHIFTING AND ENHANCING THE
DEMOGRAPHICS OF THOSE WHO USUALLY GAIN THE PROFIT?**

Abstract:

Defining the phenomenon of cryptocurrency, first of all, the paper attempts to explain the reasons why we have chosen to address specifically this topic taking into account primarily the very special current cryptocurrency boom that intensified significantly during and in the post-COVID-19 pandemic times almost all over the world. While discussing quite a compound nature of the popularity of cryptocurrencies associated predominantly with the products in this case – consumption of the hardest attainable resource ever – time, we also analyze such other determining factors for the above-mentioned boom or boost as is, for example, the role of the systemic crisis. Separate examination of the correlation between the COVID-19-and post-pandemic crisis and the boost of cryptocurrencies is provided as well in parallel with comparing this story with the similar one involving the global financial and economic crisis along with the resulting global recession of 2008-2010 on one hand, and the emergence of cryptocurrencies as a certain potential solution to the crisis on another. To respond to the major question of the paper, and measure whether the boost of cryptocurrency can cause shifting the way of how the traditional neoliberal economics functions through the essential changes and increase in the demographics of the usual profit gainers, we try to consider cryptocurrency’s hypothetical capability to substitute the cash eventually, as well as based on different surveys – categorize those who bought cryptocurrencies in the past, or is purchasing now or plans to do so in the nearest future.

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Keywords:

Cryptocurrency; boom or boost of cryptocurrency; COVID-19 pandemic; neoliberal economics; demographics of profit gainers; “crypto-uncertainty”

What is a Cryptocurrency?

According to Investopedia, “A cryptocurrency is a digital or virtual currency that is secured by cryptography, which makes it nearly impossible to counterfeit or double-spend. Many cryptocurrencies are decentralized networks based on blockchain technology – a distributed ledger enforced by a disparate network of computers. A defining feature of cryptocurrencies is that they are generally not issued by any central authority, rendering them theoretically immune to government interference or manipulation.”²

Why a Cryptocurrency?

Particularly in the COVID-19 pandemic times, there has been observed a significant increase in the popularity of cryptocurrencies and in the number of people involved in investing and trying them out. We can freely call such a phenomenon a boom. This can be most probably explained by the greatly evident fact that a lot more people than during the pre-COVID period who stayed and still stay home working, studying, or leading the majority of their activities online, could simply afford to experiment with new deals, ventures, hobbies, etc., and taking into consideration much more flexibility with the daily routine and regime often, certainly depended first of all on the nature of jobs and/or other responsibilities these people are entitled to generally perform, but keeping also in mind the situation with the significantly reduced spending and minimal economic and/or financial turnovers in the conditions of quarantine lasting for more than a year as of now, a lot more ordinary public started to try out relatively new and much captivating sphere as is cryptocurrencies. The gambling moment should not be excluded here, especially thinking in parallel of the widespread mania with the computer or video games. For many, such interest and enthusiasm towards cryptocurrencies have been determined by at least the perceived opportunity for winning extra money when purchasing, exchanging and playing with hyper volatile cryptocurrencies frequently. Another factor is also a very serious circumstance connected with in fact the systemic crisis caused by the global pandemic in this case that in a situation of the lack of local and worldwide control, in the condition of losing control over

² J. Frankenfield, *Cryptocurrency*, Investopedia, <<https://www.investopedia.com/terms/c/cryptocurrency.asp>> (16.03.2021).

the developments, eventually broke down the trust of the citizenry towards their governments and international order as well, which gave impetus to the larger amounts of people globally to seek alternative and more decentralized ways of getting income that wouldn't depend on centralized systems and governments. Quite valid statistical data suggests that actually in less developed or developing countries, where, in general, there are a lot of problems with the public trust towards the governments and weaker systems from the perspective of democracy along with the lesser economic and other kinds of stability, a lot more portion of people became interested in investing in cryptocurrencies even with comparatively lesser amounts of money. These countries keep leading in the world's top 15 countries with the highest adoption of cryptocurrencies³.

The history of the development of cryptocurrencies also suggests additionally here that their inception in 2008, the year when the global financial and economic crisis eventually resulting in the worldwide recession started, has not been accidental. Cryptocurrencies emerged to alter and improve traditional financial and economic systems and institutions affected and brought almost to the verge of collapse by the crisis as has been deeply believed by many. Significantly, consumers also sought to explore new ways and effectively execute economic transactions with high and/or much higher transparency and accountability – thanks to the decentralized and far securer blockchain system. Similarly to the situation with the global financial and economic crisis and resulting global recession of 2008-2010 and the emergence of cryptocurrencies as a certain potential solution, COVID-19 and its devastating impacts in every dimension of human existence and functionality, including perhaps most dramatically in the socio-economic systems, but also politics, culture, etc., is discussed in the context of a variety of many different crises and still anticipated severe recessions in the post-COVID era, among which those crises and recessions of the economic and financial nature are once again – especially critical in the sense of having decisive and determining power, can be quite fairly regarded as a new and another trigger for upcoming yet, sometimes even revolutionary changes and advancements in technology, science, and business, but specifically focusing on cryptocurrencies and their multifaceted development.

Cryptocurrency's Potential to Substitute the Cash?

Even though it is very hard to make some solid predictions in advance, especially in such a period of 'crypto-uncertainty' if I may use this kind of a

³ *Share of respondents who indicated they either owned or used cryptocurrencies in 55 countries worldwide in 2020* [in:] *Cryptocurrency adoption in 55 different countries worldwide 2020*, <<https://www.statista.com/statistics/1202468/global-cryptocurrency-ownership/>> (30.03.2021).

term to point to a relatively short time that has thus far passed since the inception of cryptocurrencies in 2008 – till their supposedly forthcoming full-scale development, mainstreamization, and quite probable and anticipated eventual regulation by governments, central banks, etc. However, while constantly and unavoidably thinking of the parallels with the emergence of the Internet, its revolutionary evolution since the 1990s, and of transforming its functionality from exclusively academic domain to cover almost each and every sphere of human life and activity, all of this suggests envisioning the overall expansion at least of the role of cryptocurrencies, which even under the regulatory involvement from the part of governments and central banks might not necessarily be limited to the governmental or central bank digital currencies (CBDCs), and there exists a likelihood that so-called private crypto assets would keep functioning as well. We could bring here already not quite a unique example of the existence of different governmental websites, which does not exclude their free and normally unlimited coexistence with the endless number of the world citizens' personal, business, and/or a great variety of websites working for diverse purposes and initiatives.

According to many professional and popular opinions, among which I would particularly distinguish the ones we hear from such a gigantic worldwide bank and actor in the field of global finances as is Deutsche Bank - a German multinational investment bank and financial services company, how much contradictory it might not sound from this kind of institution, i.e. bank, "Until now, cryptocurrencies have been additions, rather than substitutes, to the global inventory of money. Over the next decade, this may change. Overcoming regulatory hurdles will broaden their appeal and raise the potential to eventually replace cash."⁴

Who is Buying Cryptocurrencies?

According to Statista⁵, the global user base of cryptocurrencies increased by nearly 190% between 2018 (35 million) and 2020 (101 million). This data is based on the information gained from trading platforms and wallets. Even though the increase in demographics might have been caused by a rise in the number of accounts increased by 37%, as well as by improvements in identification, and despite more accounts in exchanges or wallets became systematically linked to an individual's identity, which made it easier to estimate the minimum user numbers associated with accounts on each service

⁴ *Imagine 2030: The decade ahead*, Deutsche Bank Research, Konzept # 17, 2020, p. 8.

⁵ *Number of identity-verified cryptoasset users from 2016 to the 3rd quarter of 2020 (in millions)* [in:] *Estimate of the number of cryptocurrency users worldwide 2016-2020*, <<https://www.statista.com/statistics/1202503/global-cryptocurrency-user-base/>> (30.03.2021).

provider, in our opinion, the COVID-19 Effect needs to be taken into consideration separately.

To illustrate the general shift in demographics of the cryptocurrency buyers before and after the global pandemic, I will provide here the results of two studies at least about the US customers.

Before COVID-19. In 2018, Finder.com surveyed 2,001 American adults to examine who had been buying cryptocurrencies and found that just under 8% owned them. According to the survey, men were more than twice as likely to own a digital currency than women, and that the largest reason for not owning one was a perception that they didn't need to. Bitcoin was the runaway 'winner' with 5.15% of people owning it followed by Ethereum at 1.8% and then Bitcoin Cash at 0.9%. Millennials (about ages between 22 and 37) had a 17% ownership rate, Gen X (about 37 to 55) were at a bit less than 9% and Baby Boomers were just over 2%⁶.

After COVID-19. The recent Cornerstone Advisors' study revealed that 15% of American adults now own some form of cryptocurrency – a little more than half of whom invested in cryptocurrency for the first time during the first six months of 2020. On average, these new investors obtained roughly \$67.5 billion in cryptocurrencies, roughly \$4,000 per person. The self-reported value of cryptocurrencies like Bitcoin and Ethereum for Americans who owned these assets before 2020 is about \$111 billion, or close to \$7,000 per person⁷.

The demographical analysis distinguishes the following dominating groups among the cryptocurrency buyers: 1) High income, well-educated men, 2) Millennials and Gen Xers, and 3) Bank of America customers⁸. This data seems quite logical, understandable, and nothing surprising can be found here taking into account more or less traditional and major social characteristics of the crypto investors. However, the new and evident trend observed during the global pandemic period is the increase in the number of these buyers.

Interesting is the following statistics as well: "44% of Americans who have already invested in Bitcoin and other cryptocurrencies said that their financial health is 'much better' since the beginning of the Covid crisis. That's in contrast to just 5% of all other US consumers."⁹

In differ from the previous group of crypto holders, the first-time investors prove to change up the financial institutions they do business with. According to the same study, when Apple Cardholders only comprise 5% of all credit card

⁶ V. Ng, *Why haven't we all bought cryptocurrency yet*, <<https://www.finder.com/why-people-arent-buying-cryptocurrency>> (30.03.2021).

⁷ R. Shevlin, *The Coronavirus Cryptocurrency Craze: Who's Behind The Bitcoin Buying Binge?*, <<https://www.forbes.com/sites/ronshevlin/2020/07/27/the-coronavirus-cryptocurrency-craze-whos-behind-the-bitcoin-buying-binge/?sh=7ab19f212abf>> (30.03.2021).

⁸ *Ibidem*

⁹ *Ibidem*.

customers, among those that do have the card, 47% own some form of cryptocurrency – two-thirds of whom purchased crypto in 2020¹⁰.

The most striking is the demographics of the next wave of investors. The 11% of Americans who plan to invest in Bitcoin and other cryptocurrencies are sufficiently different from the current set of investors, they are:

- 1) Women (Currently, they only make up 22% of the cryptocurrency investors, however in the next wave of investors, they account for 35% of the total);
- 2) Minorities (African-American and Hispanic consumers comprising 28% of all Americans, account for 23% of the current crypto investors. Among those that anticipate investing in the next 12 months, 37% are from these two ethnic groups);
- 3) Younger and older (Just 6% of Gen Xers and Baby Boomers already have cryptocurrencies. In the next wave of investors, this number increases, specifically, 17% are Gen Xers and 11% are Baby Boomers);
- 4) Less educated (Among current crypto investors, just 18% have not earned at least an Associate's college degree. Among the consumers expecting to invest in cryptocurrencies in the next 12 months, that percentage rises to 36%)¹¹.

And one more important specificity is the fact that among the next wave of investors, just 30% consider themselves to be 'very financially literate', in comparison to 54% of those who already hold cryptocurrencies¹².

Conclusion

As the data shows and we observe particularly in the COVID-19 era, the so-called Cryptocurrency Craze illustrates the increasing involvement of a larger public from all over the world and even more from the developing countries. These people invest in cryptocurrencies that are characterized by high volatility and assessed by many professionals and practitioner financiers as a risky and greatly speculative venture. It is still very early to derive solid conclusions and provide any stable predictions in this regard as so far we are in the process of the active evolution of cryptocurrencies and the system hasn't been established yet. Governments and some central banks started to adjust to the ongoing changes and develop their alternative tools and mechanisms, or attempt to regulate independent, private, and decentralized cryptocurrencies. At the same time, we are witnessing an obvious shift in the demographics of those who have already benefitted or are to gain profit from investing in cryptocurrencies, thus step-by-step impacting and

¹⁰ *Ibidem.*

¹¹ *Ibidem.*

¹² *Ibidem.*

potentially changing the traditional statistics of those benefitting eventually from neoliberal economics. The surveys discussed in the article¹³ still only partially show such a shift, especially while categorizing the crypto buyers, first of all yet mentioning – ‘high income, well-educated men’ along with other groups. The meaningful changes though are already depicted and projected in connection with the next wave of investors, which to our belief tend to keep an even more expanding trend involving larger parts of an ordinary population. This might mean substantial future alterations to the whole essence of neoliberal economics, the way how it operates, and for whom. Whether such kind of inclusion of the middle-income people and less developed countries might eventually mean the greater transformation of the neoliberal ideology and practice to the extent of its death, is a very critical question. In any case, we anticipate the change of neoliberal economics in terms of how it operates, for whose benefit and profit, demographics of these people, and presumably also shifts in the social classes of those beneficiaries. However, we should not forget that the major purpose of neoliberalism and neoliberal economics, i.e. constantly gaining profit, and as much as possible, in these contemporary processes of the Cryptocurrency Craze not only persists to remain unchangeable but even more evolves to absorb everything around, reaching even more and more layers of people and spreading in a way just like the global pandemic itself. Whenever the demographics of the profit gainers are democratized though, even in the era of the Internet and the overall decentralization, globalization, and the technological boom, this already means something very special and worth analyzing in terms of examining the significant changes in the functionality of the neoliberal economics. It might not mean an existential crisis for the neoliberal ideology and economics still, but more its great ability to almost permanently (at least so far) adjust to continuously changing realities, as well as the remarkable potential for flexibility that is characteristic so astonishingly for the given system of the contemporary capitalism. Apart from all of this, certainly, it all may depend first of all on the success of cryptocurrencies per se - how much they would be maintained and developed more, kept decentralized eventually despite already visible attempts of the governments and central banks for regulation, and whether this, this system remains to be as accessible to the wider public in the end as it currently is. This can freely apply to the broader availability not only of cryptocurrencies for the ordinary public but also of the stock market as well, once again - thanks to the Internet, etc.

¹³ R. Shevlin, *The Coronavirus Cryptocurrency Craze: Who's Behind The Bitcoin Buying Binge?* Forbes Media LLC, 27.07. 2020, <<https://www.forbes.com/sites/ronshevlin/2020/07/27/the-coronavirus-cryptocurrency-craze-whos-behind-the-bitcoin-buying-binge/?sh=7ab19f212abf>> (30.03.2021)

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LABOUR MARKET IN POLAND IN THE CONTEXT OF CORONAVIRUS SARS-COV-2

Abstract:

This study aims to analyze and assess the impact of the economic crisis on the labour market in the context of the SARS-CoV-2 coronavirus. To verify the main hypothesis and research questions, apart from qualitative research, a quantitative own study and a study on a group of four experts – HR Business Partners were also conducted. The study used the Analytical Hierarchical Process (AHP), which is one of the multi-criteria methods of making decisions. The working model most effective for companies, selected based on own research, was compared with the results for a group of experts. The analysis of the existing literature, reports and research allowed for the assessment of the impact of the economic crisis on Poland and the expansion of the spectrum of the analyzed problem relating to the choice of the most effective model of work for companies.

Keywords:

AHP, coronavirus, economic crisis, labour market, remote work

Introduction

The economic crisis caused by the SARS-CoV-2 coronavirus is one of the biggest crises the global economy will have to face. It affected both weakly developing countries and the world's largest economies. It influenced many areas, including the situation in the labour market. The outbreak of the pandemic showed us what the labour market may look like in the future. The

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percentage of companies that introduced solutions based on automation processes has significantly increased. The approach to leadership has also changed, as company leaders had to learn to manage crises and quickly adapt to new changes. On the other hand, deepening the knowledge and acquiring new skills has become a key element of the employees' survival in the labour market.

The study aims to select the best work model for companies in Poland, taking into account the costs of introducing remote work. During the pandemic, workplaces that had such an opportunity completely switched to remote work, which had not been so popular so far.

The pandemic attack had a large impact on the Polish economy, thus interrupting the socio-economic progress that had been sustained for several years. Many irreversible changes took place in the labour market, to which both employees and employers had to adapt. The pandemic accelerated, above all, the processes of automation and digitization that had been going on for years. The employer's approach to the functioning of companies in the remote and hybrid work models has also changed. The following hypothesis was adopted in the study: the coronavirus pandemic significantly changed the functioning of the labour market. The article poses the following research questions:

- Has the pandemic affected the number of liquidated positions?
- Has the pandemic changed the attitudes of employees and employers to remote and hybrid work?
- Has the outbreak of the pandemic affected the number of job offers published by employers?
- Has the pandemic changed the employee's attitude to change jobs?
- Has the pandemic influenced recruitment processes?

The verification of the hypothesis and research questions was carried out by analyzing the literature and research and reports on the economic crisis in the context of the SARS-CoV-2 coronavirus.

The economic crisis in economic theory

The literature on the subject does not provide an unambiguous answer that would explain the cause of economic crises. The reasons include, among others, the imperfection of economic theories and changes taking place in the economy – both at the national level and around the world². It is also worth remembering that each crisis has different causes. Table 1 below shows that the views on the causes of crises differed depending on the period of the crisis.

² K. Piech, *Cykl koniunkturalny i kryzysy gospodarcze – przegląd keynesowskich i współczesnych teorii ekonomicznych*, „Studia i prace, Collegium of Management and Finance, Scientific Journal”, No. 142, 2002, p. 97.

Table 1. Selected views on economic crises in the context of the theory of business cycles.

School	The cause of the crisis	Anti-crisis policy
Mercantilism: Thomas Mun, David Hume	the changes in the real product are influenced by changes in the quantity of money	supporting foreign trade
Physiocrats: Francois Quesnay	state regulation of trade is an obstacle to economic growth	laissez-faire as a policy leading specifically to the development of agriculture
The classics: Adam Smith, David Ricardo	state interventions	free market
Thomas Malthus	insufficient consumption	increasing consumption by non-producers (teachers, officials, landowners)
John S. Mill	oversupply due to credit constraints due to pessimistic expectations of economic circles	wait for the prices to adjust
Karol Marks	technological cycle, disproportionality crises, long-term decline in the rate of profit	departure from capitalism in favour of socialism and then communism
Marginalists	declining marginal productivity	wage reduction
Michał Kalecki	the policy of balancing the budget under pressure from the 'industrial leaders' during the boom period	the policy of expansion of state expenditure
Alfred Marshall	excessive credit expansion	credit control in boom

	during the boom period	times, risk insurance in a recession
John M. Keynes	insufficient aggregate demand (demand shock)	stimulating aggregate demand through expansionary monetary and fiscal policies, and an increase in state spending
Post-Keynesians	changes in investment outlays	demand regulation (income policy)
Monetarists	monetary disruptions (excessive money supply growth)	passive stabilization policy of monetary aggregates
Neoclassicals	unexpected, too restrictive monetary policy	stable and credible monetary policy
School of the political business cycle	national elections	receivable from the central bank, introduction of a floating exchange rate
The school of the real business cycle	supply shocks (mainly technological) through investments; slowing productivity growth	no stabilization policy
The New Keynesian School	supply and demand shocks (mainly), recessions are deepened by price and wage rigidity and risk aversion	stimulating demand through monetary policy, eliminating rigidity
Austrian school	State intervention to improve the economic situation through (excessive) credit expansion) ‘artificial prosperity’)	no interventionism, leaving the economy to itself, counteracting a crisis during a boom period

Source: K. Piech, *op. cit.*, pp. 107-108.

In the literature on the subject, the crisis is usually presented by examining its causes, while negating the current economic reality. This is an accurate

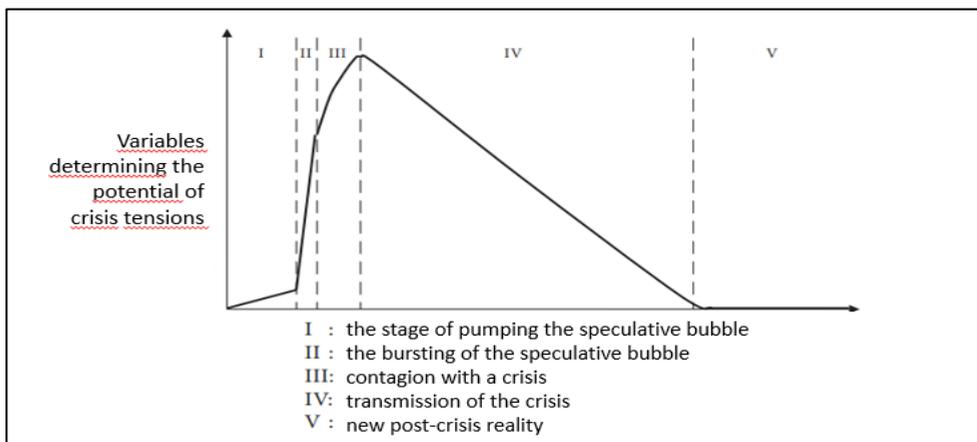
depiction of the nature of this phenomenon, as it shows all the irregularities and dysfunctions of the economy. Crises also end certain stages of economic epochs, which gives rise to a sense of the need to build a new reality and look for more effective solutions, both in the regulatory and institutional spheres.

The crisis in the light of the concept of the crisis life cycle

The constantly progressing globalization processes are the main factor shaping the world economy. In recent years, they have gained particular importance, strongly influencing both the structure of the entire economy and its sectors. The concept of globalization can be understood as the process of merging individual states and economic structures, which leads to the unification of the economy on a global scale. The phenomenon of globalization causes that the administrative role of the state is increasingly reduced, an example of which may be the flow of goods, services, capital and people³. This means that individual economies of countries are globalized or open.

To build an effective strategy for counteracting economic crises, it is necessary to make a diagnosis that allows determining the stage of the crisis. Thanks to the diagnosis, we can notice individual phases and changes and estimate the potential of the phenomenon. Figure 1 below shows the stages of the crisis life cycle.

Figure 1. Stages of the crisis life cycle.



Source: Own study based on P. Komorowski, *Przebieg kryzysu gospodarczego w cyklu życia*, [in:] R. Bartkowiak, P. Wachowiak (eds.), *Wiedza i bogactwo narodów. Kapitał ludzki, globalizacja i regulacja w skali światowej*, Warsaw 2003, p. 282.

³ W. Morawski, *Fale globalizacji i globalne rządy. Master of Business Administration*, Warsaw 2009, pp. 22-32.

In the first stage, there is a dynamic accumulation of crisis-generating factors. This is called inflating a speculative bubble. When the bubble bursts, the uncontrolled spread of the effects of the explosion begins. During this stage, crisis processes hit individual economies with varying degrees of severity. Local threats, therefore, depend on previous internal conditions. The phenomenon of a crisis, however, always comes as a surprise. Risk assessment is usually underestimated as growth projections are based on projections. This phase is characterized by a short period and has tremendous destructive power. The transmitting crisis shocks are referred to as the ‘transmission mechanism’ or the effect of ‘contracting crisis phenomena’. They describe the undesirable consequences of economic crises. The following areas can be distinguished among the dependencies of crisis processes;

- transmission or infection channels;
- the speed of transfer of crisis processes;
- the size of the phenomenon in terms of territories⁴.

State stabilization policy

Minimizing the effects of economic crises by the state takes place through the application of appropriate policies, including, inter alia, fiscal and monetary policies of an expansionary or restrictive nature. All activities undertaken by state bodies within the framework of the above-mentioned policies are referred to as the state stabilization policy. These activities boil down to reducing fluctuations in the business cycle or making adjustments in its normal course⁵.

Fiscal policy, also known as budgetary or tax policy, is defined in the economic literature in various ways. One of the definitions states that it is “the use of government expenditure and revenues to achieve specific goals, especially stabilizing the economy, by counteracting cyclical fluctuations and limiting unemployment and stopping price increases”⁶. David Begg, on the other hand, defines fiscal policy as a set of government decisions on spending and taxes aimed at keeping production close to its potential level⁷.

There are two types of fiscal policy, i.e. expansionary fiscal policy and restrictive fiscal policy. The former is used in the period of depression or economic downturn, while the latter is used in the period of economic expansion.

⁴ A. Nosek, A. Pietrzak, *Efekt domina, czyli międzynarodowa transmisja kryzysów – na przykładzie współczesnego kryzysu finansowego*, [in:] W. Michalczyk (ed.), *Wybrane problemy gospodarki światowej pierwszej dekady nowego wieku*, Wrocław 2009, pp. 84-85.

⁵ R. Barczyk, M. Lubiński, *Dylematy stabilizowania kultury*, Poznań 2012, p. 9.

⁶ K. Markowski, *Rola państwa w gospodarce kapitalistycznej*, Warsaw 1989, p. 3.

⁷ D. Begg, *Makroekonomia*, Warsaw 1992, p. 74.

In the case of an expansionary policy, the state increases expenditure and reduces taxes, which stimulates the economy and increases the gross domestic product. On the other hand, conducting fiscal policy comes down to the fact that the state reduces expenses and increases taxes, which reduces the deficit and slows down the economy⁸.

It can be noticed that, in the theory of public finance, the views of economists on the goals and forms of fiscal policy differ. According to the Keynesian school, increasing aggregate demand both increases production and reduces unemployment. On the other hand, monetarists and representatives of the new classical economy believe that fiscal policy should not lead to the phenomenon of a budget deficit. Improving the economic situation and increasing employment thanks to an expansionary fiscal policy occurs only in the short term, and thus may not contribute to the growth of aggregate demand at all⁹. According to them, in the long run, the application of this policy leads to an increase in inflation, which is an undesirable phenomenon.

Conducting an active fiscal policy is associated with certain difficulties, among which can be mentioned¹⁰:

- time delays – the government has delayed data on the current state of the economy;
- effects stimulated in autonomous demand – making changes in government expenditure also affects other components of consumption, such as consumption and investment;
- uncertainty – the value of the multiplier is calculated using historical data and it is extremely difficult to forecast the economic activity of private entities regarding future investments;
- political constraints – the policy pursued by the state may meet with resistance from the public, which may lead to protests. Expansive fiscal policy can also be used by governments to increase the support of their voters¹¹.

Fiscal policy can play an effective stabilizing function, provided that government institutions take active measures and anticipate their effects through the ongoing observation of market trends.

Undoubtedly, the main advantage of automatic stabilizers is the fact that they operate automatically and the assessment of the scale of demand shocks is not required. It is also worth remembering that some stabilizers can be both automatic and discretionary – requiring a political decision. An example of

⁸ *Podstawy Makroekonomii*, Z. Dach, B. Szopa (eds.), Kraków 2004, pp. 124-125.

⁹ S. Sztaba, *Ekonomia od A do Z*, Warsaw 2007, pp. 355-357.

¹⁰ D. Begg, S. Fischer, G. Vernasca, *Makroekonomia*, Warsaw 2014, p. 96.

¹¹ M. Łuszczuk, *Ograniczenia polityki fiskalnej państwa i ich konsekwencje dla jednostek samorządu terytorialnego*, "Ekonomiczne Problemy Usług", No. 100, 2012, p. 131.

such a stabilizer is, for example, taxes, which can work both without or as a result of a decision made by the state¹².

Over the centuries, economic crises, i.e. periodic declines in economic growth, have become an integral part of the market economy. The beginning of their occurrence dates back to the second half of the 16th Century, i.e. the period when the seeds of the creation of this economy can be found¹³. It stands out among the crises that have had the greatest impact on the world economy:

- The Great Depression (1929-1933),
- Oil crisis (1973),
- The financial crisis (2007-2009),
- The economic crisis caused by the SARS-Cov-2 coronavirus (2019-2021).

At the end of 2019, another crisis began around the world, caused by the Chinese-origin SARS-Cov-2 coronavirus. This virus quickly began to spread all over the world, gaining the name of a pandemic. It causes not only high morbidity and mortality but also has negative economic, social and political effects. An important factor influencing the economic effects of the epidemic is its extent. The epidemic affects both weakly developing countries and the largest world economies. Considering the 21st Century, it is the first global event that forced most countries in the world to subordinate the hitherto operation of the economy to the health security of citizens.

The strategy of effective public management during the pandemic in Europe and other countries is divergent and raises many doubts. To limit the spread of the virus, the governments of most countries decided to temporarily close the economy, which is associated with a significant downturn in the following years. The appearance of the SARS-Cov-2 coronavirus has 'frozen' the world economy¹⁴. Many small and medium-sized enterprises have collapsed and the labour market situation has dramatically worsened. The pandemic has also contributed to a significant increase in social inequality. Kristalina Georgieva, head of the International Monetary Fund, compares the effects of the pandemic to the Great Depression, initiated by the stock market crash of 1929. According to the latest OECD report, world GDP will fall by 4.2%. On the other hand, the estimated global economic growth in 2020 will amount to approximately 3.7%¹⁵.

¹² A. Krajewski, *Funkcjonowanie automatycznych stabilizatorów koniunktury na przykładzie Republiki Federalnej Niemiec w latach 1980-1998*, "Legal, Economic and Sociological Movement", No. 1, 2005, p. 189.

¹³ M. Bochenek, *Rozważania historyczno-semantyczne na temat kryzysów ekonomicznych*, "Acta Universitatis Nicolai Copernici. Oeconomia", Vol. XLIII, No. 2, 2012, pp. 147-159.

¹⁴ J. Męcina, P. Potocki, *Wpływ COVID-19 na gospodarkę i rynek pracy w Polsce - wyciąg z raportu badawczego, Ekspertyza 11*, 2020, p. 1.

¹⁵ *OECD Economic Outlook*, 2021 <<https://www.oecd.org/economic-outlook/>> (30.06.2021).

Due to the development of SARS-CoV-2 vaccines, the prospects for the development of the world economy have improved significantly. The relatively coherent government policy regarding the anti-virus strategy and various state aid programs also contributed to this. It is worth noting, however, that the recovery of the pre-pandemic economy will not be uniform across countries. Before the outbreak of the epidemic, some countries were already on the verge of recession, which is further aggravated by the economic slowdown caused by the virus. Although the general development prospects for the world economy look better, the situation of small entrepreneurs and unskilled workers is extremely difficult.

Among the listed effects of the pandemic, the most important are economic aspects. It is hardly surprising because almost all spheres of human activity are reduced to the financial basis. Marian Gorynia points to five areas of economic changes caused by the virus:

- economic growth of countries and the issue of debt;
- consumerism as a description of human consumption behaviour;
- digitization;
- environmental protection;
- globalization¹⁶.

The area on which almost all available economic forecasts agree is the country's economic growth and the issue of debt. The available growth forecasts expect a significant slowdown in global economic processes. Possible differences in assessments concern only the strength of the anticipated recession and the geographical distribution into which it will translate. Growing indebtedness is a factor that will significantly complicate the situation of countries in the future. It is influenced by various types of aid programs undertaken, aimed at mitigating the effects of the pandemic. The pandemic is projected to reduce irrational consumerism. This is only a prediction that we will be able to check only in the coming years. Perhaps, however, the return to the pre-virus reality will take place much faster than we all expect. Most of the economic analyzes presented also point to the accelerated digitization and digitization of most forms of business activity. Looking at it from this point of view, we can see hope in reducing the exploitation of the natural environment. Additionally, the analyzes indicate that the pandemic in the short and medium-term will slow down the ongoing globalization processes¹⁷.

Undoubtedly, the effects of the economic crisis caused by the SARS-Cov-2 coronavirus will change thinking in many areas, not only economic. We can

¹⁶ M. Gorynia, *Czy Covid-19 zmieni gospodarkę i nasze myślenie o niej?*, <<https://www.rp.pl/opinie-ekonomiczne/art656141-marian-gorynia-czy-covid-19-zmieni-gospodarke-i-nasze-o-niej-myslenie>> (30.06.2021).

¹⁷ *Ibidem*

expect a revolution, or at least an evolution of management goals on a global scale. The economic goals of individual countries and global corporations will change. However, the question remains whether there is a mechanism on an international scale that makes it possible to coordinate all activities. A mechanism that would allow for the effective and efficient implementation of the developed changes.

The impact of the economic crisis in 2020 on the macroeconomic situation in Germany

The spread of the coronavirus around the world is having a big impact on the global economy. Due to the lack of adequate data, inaccurate models and uncertainty as to the government's actions, economic forecasts are subject to greater uncertainty than usual. It is very difficult to predict how a pandemic will develop. To minimize the effects of a pandemic, countries undertake various types of activities that directly affect the labour market.

The COVID-19 pandemic and the implementation of the required countermeasures meant that the German economy experienced its largest contraction in history in the first half of 2020. Demand for hotel and leisure services has been largely constrained by distancing measures and the increasing incidence of the virus. The pandemic also threatened the dynamics of the development of the service sector, which supported the economy in earlier periods of weak growth¹⁸. The effects of the pandemic also affected the situation in the labour market. The ongoing pandemic meant that the labour market had to adapt to the changes in the environment. The conditions and the way of organizing work have changed significantly. An example of this is the extended scope of working from home. Before the pandemic, Germany was relatively lagging in the proportion of people working remotely¹⁹. This changed during the pandemic, as in many industries and occupations it was the only way to continue the economic activity. In particular, in professions that did not require the employee's physical presence at the workplace. The transition to this model of work, however, carries several consequences, among which the difficulties in balancing private life with work can be mentioned. An additional obstacle for working people was the closure of schools and care and educational facilities by the government.

In Germany, there have also been many doubts about how to regulate the rules of working from home. As in Poland, there is no legal framework for working from home in this country. There is concern about the emergence of a new

¹⁸ W. Eichhorst, P. Marx, et al., *COVID-19 Crisis Response Monitoring: The Second Phase of the Crisis*, Bonn 2021, s. 3.

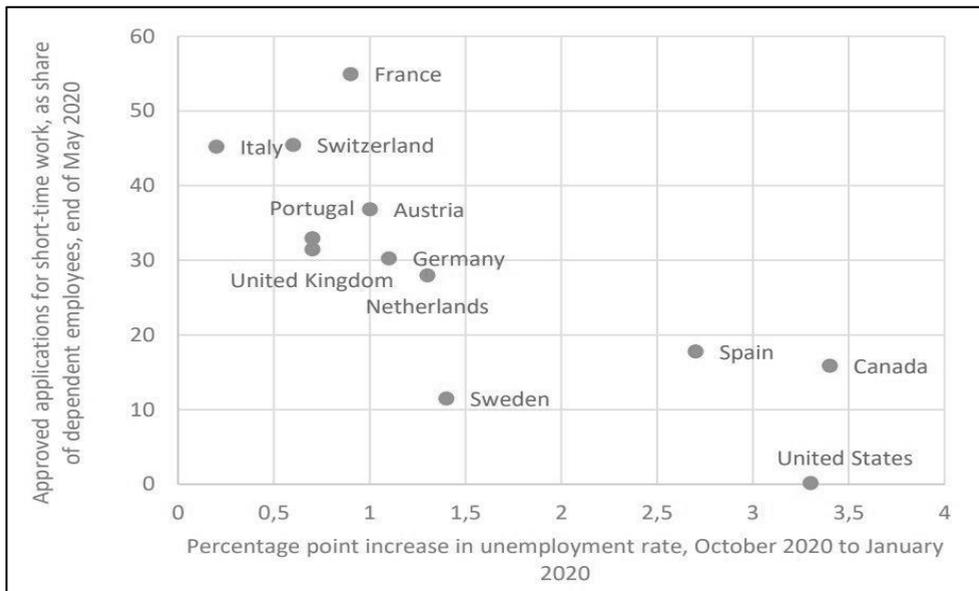
¹⁹ *Ibidem*.

division in the labour market between those who can work from home and those who work in the service sector²⁰. The invention and approval of the SARS-CoV-2 coronavirus vaccines, and thus the optimistic expectations of society, contribute to a relatively quick revival of the demand for products and services.

The impact of the economic crisis in 2020 on the macroeconomic situation in Italy

Italy was the first European country that, to stop the spread of the SARS-CoV-2 coronavirus, decided to introduce the so-called lockdown. This was mainly due to the very high mortality rate of infected people. In managing the crisis, the Italian government decided to introduce a series of measures to limit the economic consequences of the pandemic. Short-term work programs and the temporary suspension of layoffs allowed for temporary protection of the labour market in the initial period of the pandemic, as shown in Figure 2.

Figure 2. The relationship between unemployment and the implementation time of short-term work (%).



Source: W. Eichhorst, P. Warx, *op. cit.*, p. 4.

²⁰ R. Holler, L. Janys, *Labour Supply in the Early Stages of the COVID-19 Pandemic: Empirical Evidence on Hours, Home Office, and Expectations*, Bonn 2020, p. 18.

Comparing Germany to Italy, we see that the country has gradually introduced short-term work, which has resulted in a relatively steady increase in unemployment.

The temporary closure of schools and kindergartens meant that employees of the private and public sector caring for children under 12 or people with disabilities were granted the right to leave. The total length of leave for both parents was up to 15 days. During this leave, parents were entitled to 50% of their remuneration. As an alternative to the holiday, you could also apply for a subsidy to cover the costs of childcare for € 600. In the case of people working in the health care or emergency services, this amount was – € 1000. On the other hand, self-employed people caring for children aged 12-16 years, acquired the right to unpaid leave for the period of school closure²¹.

Due to the pandemic, the Italian government issued a regulation on specific measures in the field of distancing, hygiene and cleaning at workplaces. He also recommended adopting specific security protocols to minimize the risk of contracting the virus²².

There is no doubt that Italy is one of the countries heavily affected by the pandemic. Increasing morbidity and deaths are driving the government to take restrictive measures and measures. Looking at the macroeconomic forecasts, it can be concluded that the Italian economy is on the path of recovery and is slowly recovering from the losses incurred as a result of the pandemic.

The impact of the economic crisis in 2020 on the U.S. macroeconomic situation

The coronavirus pandemic has hit the U.S. economy very hard. Isolation orders have forced many companies to close or limit their businesses. The International Monetary Fund (IMF) has published a report in which it estimates that the U.S. GDP will decline by 3.4% in 2020. The forecast for 2021 assumes an increase of over 5%.

A large number of unemployed people or people who have dropped out of the labour market have entered the market. There has been a reversal of the 10-year progress made to return to full employment after the 2008 financial crisis. A large proportion of people are forced to retrain or go through several temporary jobs before obtaining a long-term contract²³. Older and low-skilled workers are the most vulnerable to long-term unemployment.

²¹ *Ibidem*

²² M. Biasi, *COVID-19 and labour law in Italy*, Milan 2020, p. 308.

²³ V. Gregory, G. Menzio, D. G. Wiczer, *Pandemic Recession: L or V-Shaped?*, <<https://www.nber.org/papers/w27105>> (30.06.2021).

The outbreak of the epidemic caused unemployment to rise to a post-war record. At the beginning of 2020, the unemployment rate was as high as 14.7%. After the restrictions were eased, many workers were dismissed by their previous employers, which pushed the unemployment rate down to 8.4% in August 2020. A further decline in unemployment is likely to be more gradual, as workers in the sectors most affected by the pandemic – e.g. hospitality, tourism, food services and entertainment – are very often low-skilled, resulting in long periods of job search²⁴.

The paroxysm of the COVID-19 epidemic triggered the activation of fiscal and monetary policy instruments. An active fiscal policy assisted unemployed workers and companies facing financial difficulties in a short time. Comprehensive support was introduced, including but not limited to:

- additional unemployment insurance;
- one-off payments for families;
- financial assistance to State Governments;
- redeemable loans backed by the Treasury for small businesses – retaining employees and increasing the opportunities of the healthcare sector²⁵.

The conditions and organization of work have changed significantly. As in many countries, there has been a sharp increase in remote work – mostly office workers. Monthly research by the US Bureau of Labour Statistics showed that in May 2020, when the number of infected persons peaked and restrictions on the operation of companies were very common, as many as 35% of employees worked remotely. On the other hand, the percentage of people who were unable to work due to the pandemic was as much as 19%.

With the advent of the second and third waves of the virus, the United States again began to impose restrictions on opening companies. Many employers have also decided to work remotely. Therefore, the share of people working remotely and not able to work will increase.

With the ever-increasing number of cases of infected people, the US government has made efforts to minimize the effects of the pandemic. Many measures have been taken to slow infection, but as with other countries, it will take a long time to stop the epidemic. Rebuilding the economy as well as the labour market will take several years²⁶.

²⁴ J. M. Barrero, N. Bloom, S. J. Davis, *COVID-19 Is Also a Reallocation Shock*, Becker Friedman Institute Working Paper No. 2020-59, Chicago 2020.

²⁵ *OECD Economic Outlook...*

²⁶ S. Housman, *COVID-19 Crisis Response Monitoring. United States*, Bonn 2020, p. 10.

The impact of the economic crisis in 2020 on the macroeconomic situation in Sweden

Sweden is one of the few European Union countries that decided to apply less restrictive measures to mitigate the spread of the COVID-19 virus. A short-term work program was introduced which covered as much as 9% of the total workforce. The measures taken by the Swedish government were costly but looking at sound fiscal finances stability can be expected both in the short and medium-term.

Given the labour market situation, the Swedish government imposed several targeted economic policy measures, which mainly boiled down to:

- reducing the financial burden resulting from sickness absenteeism of employees;
- protection of companies and jobs;
- increasing access and generosity under the unemployment insurance scheme.

The outbreak of the pandemic also changed the conditions and organization of work. The Swedish Public Health Agency recommended all employees who can work remotely – work from home. The lack of closure of schools and childcare facilities ensured an effective supply of labour, as parents were able to come to work if necessary. Due to the lack of distraction from children, the efficiency of the work performed increased.

The long-term perspective will show us whether the strategy adopted by Sweden has paid off. The second wave of the disease caused the country to withdraw from initially chosen mild restrictions, and the actions taken by the government are more decisive. Despite the effects of the pandemic, Sweden remains in the black, which is related to good economic health before the pandemic breaks out.

The impact of the economic crisis in 2020 on the Polish economy

The global economic crisis caused by the coronavirus interrupted Poland's socio-economic progress. The pandemic happened at a time of intense increase in the standard of living in the community, as shown by historically low unemployment and poverty rates. Already at an early stage of the pandemic, the Polish government decided to introduce several measures to limit the spread of the virus. Due to measures taken by the government, the number of infections in the first quarter of 2020 was reduced. After lifting some of the restrictions, production and consumption recovered quite quickly. However, the second and third waves forced the implementation of more restrictive measures, which significantly affected the Polish economy.

The coronavirus pandemic has had a very strong impact on the labour market in Poland from the very beginning. Certain industries such as gastronomy, tourism, and the cultural and entertainment sectors have been particularly affected by government restrictions. Despite the financial support provided by the government, many companies were unable to maintain liquidity. In the second quarter of 2020, there was a huge wave of job losses – about 100,000, of which about 1/3 were redundancies as a result of the pandemic. In the first quarter, this percentage was approximately 1/4²⁷.

According to Grant Thornton and Element's research approx. 238 thousand job offers were published on the 50 largest recruitment portals in August 2020. It's about 21.8% less than in the same period a year ago (approx. 305 thousand in August 2019). Although the Polish economy has been almost completely freed from the lockdown and the formal restrictions, related to it, since June 2020, the labour market in Poland is still far from the pre-pandemic state. On the one hand, this is a much smaller decline than at the peak of the lockdown, when the annual decline in the number of job offers amounted to 40-50%. On the other hand, however, the fact that August 2020 was the second consecutive month in which the declines – slightly, but still – deepened, seems somewhat disturbing. In June, the number of job offers dropped by only 16.3%, and in July by 18.9%. These results may therefore indicate a certain stabilization in the labour market and the formation of a 'new normality', in which the demand for labour is shrunk by about one fifth compared to 2019²⁸.

Before the start of the pandemic, remote work in Poland was not very popular and was met with reserve among employers. Most companies treated it as a kind of benefit – the possibility of several days of remote work a month. In the initial phase of the pandemic, companies where it was possible to implement such a model of work because limiting the mobility of the population contributed to the reduction of virus transmission.

For many employers, a forced transition to remote work turned out to be a good solution. It was also noticed that this model has many benefits and threats. The advantages include high flexibility and time-saving. On the other hand,

²⁷ *Wpływ epidemii COVID-19 na wybrane elementy rynku pracy w Polsce w czwartym kwartale 2020 r.*, <<https://stat.gov.pl/obszary-tematyczne/rynek-pracy/popyt-na-prace/wplyw-epidemii-covid-19-na-wybrane-elementy-rynku-pracy-w-polsce-w-czwartym-kwartale-2020-r-4,4.html>> (30.06.2021).

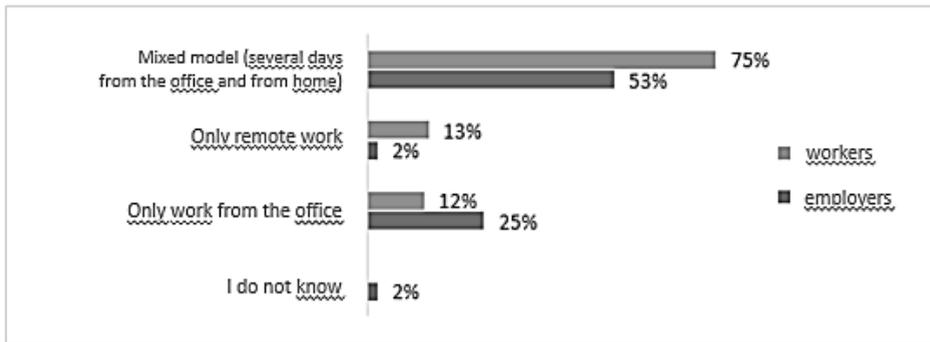
²⁸ *Rynek pracy w czasie COVID-19. Jak przez kryzys gospodarczy spowodowany pandemią koronawirusa zmienił się rynek pracy w Polsce. Edycja V: sierpień 2020*, <https://grantthornton.pl/wp-content/uploads/2020/08/Rynek-pracy-w-czasie-koronawirusa-w-lipcu_RAPORT.pdf> (30.06.2021).

threats indicate a decrease in efficiency and the feeling of being part of a team²⁹.

As restrictions are reduced, companies will have to decide what work model they will use in the future.

As shown in Figure 3 below, the expectations of employees and employers about the future work model differ. As many as 80% of the surveyed people express the willingness to stay to a different extent while working remotely – mixed model (75%), only remote work (2%)³⁰.

Figure 3. Companies' plans for the continuation of remote work.



Source: *Ocena nowej rzeczywistości rynku pracy...*

It is visible that the majority of employees and employers would like to work in a mixed system, avoiding complete remote work. It is worth noting that the Labour Code does not define the issue of remote work as a whole, which is associated with many unknowns for employers. However, it can be said with certainty that the COVID-19 pandemic has largely contributed to the widespread use of the remote working model. In the long run, we will see how many companies will decide to use it and in what form.

The pandemic has largely affected the functioning of the labour market. The employers' view of acquiring, retaining talent and working remotely has changed. In the face of the crisis, many solutions were implemented that turned out to be more or less effective. Individual industries and sectors were not

²⁹ *Praca zdalna – rewolucja, która się przyjęła. Teraz czas na zmiany*, <http://www.pte.pl/pliki/2/36/Future_Business_Institute.pdf> (30.06.2021).

³⁰ *Ocena nowej rzeczywistości rynku pracy – perspektywa pracowników i pracodawców*, <https://prowly-uploads.s3.eu-west-1.amazonaws.com/uploads/landing_page_image/image/289894/b75c42f8d3eed0f43bae03f9c75329ec.pdf> (30.06.2021).

equally affected by the effects of the pandemic. Some industries have lost and some have gained. Government-imposed restrictions, despite initial support, made it impossible for many companies to maintain liquidity. Business leaders had to learn to manage in a crisis while learning lessons for the future. Poland is on the road of slow reconstruction in the new post-pandemic reality.

Summing up, we can expect that the key change in the labour market in the coming decade will be shifted towards employment structure services. Additionally, Poland will have to face the challenge of the prolonged professional activity of society. It can be expected that in the labour market there will be fierce competition among companies for human resources. The progressing demographic processes will force an increase in the number of available forms of lifelong learning. The pace of implementation of individual processes will depend on many factors, including the employment structure taking into account the size of the companies. In the coming decade, Poland should focus on reducing the percentage of micro and small companies. Large enterprises have a greater ability to invest, develop their competencies, and thus compete on the global market.

Multi-criteria evaluation of selected work models used by companies

The survey was conducted among four HR Business Partners managing human resources in medium-sized companies or large corporations in Poland. During the pandemic, these people successfully implemented a total remote model for the company. Before the pandemic, the companies in which decision-makers worked operated in a hybrid model, working remotely several days a month. Therefore, the selected group of experts knows the implementation, functionality, benefits and effects of the remote work model.

The study presented below was conducted using the Analytical Hierarchical Process (AHP), which is one of the multi-criteria methods of decision making. In this study, the AHP method, based on four main criteria, allowed for the selection of the best work model for companies. The research tool in the conducted study was an interview with the questionnaire. It contained such elements as: the aim of the study, the decision problem as well as criteria, sub-criteria and possible decision variants. At each level of the hierarchical structure of the model, the individual elements were compared in pairs, each with each element, assessing the strength of their influence. Each comparison was made on the 9-point scale T. L. Saaty³¹.

As part of the main criteria, 4 criteria were distinguished:

- social area – includes, among others communication and relations

³¹ T. Saaty, *Decision Making for Leaders: The Analytic Hierarchy Process for Decisions in Complex World*, Pittsburgh 2001, p. 73.

- between employees and their superiors;
- legal area – covers various types of legal regulations applicable in the areas of the company's operations;
- organizational area – covers the company's strategy, mission/vision, and implemented procedures and policies;
- technological area – includes all kinds of tools and technological solutions that allow for more effective management and operation of the company.

The following sub-criteria have been distinguished within the ‘social area’ criterion:

- deteriorating mental health of employees – remote work makes it difficult to maintain a balance between private and work life, as well as increases the growing sense of isolation;
- problems with communication and relations among employees – difficulties with reading non-verbal communication and the use of simplified forms of communication (various types of communicators) cause problems in establishing and maintaining employee relationships;
- decrease in effectiveness/efficiency of work – remote work is largely associated with less control, which in many cases results in an increase in distraction during work. This is also influenced by, among others limited contact with the team and problems with maintaining self-discipline.

In the second criterion, ‘legal area’, the following sub-criteria have been specified:

- lack of regulations governing OHS at remote workplaces – the current regulations do not specifically regulate health and safety issues during remote work, which may be a potential problem for employers;
- no regulation of remote work in the Labour Code – currently, in the Labour Code, we can only find a definition of telework;
- the need to supervise work outside Poland – the employer must take into account tax, insurance and immigration issues.

The third criterion ‘organizational area’ includes the following sub-criteria:

- the need to adapt the existing organizational culture of the company – the implementation of the remote work model in the company is associated with the obligation to change the organization of work, adapt to new conditions and ensure business continuity with care for the mental health of the employee;
- the need to adjust employee benefits – the remote work model used by the company influences the expectations of employees as to the benefits received;
- the need for companies to implement appropriate procedures – a change in work organization affects the change of procedures already existing

in the company or the need to create new ones.

The last criterion 'technology area' consists of the following sub-criteria:

- the need to use technology in most areas of the company's operation – a remote work system is associated with the need to implement new technological solutions to improve the functioning of the company;
- the need to ensure data security – the use of a remote work system by companies requires taking actions to ensure the security of the processed information;
- the need to provide remote work tools – the employer, when commissioning an employee to work remotely, is obliged to provide the tools and materials necessary for the work.

The study distinguishes three variants of the best work model for companies:

- remote work model – a form of work organization in which employees provide work outside the workplace;
- the model of stationary work – a form of work organization in which employees provide work within the workplace;
- hybrid work model – combining the remote and stationary work model.

Research method

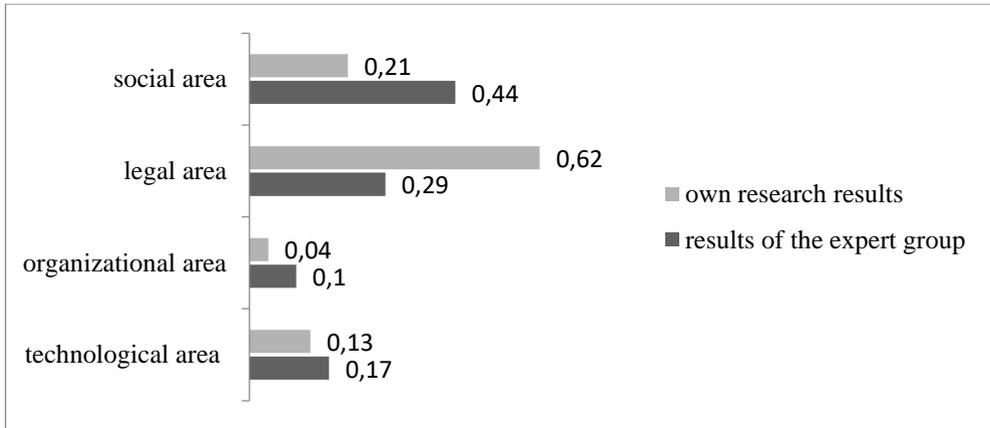
The Analytical Hierarchical Process (AHP) was used to solve the problem at work³². The presented consistent set of criteria allows for the selection of the optimal decision variant for a given goal.

Development of research results

The results of own research and research carried out among four HR Business Partners showed some discrepancies in the perception of the power of influence of individual areas on the selection of the best work model for companies. In my research, the most important criterion turned out to be the legal area (0.62), while in the research of a group of experts – the social area (0.44). The second highest value was assigned to the social area – own research (0.21) and the legal area – a group of experts (0.29). The third most important criterion showed agreement with the slight difference in values – 0.13 and 0.17, respectively. The organizational area in both cases turned out to be the criterion of the least importance (0.04 and 0.1) (see Figure 4).

³² W. Adamus, A. Gręda, *Wspomaganie decyzji wielokryterialnych w rozwiązywaniu wybranych problemów organizacyjnych i menedżerskich*, "Badania Operacyjne i Decyzje", No. 2, 2005, p. 10.

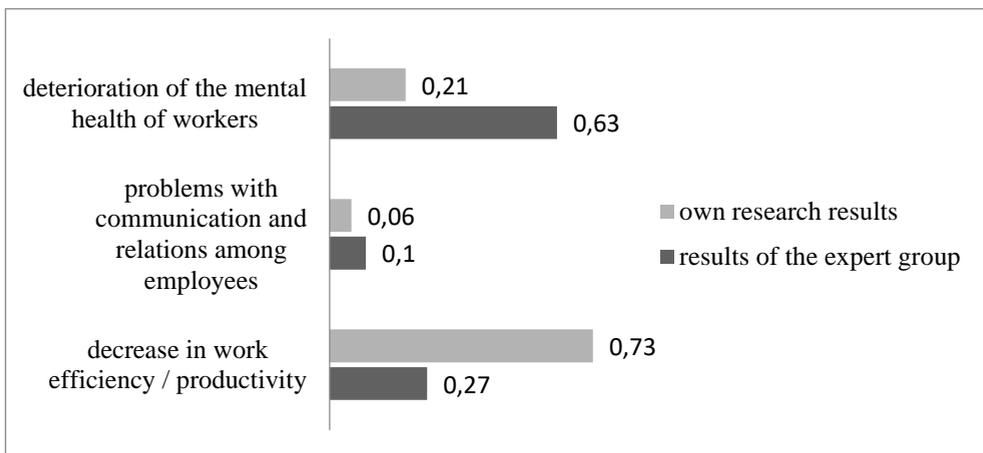
Figure 4. The hierarchy of importance of the main criteria - the results of own research and the group of experts.



Source: Own study based on research.

In the main criterion ‘social area’ there was a large discrepancy in the assessment of the most significant sub-criterion. The greatest significance in the authors' research was attributed to the decrease in work efficiency/productivity (0.73). On the other hand, a group of experts indicated the deterioration of the mental health of employees (0.63). In both cases, communication and relationship problems among employees were the least significant (see Figure 5).

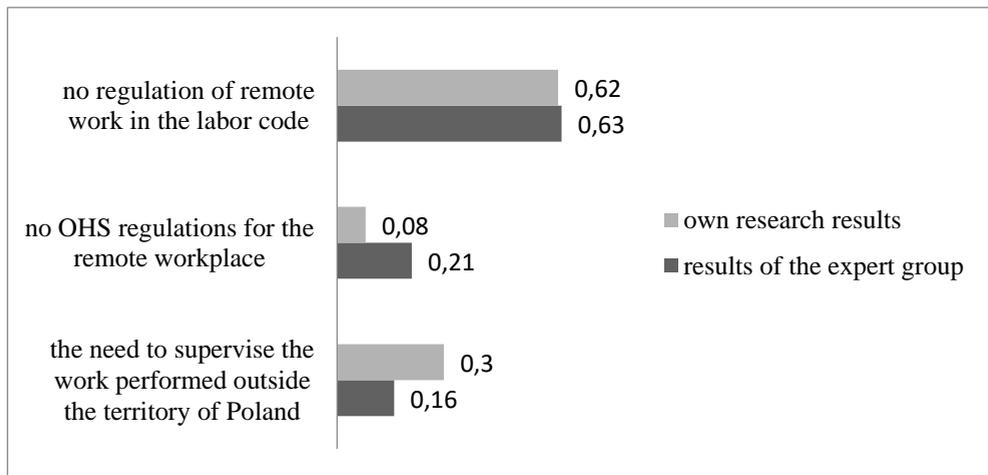
Figure 5. Comparative hierarchy of the sub-criteria importance of the criterion ‘Social area’ - values of local priorities.



Source: Own study based on research.

In the legal criterion, the local values for the most important sub-criterion – the lack of regulation of remote work in the Labor Code, had very similar values (0.62 and 0.63). On the other hand, the second most important sub-criterion showed a considerable discrepancy. According to the authors' research, the need to supervise work outside the territory of Poland was of greater importance, while the experts pointed to the lack of provisions regulating occupational health and safety at the remote workplace (see Figure 6).

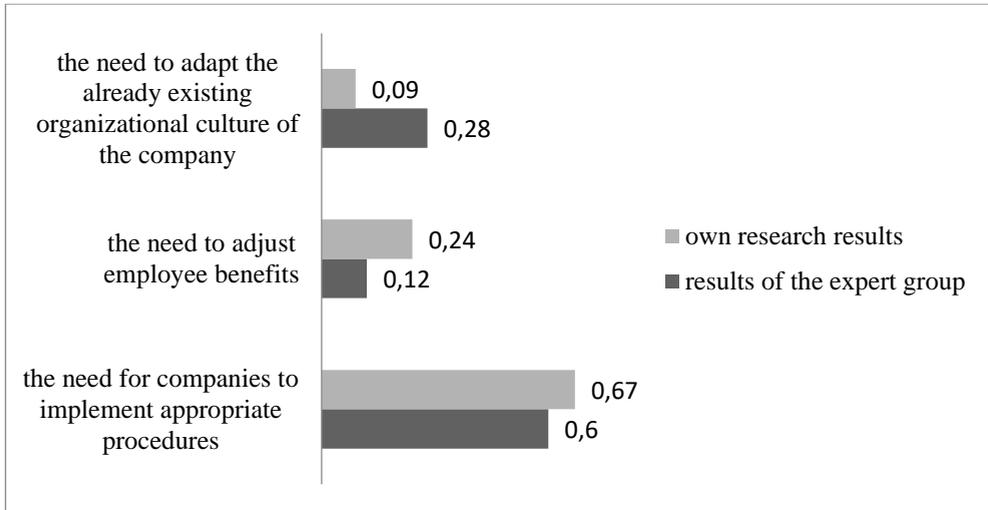
Figure 6. Comparative hierarchy of the sub-criteria importance of the criterion 'Legal area' – local priority values.



Source: Own study based on research.

The organizational area, both in own research and in the research conducted among experts, shows compliance with the highest significance of the sub-criterion: the need for companies to implement appropriate procedures. The obtained values are very similar - 0.67 and 0.6. In my research, the next highest value was the need to adjust employee benefits (0.24), and then the need to adjust the already existing organizational culture of the company (0.09). According to the group of experts, the second and third most important sub-criteria turned out to be, respectively, the need to adjust the existing organizational culture (0.28) and the need to adjust employee benefits (0.12) (see Figure 7).

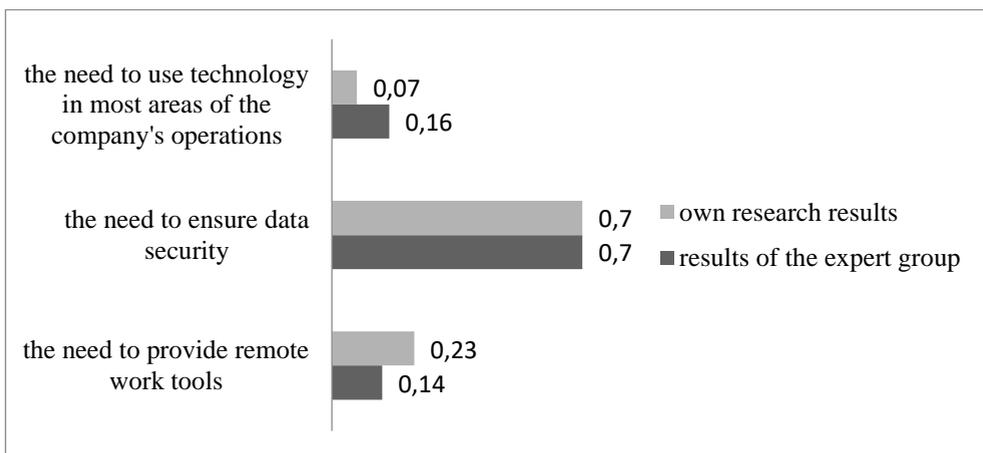
Figure 7. Comparative hierarchy of importance of sub-criteria for the criterion 'Organizational area' – values of local priorities.



Source: Own study based on research.

The technological area, both in own research and in the research conducted among experts, shows high compliance. The obtained values are very similar to each other, and in the case of the second sub-criterion: the need to ensure data security – the same (0.7). Comparing my research to the group of experts, more weight was given to the third sub-criterion: the need to provide remote work tools (see Figure 8).

Figure 8. Comparative hierarchy of importance of the sub-criteria for the 'Technological area' criterion – local priority values.



Source: Own study based on research.

For individual local values, global values determining the importance of individual sub-criteria in the AHP model were calculated. Table 2 presents the values of the main criteria, local priorities and global priorities obtained in the own research. Table 3 shows the analogous values for the group of experts.

Table 2. The results of comparisons with pairs of criteria and sub-criteria in the selection of the best work model for companies in Poland – own research

Main criteria K_i	Priorities P_i	Sub-criteria S_i	Local priorities P_1	Global priorities $P_g = P_i \times P_1$
Social area	0,21	Deterioration of the mental health of workers	0,21	0,0441
		Problems with communication and relations among employees	0,06	0,0126
		Decline in work efficiency / productivity	0,73	0,1533
Legal area	0,62	Lack of regulation of remote work in the labor code	0,62	0,3844
		Lack of OHS regulations for the remote workplace	0,08	0,0496
		The necessity to supervise the work performed outside the territory of Poland	0,3	0,186
Organizational area	0,04	The need to adapt the already existing organizational culture of the company	0,09	0,0036
		The need to adjust employee benefits	0,24	0,0096
		The need for companies to implement appropriate procedures	0,67	0,0268
Technological area	0,13	The need for companies to implement appropriate procedures	0,07	0,0091
		The need to ensure data security	0,7	0,091
		The need to provide remote	0,23	0,0299

		work tools		
$\Sigma=$	1,000			1.000

Source: Own study based on research.

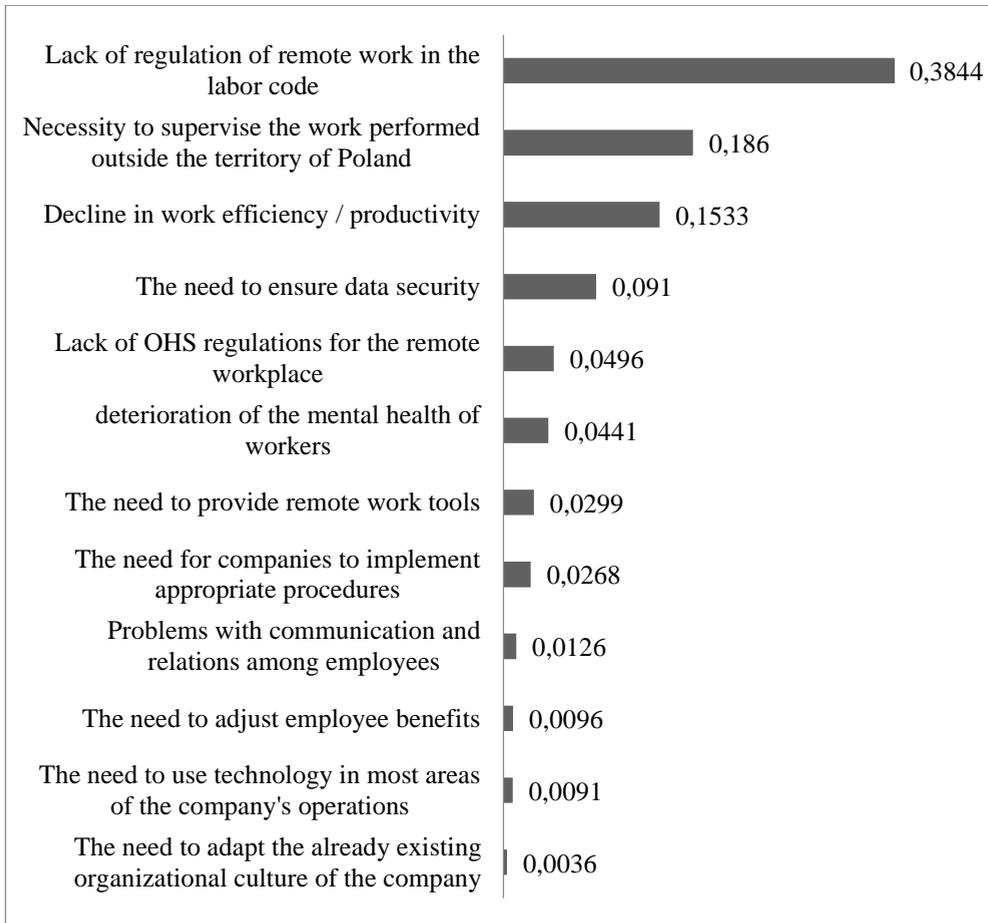
Table 3. The results of comparisons with pairs of criteria and sub-criteria in the selection of the best work model for companies in Poland - a study by a group of experts

Main criteria K_i	Priorities P_i	Sub-criteria S_i	Local priorities P_1	Global priorities $P_g = P_i \times P_1$
Social area	0,44	Deterioration of the mental health of workers	0,63	0,2772
		Problems with communication and relations among employees	0,1	0,044
		Decline in work efficiency / productivity	0,27	0,1188
Legal area	0,29	Lack of regulation of remote work in the labor code	0,63	0,1827
		Lack of OHS regulations for the remote workplace	0,21	0,0609
		The necessity to supervise the work performed outside the territory of Poland	0,16	0,0464
Organizational area	0,1	The need to adapt the already existing organizational culture of the company	0,28	0,028
		The need to adjust employee benefits	0,12	0,012
		The need for companies to implement appropriate procedures	0,6	0,06
Technological area	0,17	The need for companies to implement appropriate procedures	0,16	0,0272
		The need to ensure data security	0,7	0,119
		The need to provide remote work tools	0,14	0,0238
$\Sigma=$	1,000			1.000

Source: Own study based on research.

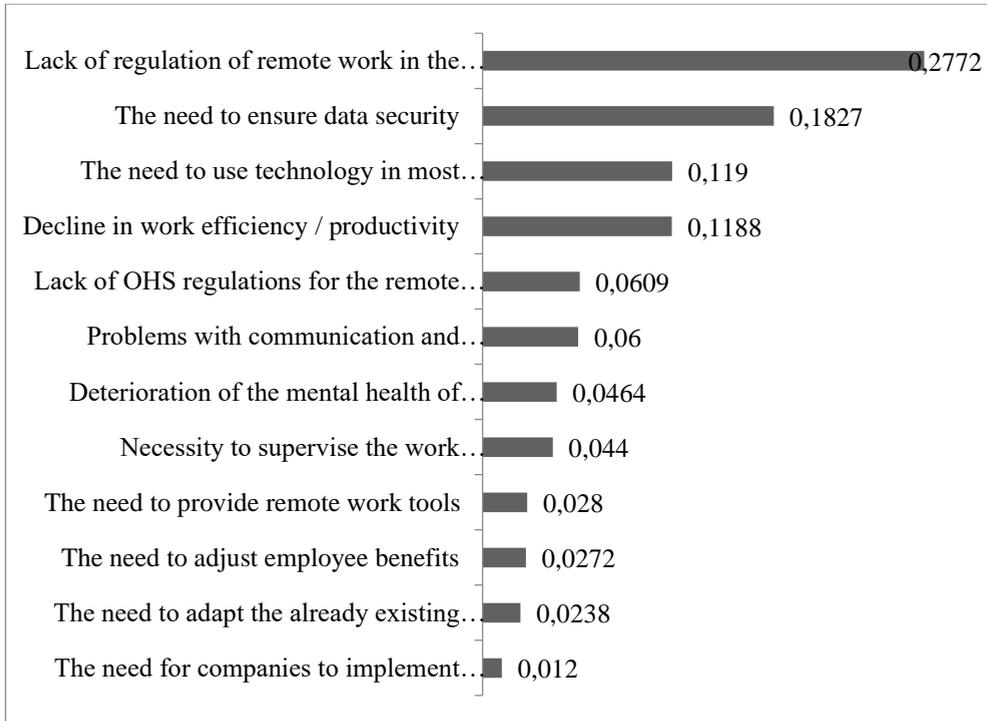
Figures 9 and 10 presented below show the global priority values for own research and the group of experts, respectively. These values are ordered from the highest to the lowest.

Figure 9. Global priority values for the sub-criteria of the AHP model for own research.



Source: Own study based on research.

Figure 10. Global priority values for AHP model sub-criteria for expert group studies.

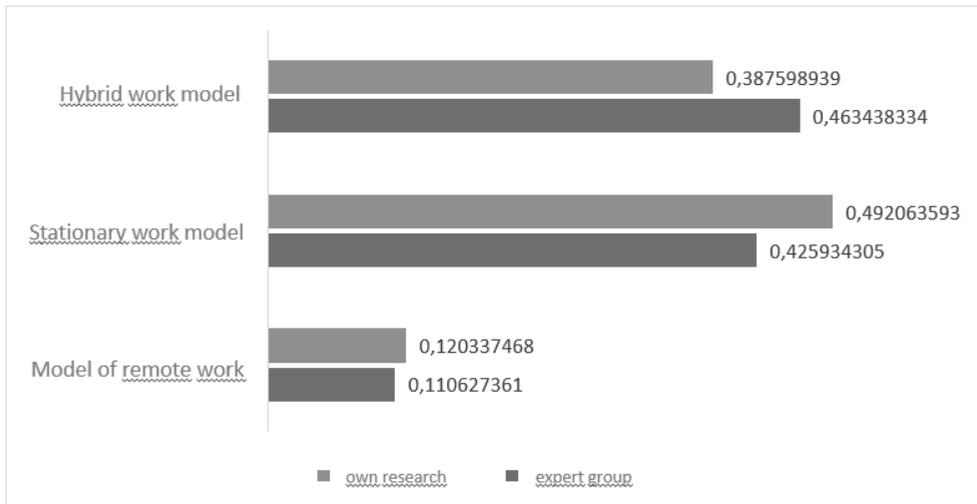


Source: Own study based on research.

The analysis of the global priority values of individual criteria showed that for both groups the greatest cost related to remote work is the lack of regulations for remote work in the Labour Code. Comparing the results of our research and the results of the group of experts, we see a discrepancy between the importance of the sub-criterion: the need to supervise the work performed outside the territory of Poland. In the authors' research, this sub-criterion came second (0.186), while in the group of experts – eighth place (0.044). The third highest value of the global priority in the authors' research was related to the decrease in work efficiency/productivity (0.1533). In the research of the group of experts, this sub-criterion came fourth (0.1188).

Based on the diagram presented in the previous section, the global priorities for individual alternatives were calculated – the model of remote, stationary and hybrid work. Figure 11 below shows the ranking of alternatives in own and expert group research.

Figure 11. Ranking of alternatives in own research and for the group of experts.



Source: Own study based on research.

As can be seen in the figure above, the first place in the ranking in the own research was taken by the stationary work model, while in the group of experts – the hybrid model. In both cases, the remote working model took third place. The values obtained in the research allowed for the selection of the most optimal alternative, referring to the goal adopted in the model. Looking at the figure, it can be seen that the values obtained in the own research and the group of experts are similar. The largest discrepancy is visible in the hybrid work model, as the values fluctuate, respectively, in the own research and the group of experts, above 0.38 and 0.46, respectively. In the stationary work model, we have differences of about 0.07, while in the remote work model the difference is very small 0.01.

Summary and Conclusions

Choosing the best work model for companies is certainly a big challenge. With declining infections and a progressive national immunization program, more and more companies face this kind of dilemma. When choosing the best and, therefore, the most effective model of work for companies, one should take into account, among others: the social, legal, organizational and technological areas. Only a detailed analysis of individual areas and assigning them weights (priorities) allows you to choose the most optimal model to achieve the adopted goal.

The conducted own research and the research of a group of experts show that the approach of companies to remote work has changed. The paroxysm of the pandemic forced many companies to switch to the remote working model. It required the implementation of many procedures and the ability to adapt to rapidly changing conditions. This was a novelty for many employers, as before the pandemic remote work usually occurred in large companies or corporations in the amount of several days a month. The functioning of companies in such a model of work allowed for noticing both positive and negative consequences. There is no doubt that it is very difficult to choose one most effective work model that would work well in all organizations. The choice of the model depends primarily on the industry, the specificity of work and organizational culture. It is also worth noting that each employee is different and their effectiveness and work efficiency in a particular model may differ.

The model of remote work in own research and the group of experts took third place in the ranking, which indicates that for many organizations it is not the most optimal solution. A much better idea is to implement a hybrid work model that includes the model of remote and stationary work. This allows the effects of total working at a distance to be avoided or partially minimized. The hybrid model of work is not a new solution, but it has gained much popularity in the face of the pandemic. In this model, the place of work is not that important anymore, but the goal of the work and the results obtained are what counts. Offices are also starting to be perceived more as places for employee integration.

The following months will show what percentage of companies will decide to switch to a remote or hybrid work model. Due to the specificity of the industry in which it operates, a large part of the organization is not able to function permanently in the remote work model. It was only a temporary solution forced by the outbreak of the pandemic.

The processes triggered by crises are irreversible and permanently change the way the market functions. The literature on the subject does not provide an unequivocal cause of economic crises.

The coronavirus pandemic has hit individual countries to varying degrees. Therefore, the actions taken by governments differ significantly from each other. Minimizing the effects of economic crises usually occurs through the application of appropriate policies, including, inter alia, fiscal and monetary policies of an expansionary or restrictive nature. The following years will show the impact of actions taken by the government on individual elements of the economy.

The pandemic had a major impact on the Polish economy, thus interrupting the socio-economic progress that had been sustained for several years. The macroeconomic forecasts show that Poland is on the path of recovery and is slowly making up for the losses incurred due to the pandemic. It will take a few or several years for the economy to fully recover.

The coronavirus also affected the functioning of the labour market. Many jobs have been liquidated and the number of job advertisements posted by employers has decreased significantly. Employers' approach to talent acquisition, retention and remote work has changed. In the face of the crisis, companies implemented many solutions that turned out to be more or less effective. Business leaders had to learn to manage in crisis while learning lessons for the future. The pandemic also contributed significantly to the widespread use of the remote and hybrid working model. In the long run, it will become clear how many companies will decide to use them and in what form.

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Eugeniusz BILONOŹKO
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**KAZIMIERZ WÓYCICKI, *LISTA AGENTURY*, NIEOCZYWISTE
PUBLISHING HOUSE, WARSAW 2021, PP. 310.**

In 2021 a well-known Polish journalist, historian, politician, and academic lecturer, Kazimierz Wóycicki, made his literary debut with a political fiction novel *List of Agents*. Previously, the author was known for numerous scientific, analytical, and journalistic studies. Kazimierz Wóycicki (born August 22, 1949, in Warsaw) is a Polish journalist, journalist, veteran, and historian. He worked in the editorial office of the *Więź* monthly, as a collaborator of Tadeusz Mazowiecki, he was an activist of the Catholic Intelligentsia Club in Warsaw. In the years 1990-1993, he was the editor-in-chief of *Życie Warszawy* daily. He was the director of the Szczecin branch of the Institute of National Remembrance. Vice-chairman of the Democratic Party – *demokracy.pl*. Currently the director of Akademia Wchód – Fundacja Dom Wschodni.

Despite the novel being political fiction, I believe that it deserves to be reviewed scientifically because it will certainly be read by people who will never read the report of the Copernicus Group or about the war on disinformation in Poland.

A scientific or journalistic text is to meet several formal requirements and is not always understood by the general public. A typical example is such a literary genre as utopia and anti-utopia. Classic texts (philosophical or literary) of this genre have sometimes been an inspiration or a description of what was or is to be in reality. Often the author could not know that he was describing a political present or the future. Unfortunately, a diary or chronicles (especially those describing the events of the 20th Century) are more terrifying than a literary description. An excellent example is *Kolymskie Stories* by Warłam Szalamow, describing life in the Gulag prison. However, analytical and philosophical texts are created precisely based on literary texts or diaries. The problem of the analysis of literary art and art in the 20th Century, related to the development of the pictorial culture, became very visible. Contemporary culture uses pictures (a kind of myth) to translate the world, if we want to reach the masses, to explain certain political or social changes we need modern

methods of visualization (description). An example of what is the television broadcast of the trial of the Nazi criminal Adolf Eichmann broadcasted in the 1960s, that managed to recall the nightmares of World War II and gain a tangible counterargument to the Auschwitz lie. In the following years, the trial of Eichmann became part of mass culture, and in philosophy, it was used to write such texts as *Eichmann in Jerusalem: a thing about the banality of evil* (1963) – a book by the German philosopher of Jewish origin Hanna Arendt and *My sons of Eichman. An open letter to Klaus Eichmann* (1964) – by Hannah Arendt's first husband, Günther Anders. Nowadays, it is undoubted that contemporary youth learn about the Jerusalem trial of 1961 from films, and their next step may be to search for historical or philosophical texts describing the trial of that Nazi criminal. I see a similar sense in reading and analyzing the literary debut of Wóycicki, an easy and pleasant description to provoke a deeper analysis.

The tale *List of Agents* is classic espionage and political novel, but by a strange coincidence, the plot turns from political fiction into reportage or non-fiction. The tale *List of Agents* is classic espionage and political novel, but by a strange coincidence, the plot turns from political fiction into reportage or non-fiction. And the tale of Wóycicki describes Poland and Central Europe after 2034. According to the author, the political future of the region is very interesting, or perhaps gloomy (for everyone at its discretion). Hungary, Slovakia, Bulgaria, and Poland left the EU and NATO but did not form their own alliance. And the tale of Wóycicki describes Poland and Central Europe after 2034. According to the author, the political future of the region is very interesting, or perhaps gloomy (for everyone at its discretion). Hungary, Slovakia, Bulgaria, and Poland left the EU and NATO but did not form their own alliance. Ukraine has become a nuclear state and can defend itself against Russian aggression, which has been stopped. The Roma state-building process is underway in Hungary and Slovakia. Most Polish cities are sprawling and divided by walls. The Ukrainians left, a lot of empty buildings and elderly people. The author perfectly describes the political and military culture of the Kremlin. The quiet occupation of historic Warmia by Russia forces the Polish to form a government loyal to Moscow, composed of people with extreme right-wing views. However, as befits a Polish author's story, the text ends with a description of the beginning of the upcoming uprising and national revival. The Polish insurgent tradition will survive in the literature of the 21st century.

The events in Wóycicki's novel take place locally, Poland - Ukraine - Russia. On the other hand, an American book published at the same time by a four-star admiral, former NATO Commander-in-Chief in Europe, along with a former Marine and CIA associate in Afghanistan, James Stavridis and Eliot Ackerman, *2034: A Novel of the Next World War* 2021 describes the war on a rock world. The American book will focus entirely on other regions and is a

global story about modern warfare as befits a general. In 1982 British general Sir John Hackett wrote the story *The Third World War: An Untold Story* which was shocking at the time as well. Hackett predicts the collapse of the USSR in 1982, the reunification of Germany, and the establishment of the European Confederation. In these two books, the Third World War does not start in Poland, which proves that the political importance of our region is quite low. Let us hope that this will not be the case, and the third world will not threaten us, and if it does, it will not explode in our region.

It can be considered that Kazimierz Wóycicki's text is a fantasy or a projection of his political fears or prejudices against Polish politicians from the 'Law and Justice' party. However, not so long ago, Donald Tusk used the comparison that the 'Russian ladder' is being built in Poland, and the 'Law and Justice' is ready to move Poland out of the European Union (media speculations about Polesxit appeared when the 'Law and Justice' came to power). The former Prime Minister of Poland and the President of the European Council are convinced that the Polish secret services cannot counteract the influence of the Russian services and that Poland is penetrated by Russian agents. On the other hand, the Ukrainian MP from the ruling Servant of the People party, David Arachmia, publicly stated that Ukraine's resignation from nuclear weapons was the biggest mistake after gaining independence in 1991. The Ukrainian MP is convinced that Ukraine with nuclear weapons could face Russian aggression. The *List of Agents* describes the occupation of Olsztyn by Russian-speaking people in field uniforms, pretending to be builders. The recent events on the Belarusian-Polish border can be seen by the citizens of Asia and Africa, behind which 'little green men' are hiding.

The tale raises an important issue in the philosophy of history "Who is responsible for historical changes? A person, an individual or there are objective historical conditions that cannot be changed by any president or dictator?" In a literary or political case, the question is very simple: can the agency and its number decide about the fate of the state, or whether history and politics decide about certain rules which it cannot overcome? Peculiarly, Wóycicki raised the Polish debate about espionage and the agent-based origin of all politicians as grotesque and national paranoia. The author is convinced that the actions of spies or agents may result in a completely different result than assumed by the headquarters, which we commonly call the irony of fate or the giggling of history.

Finally, I want to note that since 2017, the Global Institute of Ethics at the University of Tübingen has been running the Study Project Cassandra (Early Crisis Detection through Literary Analysis). The project was initiated by Jürgen Wertheimer, a professor specializing in comparative literary studies, and proved that literature could become an early warning system for war conflicts. German scientists based on an analysis of the 'literary infrastructure' will prove

that literature predicted a conflict in the Balkans, the Caucasus, and the Middle East. The institute's newest area of interest is the application of the method to the analysis of the geopolitical situation in Ukraine, Belarus, and Lithuania. In 2019, the team signaled that the next area where war could break out was the Armenian-Azerbaijani conflict over Karabakh.

Hopefully, Wóycicki's text remains a literary hyperbole and not an oracle of Kasandra. I encourage you to read it, and a careful observer of Polish political life of the last 8 years will easily find analogs of real Polish politicians, diplomats, and social activists who are less or more known from the Internet, news on TV, or real operational activities of secret services.

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