

**Kyiv National University of Trade and Economics**

**The World Economy Department**

**FINAL QUALIFYING PAPER (PROJECT)**

**on the topic:**

**Hybrid warfares in the world economy**

Student of the 2<sup>nd</sup> year, group 2am,  
specialty 051 “Economics”,  
specialization “International  
economics”

**Komarov Maksym**

\_\_\_\_\_  
*(student's signature)*

Scientific adviser  
Candidate of Sciences (Economics),  
Associate Professor of World  
Economy Department

**Sarkisian Larysa**

\_\_\_\_\_  
*(signature)*

Manager of the educational program  
Candidate of Sciences (Economics),  
Associate Professor of World  
Economy Department

**Kravets Kateryna**

\_\_\_\_\_  
*(signature)*

**Kyiv, 2021**

**Annotation.** Komarov Maksym. Hybrid warfares in the world economy. The final qualifying work is devoted to the topical problem of hybrid wars in the world economy.

The final qualification paper researches the theoretical basis of hybrid wars in the conditions of modern world economy are investigated. The impact of hybrid wars on the world economy as well as on the economy of individual regions is assessed. The main ways of development of Ukraine 's economy in the conditions of hybrid war are determined. Forecasts for the development of Ukraine's economy in a hybrid war with Russia are placed.

**Key words:** hybrid war, trade war, sanctions, cyberwarfare, economic warfare, separatism, propaganda.

**Анотація.** Комаров Максим Сергійович. Гібридні війни у світовій економіці. Випускна кваліфікаційна робота присвячена актуальній проблемі гібридних війн у світовій економіці.

У випускній кваліфікаційній роботі досліджуються теоретичні основи гібридних війн в умовах сучасної світової економіки. Оцінено вплив гібридних війн на світову економіку а також на економіку окремих крїїн. Визначено основні шляхи розвитку економіки України в умовах гібридної війни. Надано прогнози щодо розвитку економіки України в умовах гібридної війни з Росією.

**Ключові слова:** гібридна війна, торговельна війна, санкції, кібервійна, економічна війна, сепаратизм, пропаганда.

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## INTRODUCTION

**The relevance of the topic** is that modern wars, which are usually called hybrid ones, represent a whole spectrum of multi-level systemic actions, a mixture of classical and irregular warfare, a combination of military and non-military, permitted and prohibited methods of struggle, the use of "ordinary war, small war, cyber war, information war."

These are "war not according to the rules" and "strikes at the enemy's vulnerabilities", the use of diplomacy, political pressure, economic sanctions, and military force.

Some of its elements were foreseen back in the 20s of the last century and the possible nature of the state's activities on numerous "war fronts" - political, diplomatic, economic, internal, in the field of undermining the spirit of the enemy and in the field of armed struggle was determined.

This topic is especially relevant today in the conditions of the hybrid war of the Russian Federation against Ukraine.

**Analysis of the level of development of the topic.** Research and analysis of issues related to the nature of hybrid warfares, their reasons, characteristics, methods and impact on international economic relations as well as influence on economy of Ukraine are covered in the works of a number of foreign and domestic scientists, including V. Gorovenko, P.P. Hai-Nyzhnyk, V.P. Horbulin, I.V. Todorov, N.Popescu, and P. Marton.

**The purpose** of this final qualifying work is to analyze the essence of hybrid wars, highlight their features and assess the impact of hybrid wars on the modern world economy.

According to the purpose, the following **objectives** were set:

- to analyze the main features of hybrid wars in the world economy;
- to highlight the main methods of hybrid wars;
- to analyze the essence of trade wars using the example of the trade war between the United States and China;

- to determine the main factors of the influence of hybrid wars on trade relations between countries;
- to make proposals and forecasts for the development of the Ukrainian economy in the context of a hybrid war with the Russian Federation.

**The object** of research is the process of development of hybrid warfare strategies in the world economy. **The subject** of research is theoretical principles and organizational and economic levers of formation of hybrid warfare impact on the world economy.

**Research methods.** Different scientific and economic methods and models were used in the project. The scientific methods, used during the research, can be divided into general scientific methods applied in theoretical part and specific scientific methods applied in the practical part of the study. The former methods are synthesis and analysis, induction and deduction, literature review, which were used to understand the essence, main features of the object and to draw conclusions. The latter methods are comparative and historical methods used for analyzing current state with the past, statistical and mathematical methods used for estimating financial indicators and effectiveness, and extrapolation method used for forecasting the future state of the enterprise.

**The scientific novelty** stems from the summarizing, analysis and comparison of the scientific works about hybrid warfares of foreign and domestic scientists. The main key points of hybrid wars' influence to the world economy were defined and the forecast for the development of the Ukrainian economy in the conditions of a hybrid war was made.

**The practical novelty** is in the development of a forecast for the development of the Ukrainian economy during the COVID-19 pandemic and a hybrid war with Russia, which can be considered and implemented.

**Approbation and utilization of research results:** article “Hybrid warfares and their impact on the economic relations of the participating countries on the example of the russian-ukrainian hybrid war”, KNUTE, Kyiv, 2021

**Structure and volume of the final qualifying paper.** The project consists of an introduction, three sections, general conclusions and references.

In the first section, we analyze the definition of the concept of hybrid wars, define their main methods, causes and constituent concepts. We also define the concept and basic methods of economic warfare, analyze the role of information warfare and cyber warfare in modern hybrid wars.

In the second section, we identify the main stages of the trade war between the United States and China, analyze the economic indicators of these countries before and during the trade war, identify the main points of influence of the trade war on the economies of the United States and China, as well as on the world economy as a whole. We will also determine the impact of sanctions on the economies of the Russian Federation, the United States, as well as other countries in Europe and the world.

In the third section, we highlight the main stages of the hybrid war of the Russian Federation against Ukraine, analyze the impact of the war on the economy and other aspects of political and civil life, predict the main ways of development of the Ukrainian economy in the context of a hybrid war with the Russian Federation.

The conclusions part summarizes research and outline the topic of the final qualifying paper. The total volume of the paper is 50 pages, not including the list of used sources - 6 pages (58 items). The paper uses 15 figures and 3 table.

## SECTION 1: THEORETICAL PRINCIPLES OF HYBRID WARFARES IN TRADE AND ECONOMIC RELATIONS

### 1.1 The meaning and constituent concepts of the term «Hybrid warfare»

Modern problems require modern solutions. Nowadays, conflicts between states are not always resolved by only military actions because there is cheaper, less devastating and much more disguised way. This way is hybrid warfare –a military strategy that combines conventional warfare, asymmetric warfare (also called irregular warfare), and cyber warfare operations [1].

The former director of the military academy of the ETH Zurich and today's commander of the general staff schools, Daniel Lätsch, assumes that the term was first used in 2005 by the military author and political scientist Frank G. Hoffman. "Hoffman defines hybrid warfare as a combination of conventional and irregular modes of combat in connection with terrorist actions and criminal behavior" [2].

The attacker carries out strategic coordination of these actions, while maintaining the possibility of plausible denial of his involvement in the conflict. The classic examples of hybrid military operations in the late XX - early XXI centuries are called the wars in Afghanistan (the actions of the USSR in the initial period of the Afghan war (1979-1989), as well as the actions of the United States, Pakistan, China and other states to support dushmans and during the armed struggle against Taliban). Hybrid warfare can be preceded by so-called asymmetric warfare, which can develop into hybrid warfare as the skills of the rebels grow [3].

Compared to classic warfare, hybrid warfare has the following features:

- a hybrid war is not declared, military actions may not be carried out for a long time, there is no front and rear, and operations cover the entire territory of the victim state;
- the aggressor state for a certain time does not reveal itself, does not carry out large-scale mobilization measures, seeks to wage war with someone else's hands, uses

mercenaries, private military companies, activates the actions of internal irregular formations, the "fifth column" and agents of influence;

- formally, there is no single governing center for a hybrid war, a common target for the destruction of the enemy state is being developed and agreed upon at the level of government agencies, the leadership of transnational corporations, financial and banking structures, and individual influential persons;

- action plans to destabilize the administrative-political, socio-economic, cultural and ideological spheres provide for the creation of distributed network structures on the enemy's territory with a high degree of independence and the ability to self-synchronize. The channels of their financial, material and technical, informational, personnel support is being worked out in advance, warehouses of weapons, ammunition, communications are being created, places are being selected for training militants;

- catalysts-accelerators of subversive processes are used, in particular, diplomatic demarches, economic sanctions, information stuffing and, especially, successful actions of irregular forces against important objects; a powerful catalyst - the "color revolution", organized at a critical turning point of the war in order to accelerate the process of avalanche-like destabilization of the state; timely opening of the preparation of operations aimed at accelerating the processes of the collapse of the state is the most important task of intelligence;

- special operations forces are used against strategically important targets, to kidnap and assassinate political leaders and provide support to irregular militias;

- regular armed forces begin to operate in the final stages of a hybrid war under the pretext of "humanitarian intervention", an operation to enforce peace. Obtaining a UN mandate for this is desirable, but not necessary [4].

The essential difference between the strategies of hybrid and conventional war is that in the former, the use of the armed forces itself is not the only prerequisite for achieving victory over the enemy. The hybrid war strategy pursues a decisive goal: the defeat of the enemy by inflicting defeat on him on all fronts: information, economic, military, diplomatic. It is a way to achieve victory in a new type of conflict, which will



have an important and sometimes decisive influence on the development of modern society for many decades to come. It is the strategy that determines the goal-setting of the conflict, the necessary and sufficient format for the country's participation in war operations, as well as issues related to the use of all the country's resources for victory.

The development and implementation of a hybrid warfare strategy includes the following steps from the following figure 1.1:

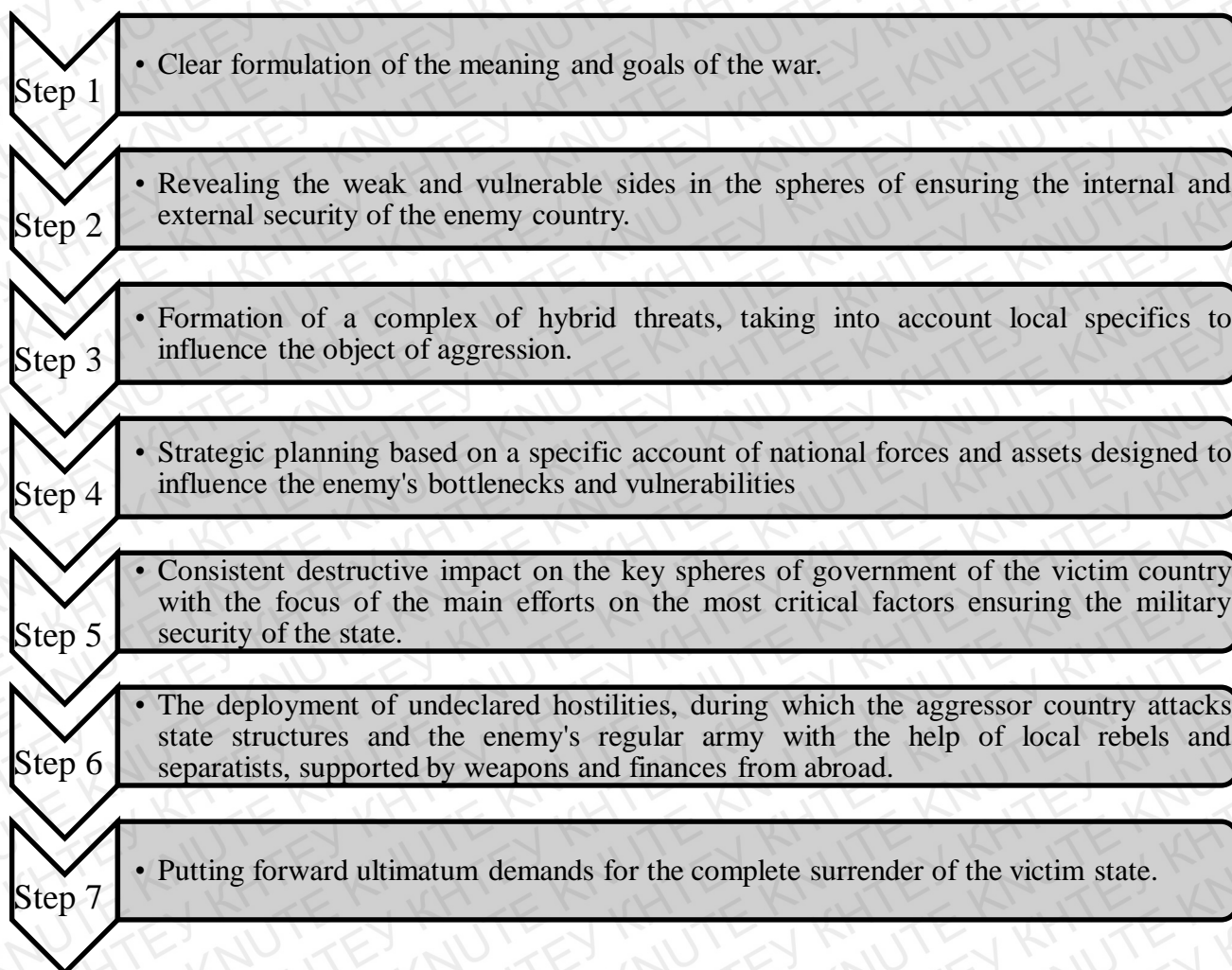


Figure 1.1 Main stages of hybrid wars

Source: own study based on [4]

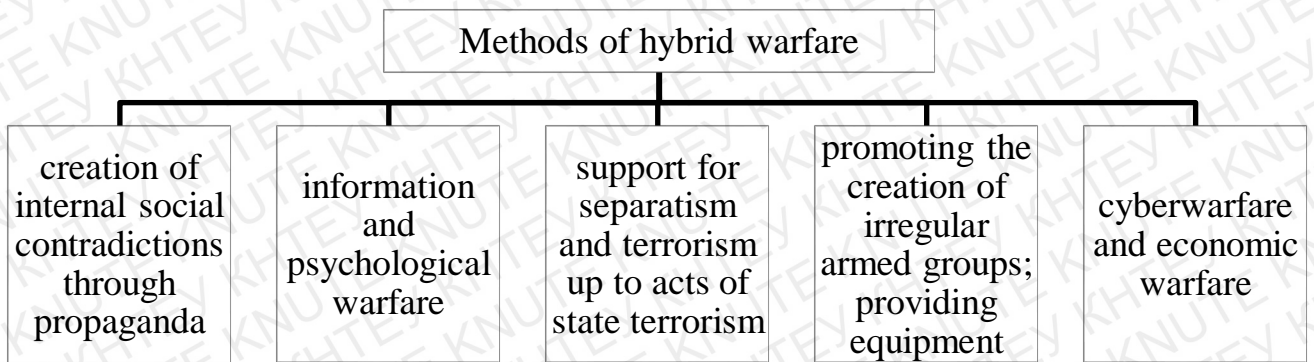
The nature of hybrid warfare allows the attacker to stretch hostile actions for a long time, testing the strategic patience of the enemy - usually time plays in favor of the side using the methods of hybrid warfare [4]. This effect is especially pronounced in the case of a regular army involved in a hybrid war on foreign territory.

Hybrid warfare does not change the essence of war. Violence remains the basis of hybrid warfare, as in any other form of war, and their purpose is the same as in any other act of war, namely, to use the threat of use or the use of organized violence to obtain a physical or psychological advantage over the enemy. While the term "hybrid" is by far the most popular term at the moment, it is by no means the only one to describe these wars. The fact that many armed conflicts blur the line between war and peace and use tools that are traditionally not part of hostilities further complicates the problem. This is undoubtedly a challenge for the traditional security sector establishment, which must address a wide range of threats identified by analysts and theorists of hybrid warfare. If the web of definition is spread too broadly, the term hybrid warfare becomes too pervasive for practical use by politicians. Defined too narrowly, policymakers fail to grasp the significance of many unconventional technologies used by the adversary as a prelude or addition to the use of military force.

## **1.2 Main methods of Hybrid warfare**

Hybrid wars have been known since ancient times, although the technology was different. The methods of hybrid warfare in ancient times include the poisoning of wells and bribery of the defenders so that they open the gates of the fortress [3]. Since ancient times, military strategists have considered different methods for militarizing different means and, secondly, that what we now call "hybrid" is not something particularly new. Moreover, using insurgents and guerrillas is not only a 21st century strategy.

Hybrid warfare combines fundamentally different types and methods of warfare, which are used in a coordinated manner to achieve the main goals. Typical components of hybrid warfare are the use of methods that contribute to the occurrence and deepening of internal conflicts in a state chosen for aggression. Figure 1.2 shows main methods of hybrid warfare.



*Figure 1.2 Methods of hybrid warfare*

Source: own study based on [4]

As we can see in the figure 1.2, one of the methods of hybrid warfare is to support existing counter-trends in the affected country in the form of people, ideas and media that can help in delegitimizing power and the state. Hybrid warfare takes military steps, but the propaganda war is aimed at proving the opposite, that there is no war at all. Propaganda is the dissemination of views, facts, arguments and other information in order to form the desired public opinion.

For propaganda, it is necessary to have an idea, target audience and funds to convey the idea to the target audience. The effectiveness of propaganda is determined by the ratio of the actual number of attracted supporters to the planned number. There are three main criteria for the content of effective propaganda:

- the presence of a central thesis;
- easy to understand by the target audience;
- difficulty for criticism (the validity of the theses, their consistency with each other, etc.; or at least the appearance of this).

Moreover, there must be a balance between ease of understanding and difficulty for criticism. If the balance is not met, then either the ideas will simply be incomprehensible to a significant part of the target audience, or they will be too vulnerable to counter-propaganda. However, it is necessary to distinguish between purely propaganda and purely military actions. In turn, hybrid wars have military goals, but not military means to achieve them.

Information-psychological warfare appeared as a form of information confrontation at a certain stage of development of means and methods of information-psychological influence and is the most socially dangerous form of this confrontation, carried out by violent means and methods of influencing the information-psychological sphere of the enemy in order to solve strategic tasks.

In the course of the information war, reality is replaced by artificially created virtual models, within which mass opinions, perceptions, preferences, reactions and attitudes towards specific events, processes, phenomena are created that are beneficial for the aggressor country. Also, exemplary mass behavior of the target audience is born, to which manipulative influence is directed.

Manipulation of public consciousness is a latent influence on the consciousness of people and control of their behavior, in order to induce the audience to take specific actions that are alien to their views, in the interests of the subject of political manipulation. Purposeful distortion of information is the most important component of manipulative influence.

Separatism is the advocacy of cultural, ethnic, tribal, religious, racial, governmental or gender separation from the larger group [5]. This is a special type of political and other movements or trends based on ideology that calls for and leads to the separation of a part of the territory from the state. Such movements occur, as a rule, against the background of civil unrest and are aimed at separating the territory from the state, eliminating its sovereignty over this part [6]. This can be autonomy within state borders, joining another state, or the creation of an independent territorial entity with its own borders and independent management.

State terrorism is violence by the state that has no legislative or judicial support and can be practiced by state law enforcement agencies both within the state (against its internal enemies) and abroad - up to special operations against other states [7].

Cyberwarfare is a confrontation in cyber space, including a computer confrontation on the Internet, one of the varieties of information warfare. It is primarily aimed at destabilizing computer systems and access to the Internet for government agencies, financial and business centers and creating chaos and chaos in the life of countries and

states that rely on the Internet in their daily life. Interstate relations and political confrontation often continue on the Internet in the form of cyber war and its components: vandalism, propaganda, espionage, direct attacks on computer systems and servers, and so on [8].

A UK dictionary defines economic warfare, or economic war as involving "an economic strategy based on the use of measures (e.g. blockade) of which the primary effect is to weaken the economy of another state" [9].

In military operations, economic warfare may reflect economic policy followed as a part of open or covert operations, cyber operations, information operations [10] during or preceding a war. Economic warfare aims to capture or otherwise to control the supply of critical economic resources so friendly military and intelligence agencies can use them and enemy forces cannot.

The concept of economic warfare is most applicable to conflict between nation states, especially in times of total war, which involves not only the armed forces of enemy countries, but also mobilized war-economies. In such a situation, damage to an enemy's economy is damage to that enemy's ability to fight a war. Scorched-earth policies may deny resources to an invading enemy.

Policies and measures in economic warfare may include blockade, blacklisting, preclusive purchasing, rewards and the capturing or the control of enemy assets or supply lines[11]. Other policies, such tariff discrimination, sanctions, the suspension of aid, the freezing of capital assets, the prohibition of investment and other capital flows, and expropriation,[12] even without armed military war, may be referred to as economic warfare.

In economic confrontation, economic war is aimed at obtaining one of the parties to the economic confrontation of certain economic benefits through the redistribution of trade markets or a change in favor of one of the parties to the price balance. Economic war as a component of political confrontation is aimed at gaining one side of the confrontation of certain political advantages by encouraging the other party to make political concessions, gaining or expanding political influence on the other side. At the same time, the tasks of economic confrontation are also achieved. Economic warfare as

a component of a hybrid war is aimed at the political subordination of one of the parties and the achievement of other goals, which are usually achieved by classical wars. At the same time, the tasks of political confrontation are also achieved.

Unlike a classic war, the economic relations of the parties during a hybrid war are usually not completely broken, which allows the aggressor country to hide its participation in the hybrid war, and the victim country - to obtain critical resources for it. However, both sides are also interested in reducing the level of economic relations, which, in general, is assumed by the very nature of hybrid warfare. Figure 1.2 shows main methods of economic warfare.

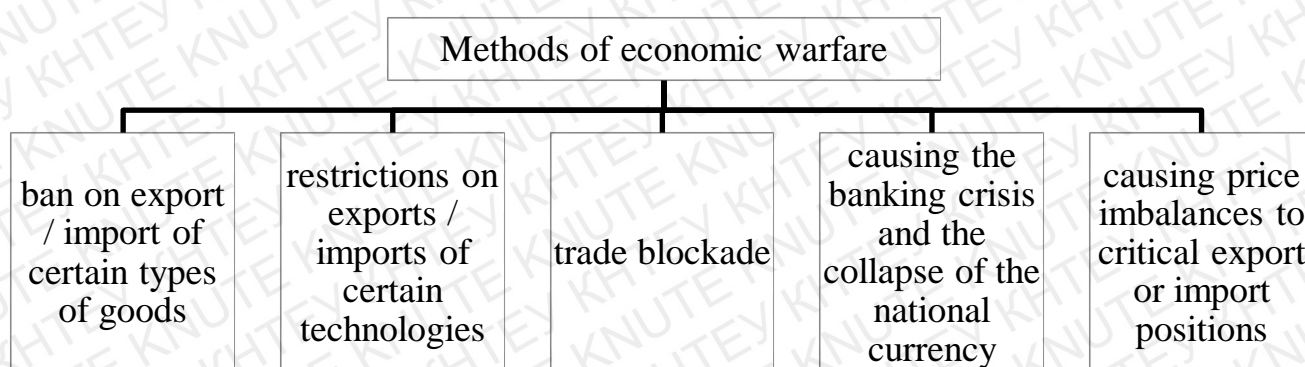


Figure 1.3 Methods of economic warfare

Source: own study based on [10]

If these methods of war from the figure 1.3 are effective, the aggressor state can achieve its aggressive goals and consolidate success by acting as a peacemaker in internal conflict. If these methods are ineffective, the aggressor can use:

- other methods of waging war with the involvement of third countries in the conflict;
- classic methods of warfare with covert local limited use of their own armed forces or through undisguised aggression.

Thus, hybrid warfare is a combination of conventional, irregular, and asymmetric means, including the constant manipulation of political and ideological conflict, as well as the involvement of special operations forces and conventional armed forces, intelligence agents, political provocateurs, the media, and economic blackmail; cyberattacks; paramilitary, terrorist and criminal elements, etc.

## **Conclusions to the section 1**

At the present stage, the phenomenon of hybrid warfare is a very relevant format of aggressive action against the state, expressed not only and not so much in the military plane. The arsenal of technologies of "hybrid" war includes political propaganda, defamation and comprehensive misinformation, terrorist actions and mechanisms of economic and financial pressure, subversive activities of special services in the enemy's territory and technologies of distortion of the information space.

The term "hybrid" refers to the use of all available means of pressure on the enemy, among which military operations are important but secondary.

To understand the essence of hybrid wars, which means a combination of conventional, irregular and asymmetric means, including constant manipulation of political and ideological conflict, as well as the involvement of special operations and conventional armed forces, intelligence agents, political provocateurs, media representatives, economic blackmail; cyberattacks; paramilitary, terrorist and criminal elements, etc.

## SECTION 2: ANALYSIS OF THE IMPACT OF MODERN HYBRID WARFARES ON TRADE AND ECONOMIC RELATIONS

### 2.1 The impact of the hybrid warfare on the world economy on the example of the trade war between the USA and China

One of the main methods of influence during a hybrid war is an economic war that is realized through trade rivalry between two or more parties, which is conducted in order to capture foreign markets or prevent trade "occupation" of the national economy.

Such actions can also be called a trade war. A trade war can be waged in the context of a larger confrontation - the so-called economic war. There are two types of trade wars: offensive and defensive. The main methods of conducting an offensive trade war are depicted in figure 2.1.

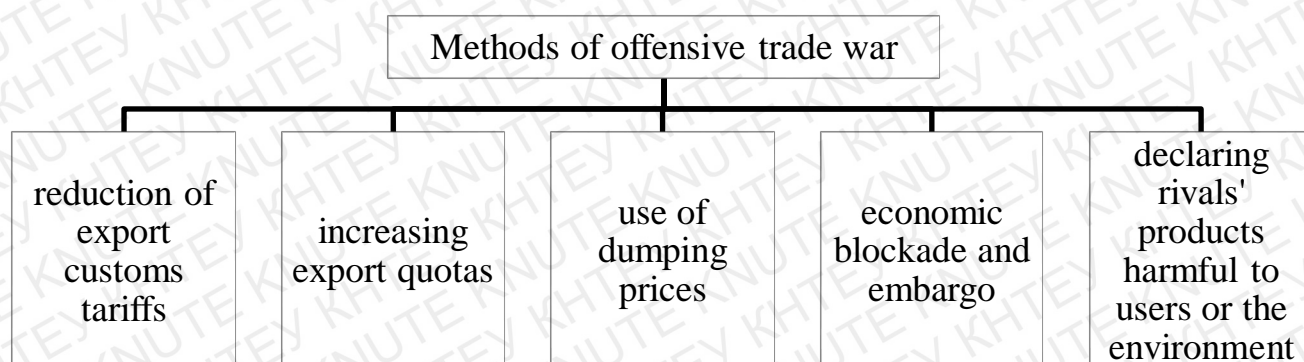


Figure 2.1 Methods of offensive trade war

Source: own study based on [13]

The main purpose of the offensive trade war - the capture of foreign markets. The main purpose of a defensive trade war is to prevent the trade "occupation" of the national economy. The main methods of defensive trade war:

- increase in import customs duties;
- reduction of import quotas;
- introduction of non-tariff restrictions - barriers associated with complicating the licensing procedure and piling up customs formalities;



- introduction of technical barriers, providing for the emergence of difficulties with the compliance of imported goods with national standards and technical conditions.

Trade wars - a constant companion of mankind since its entry into the state-organized level of production and distribution activities. Before Adam Smith and the physiocrats of the time, no thinker believed in free trade. The economic policy of past epochs was to increase its own exports and comprehensively suppress the export opportunities of the other side.

In the nineteenth century, bilateral trade agreements flourished, culminating in the emergence of a regime most conducive to interstate trade relations. The consequence of this development was a reduction in the scale of trade wars. However, the revival of state protectionism in the 1920s and 1930s restored them. Since the 1960s, world trade policy has become multilateral rather than bilateral. It is quite natural that the bilateral level of trade wars was supplemented by their multilateral analogue at the level of supranational economic associations or entire regions [13].

Trade wars are usually considered a side effect of protectionism. Protectionism refers to government actions and policies that restrict international trade. A country will generally undertake protectionist actions to shield domestic businesses and jobs from foreign competition. Protectionism is also a method used to balance trade deficits. A trade deficit occurs when a country's imports exceed the amounts of its exports. A tariff is a tax or duty imposed on the goods imported into a nation. In a global economy, a trade war can become very damaging to the consumers and businesses of both nations, and the contagion can grow to affect many aspects of both economies.

A trade war that begins in one sector can grow to affect other sectors. Likewise, a trade war that begins between two countries can affect other countries not initially involved in the trade war [14].

The most relevant and well-known example of a trade war is the US-China trade war. The US-China trade war began in July 2018 under the administration of then-US President Donald Trump, eventually leading to tariffs on some US \$ 550 billion of Chinese goods and US \$ 185 billion of US goods.

A phase-one trade deal between the two sides was signed in January 2020, although relations have not significantly improved under the administration of US President Joe Biden [15].

The economies of the United States and China are the largest in the world (if not counting the eurozone countries as a whole). Since the turn of the century, they have together been responsible for a third of global GDP growth. And their interdependence has grown dramatically over the past two decades.

An important starting point for China's integration into world production chains was the country's accession to the WTO in 2001. This event was preceded by more than ten years of difficult negotiations.

Since China's accession to the WTO, the United States has opened up its consumer market for China and provided the country with opportunities for export-oriented growth. The growth in trade turned out to be unprecedented - in 2001, the volume of Chinese merchandise imports to the United States amounted to \$ 102 billion, and by the end of 2020 it increased to almost \$ 435 billion. At the same time, the US deficit in trade with China also more than tripled, from \$ 83 billion. in 2001 to \$ 310 billion in 2020. Figure 2.2 shows changes in US trade with China.

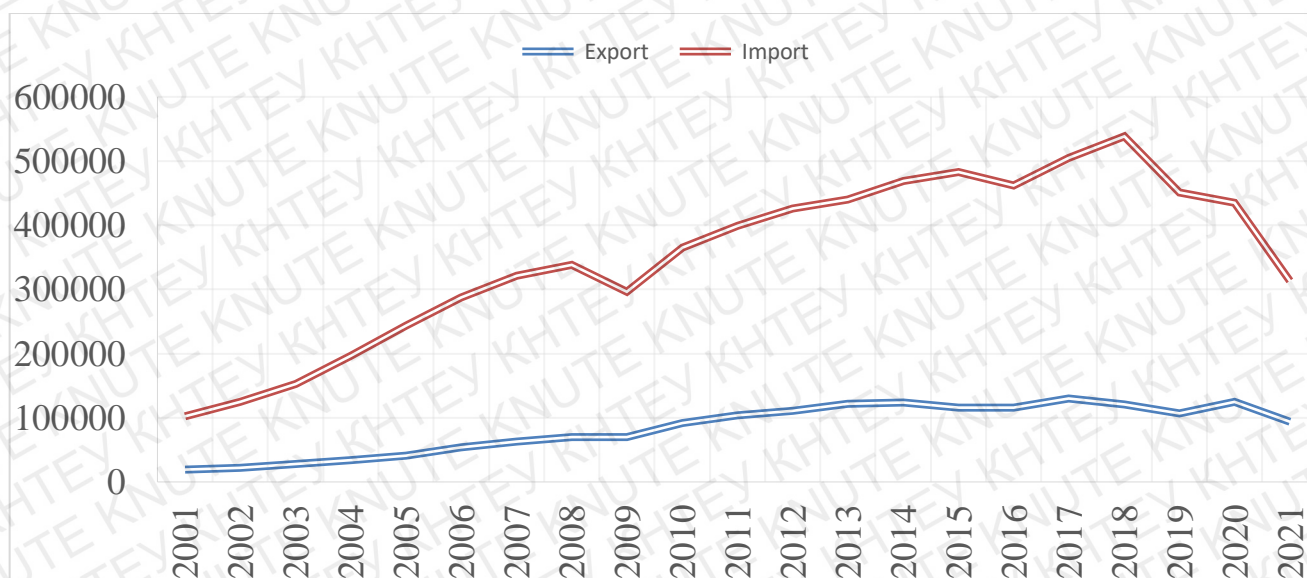


Figure 2.2 US trade with China (goods), 2001-2021, billion USD

Source: own study based on data of United States Census Bureau [16]

As we can see in figure 2.2, trade relations between the United States and China began to deteriorate since 2018. Despite the fact that the data for 2021 is marked as of August, there is still a negative trend. These are all consequences of the trade war. Figure 2.3 shows changes in tariffs between US and China.

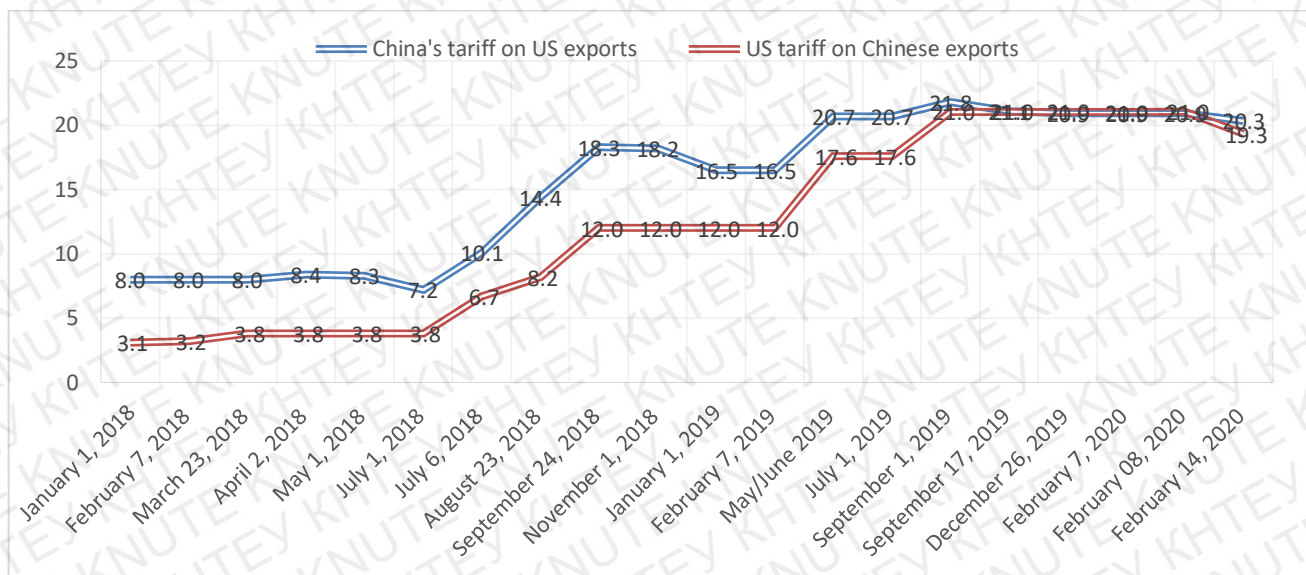


Figure 2.3 US - China tariff war, January 2018-February 2020, %

Source: own study based on data of United States Census Bureau [16]

If we look at the figure 2.3, the first trade volley was fired by the US in early 2018, but the bilateral trade war between the US and China really intensified in July 2018. That month, the United States imposed a 25% duty on Chinese goods worth \$ 34 billion. In response, Beijing mirrored tariffs by \$ 34 billion. Since then, duties have continued to rise. Figure 2.4 shows trade between the US and China.

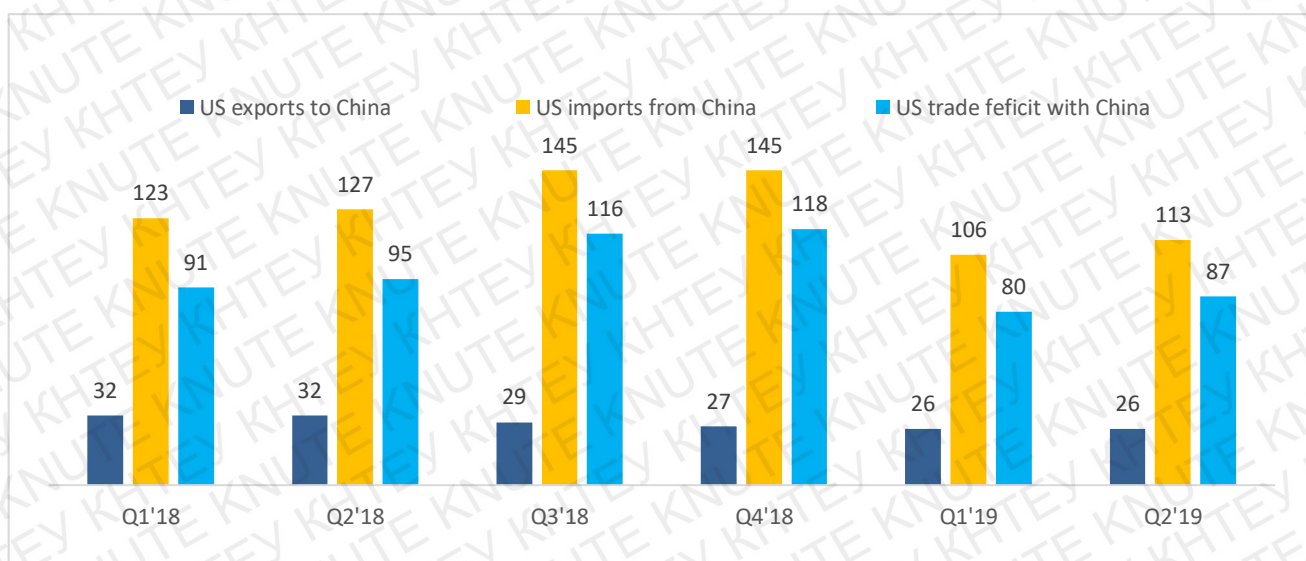


Figure 2.4 Trade between the US and China, January 2018-June 2019, billion USD

Source: own study based on data of United States Census Bureau [16]

As we see on the figure 2.4, the United States and China were major trading partners in 2018, but Mexico and Canada surpassed China to become the top two US partners in 2019. They are the same today.

The consequences of the trade war are also reflected in the export of soybeans on the figure 2.5.

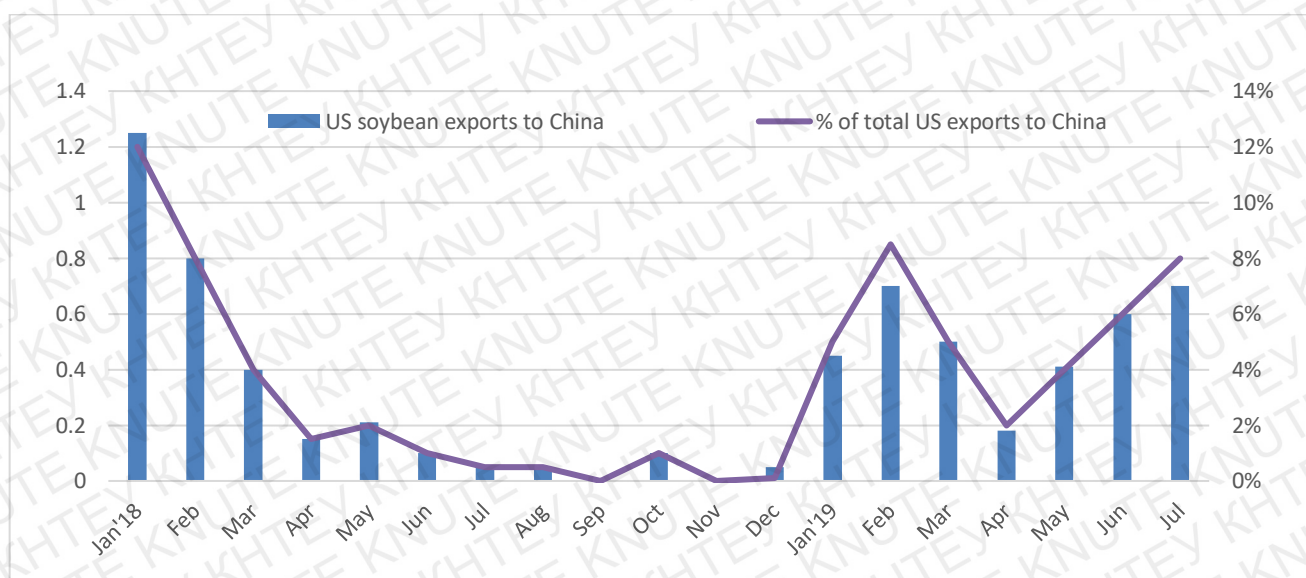


Figure 2.5 Spotlight on Soybeans, January 2018-July 2019, billion USD

Source: own study based on data of United States Census Bureau [16]

Figure 2.5 depicts the impact of the trade war on the example of a graph of soybean exports. Soy is one of the main US exports to China, as China is the world's largest buyer of agricultural products, including soybeans. China has used the cut in purchases of some agricultural commodities in an attempt to punish American farmers and put pressure on former US President Donald Trump.

There are three main reasons for the trade war:

1. One of the most important factors is the theft of intellectual property and the forced transfer of technology. Such unfair Chinese trade practices threaten the high-wage employment and high-value-added manufacturing sector in the United States, US officials said. The data shows that the United States incurs annual costs of up to \$ 600 billion from the trade in counterfeit goods, pirated software and trade secrets in China. In addition, these costs do not include additional costs for companies to protect

intellectual property, reduced incentives for investment, reduced innovation and the impact on the employment of skilled labor in the United States.

2. China's economic model and its state-owned enterprises, which are controlled by the Chinese Communist Party. The use of state-owned enterprises, their access to subsidies, and the limited rule of law in China support state-owned companies in China and around the world.

3. A protectionist policy pursued by China, which requires the global market to be open to its companies, but does not want to open its own market to global business. China officially declares that it never violates its obligations, strongly supports multilateralism and an open economic policy, and calls for mutually beneficial global cooperation. However, it does not honor its obligations to the World Trade Organization, and its economic model, in which the state controls both public and private business, makes it difficult to use the WTO rules and its dispute settlement system [17].

Thus, the trade war is not the result of political containment, but a consequence of economic problems. It is important to note that China became a WTO member with strong support from the United States. Bill Clinton, who supported China's accession to the WTO, expressed the hope that this will lead to changes in the Chinese economy, and with its opening, it will become a responsible player in the global economy. In fact, this did not happen. The Chinese market remains closed and foreign companies cannot access it. Thus, the main impact of the trade war will be a change in world trade, in particular global supply chains.

After the global financial crisis of 2008-2009. China began to gradually move away from the export-oriented model and rely more on domestic infrastructural development, combining the latter with the same protectionist measures. Attracted by the growing Chinese market, Western companies faced severe restrictions on doing business in the country, often due to some form of technology transfer to Chinese partners.

This protectionist policy has led to complaints from multinational corporations to their own governments, which in turn have filed complaints with the WTO. However, the scale of the Chinese market forced a compromise - the risk of losing market share in such a gigantic market often outweighed the risk of losing know-how. In general, in

studies of China's growth over the past 40 years, the effect of multiplying the protectionist-developmental model on the scale of the economy is clearly underestimated.

The ongoing industrial upsurge in China appears to be of serious concern to the United States. And the main goal of the United States in the current trade war is much more ambitious than simply eliminating imbalances in trade with the PRC: to complicate and, if possible, interrupt China's mastery of modern high technologies. The introduction of tariff restrictions on Chinese imports is only part of the picture. The United States has consistently introduced trade restrictions on high-tech companies from the PRC.

The clearest example and proof of the US trade war against China are the sanctions against the Huawei. Huawei Technologies Co., Ltd is a Chinese multinational technology corporation headquartered in Shenzhen, Guangdong, China. It designs, develops, and sells telecommunications equipment and consumer electronics [18].

On December 1, 2018, Meng Wangzhou, the daughter of the company's founder Ren Zhengfei, was arrested in Vancouver, Canada. The arrest was carried out at the request of the United States, where she is suspected of violating trade sanctions against Iran. The Ministry of Foreign Affairs of the People's Republic of China expressed a strong protest to the United States in connection with the detention of Meng Wangzhou.

On December 11, 2018, after three days of hearings, the British Columbia Supreme Court ordered Meng Wangzhou to be released on Canadian \$ 10 million bail. In addition to posting bail, the court also ordered Ms. Wangzhou to surrender her passports and wear an electronic bracelet on her leg [19].

Many US allies rushed to cut cooperation with the Chinese corporation. German Chancellor A. Merkel promised to continue business with Huawei despite the US ban. The European Union has supported this line, while strengthening its cybersecurity control.

In June 2020, Reuters reported on new documents in its possession that confirm Huawei's direct relationship with Skycom Tech Co Ltd, which supplied the prohibited equipment to Iran.

On May 15, 2019, US President Donald Trump introduced an emergency regime to protect the country's communication networks by blacklisting Huawei, which should significantly complicate the sale of products in the United States. China reacted negatively to this decision.

Since May 20, Google ceased cooperation with Huawei, which means it will be disconnected from the Android system, but continued to support current Huawei smartphones until August 19, 2019. Earlier, Google called for this US congressmen.

On May 22, the British company ARM ended its cooperation with Huawei, due to which the company lost production of its own Kirin processors. At the same time, the head of Huawei, Ren Zhengfei, said that the United States underestimated his company, although he admitted dependence on American chip manufacturers.

On May 23, due to sanctions, the factories of the Taiwanese company Flex, which produces Huawei smartphones, stopped working, but the company resumed operations on May 28. On May 25, the Wi-Fi Alliance and SD Association removed Huawei from the Wi-Fi Alliance and SD Alliance, but then resumed cooperation only within the framework of a three-month grace period [20].

On June 17, the company cut its revenue forecast for 2019-2020 by \$ 30 billion. On May 13, 2020, US President Donald Trump in his new order extended the ban on cooperation of American firms with companies posing a threat to national security until May 2021. The document does not mention specific manufacturers, however, in fact, it imposes a ban on cooperation with Huawei and ZTE [21].

In the summer of 2021, it became known that the United States had approved the company's applications for the purchase of microcircuits for a total amount of several hundred million dollars. They are used for the production of screens and sensors.

## **2.2 The impact of the hybrid warfare on the world economy on the example of the hybrid war between Ukraine and Russian Federation**

The main goal of the Russian Federation in the hybrid war against Ukraine is to weaken and decentralize Ukraine, change its European course, and return Ukraine to

Russian control. Prerequisites for the beginning of the hybrid Russia's war against Ukraine is:

- the presence in Russia of a significant political stratum, interested in realizing his own imperial ambitions;
- Russia's desire to return the world from a multipolar state to a bipolar state;
- awareness of the Russian leadership of the threat posed Ukraine will be successful for it;
- dependence of a large part of the EU on supplies Russian energy sources.

An analysis of events in the ARC and in eastern Ukraine shows that Russia's hybrid war against Ukraine was not urgent. The Russian Federation has been preparing for these events for a long time, exerting influence on the leadership of Ukraine [22].

Characteristic features of the current hybrid war are:

- aggression without an official declaration of war;
- concealment by the aggressor country of its participation in conflicts;
- active use of asymmetric combat action and network warfare, that is, war that has no one and an explicit center for war management;
- widespread use of irregular weapons formations (including under the guise of civilians) under slogans and under the guise of civil war;
- participation of nonstate actors by aggressor states - like "political men" or "volunteers" - who are actually mercenaries who do not fall under international law;
- mutual measures of political and economic pressure;
- confrontation in cyberspace;
- are carried out against the weak points of the state and the local population;
- do not have a clear rear and front;
- struggle and terror are widely used information methods;
- instant reaction to changes in the situation and flexibility management, in the appearance of its absence (controlled chaos).

In addition, the simultaneous use of all methods and technologies is another distinctive feature, as it includes both soft and hard technologies to mislead and influence



the state's leadership, as well as its inclusion in its sphere of influence. Among these methods and technologies should be noted some in which the aggressor has reached a certain perfection:

- intelligence and counterintelligence;
- information, disinformation and propaganda war, which has now become a powerful tool of warfare;
- cyber warfare;
- extensive use of special units;
- widespread use of non-governmental factors (business, illegal armed groups, religious organizations, crime, individuals), operating relatively independently, but under general direction and centralized management;
- widespread use of terrorist acts and subversive acts;
- energy war;
- economic war, including trade, financial and other instruments [23].

Donbass is of great importance for the industrial production of Ukraine. Prior to the 2014 revolution, the region accounted for about a quarter of the country's exports and more than 15% of capital investment. Donbass was a supplier of raw materials such as coal, steel and other industrial goods for production abroad. As of August 2014, industrial production in the Donetsk economic region - Donetsk and Luhansk regions - decreased by 60% and 85%, respectively, due to power outages and destruction of transport infrastructure. In general, the main reasons for the decline in economic activity in Ukraine are large reductions in trade and jobs, agricultural and financial losses, reduced government spending, and partial military mobilization, along with growing political instability.

On the other hand, the Russian Federation has also suffered considerable losses in connection with the aggression against Ukraine. Since 2014, the EU and the United States have imposed more than 90 different economic sanctions against Russia to control Russia's aggression. Sanctions against Russia are restrictive measures imposed on Russia

and a number of Russians and individuals and organizations involved in the annexation of Crimea and the destabilization of the situation in eastern Ukraine.

In mid-March 2014, following the annexation of Crimea, the United States, the European Union, Australia, New Zealand and Canada introduced the first package of sanctions. These measures included an asset freeze and the introduction of visa restrictions for persons included in the sanction's lists (there are US and EU lists), as well as a ban on companies of countries that imposed sanctions from doing business with persons and entities included in the lists.

The subsequent expansion of sanctions in April-May 2014 was associated with the aggravation of the situation in eastern Ukraine. The organizers of the sanctions accused Russia of actions aimed at undermining the territorial integrity of Ukraine, in particular, in the supply of weapons to pro-Russian rebels.

The next round of sanctions was associated with the Boeing 777 disaster in the Donetsk region on July 17, 2014, which, according to the leadership of a number of states, was caused by the actions of the rebels supported by Russia.

In turn, in response to the imposition of sanctions on March 17, 2014, the Ministry of Foreign Affairs of the Russian Federation called the US sanctions against Russia "a reflection of a pathological unwillingness to recognize reality and a desire to impose on everyone its unilateral, unbalanced and completely ignorant of reality approaches" [24].

After the payment systems Visa and MasterCard, at the request of the US Treasury Department, froze operations on plastic cards of several domestic banks, Russia intensified efforts to create its own national payment system. There are talks about switching to the Chinese payment system UnionPay or the Japanese JCB. The State Duma demanded compensation from Visa and MasterCard. On March 27, 2014, the President of the Russian Federation Vladimir Putin approved the creation of a national payment system in Russia. According to forecasts, with the complete cessation of operations in Russia, the lost income of Visa and MasterCard will amount to 400 and 160 million dollars per year, respectively [25].

On August 6, 2014, by the decree of the President of Russia "On the application of certain special economic measures in order to ensure the security of the Russian

Federation", the import into the territory of the Russian Federation of "certain types" of agricultural products, raw materials and food was prohibited, the country of origin of which is the state that made the decision to impose economic sanctions in relation to Russian legal entities and (or) individuals or acceded to such a decision. In particular, the countries of the European Union, the USA, Australia, Canada, and Norway fell under the embargo. A specific list of goods subject to restrictions was determined by the government of the Russian Federation. The list includes meat and dairy products, fish, vegetables, fruits and nuts. The total annual volume of sanctioned imports is estimated at US \$ 9 billion [26].

As of 2020, the economic effect of the sanctions turned out to be minimal, estimates of the reduction in Russia's GDP growth vary between  $-0.2\%$  per year (IMF, 2019),  $-1.2\%$  for 2014-2015 (Pestova and Mamonov, 2019),  $0\%$  (Kholodilin and Neshunaev, 2019),  $-1.5\%$  for 2014-2017 (Barseghyan, 2019) [27].

The impact of the sanctions on the economy of the Russian Federation can be shown in three indicators: trade relationships with Ukraine, capital outflow from Russia and direct investment in the Russian Federation. Figure 2.6 shows trade flows between Ukraine and the Russian Federation

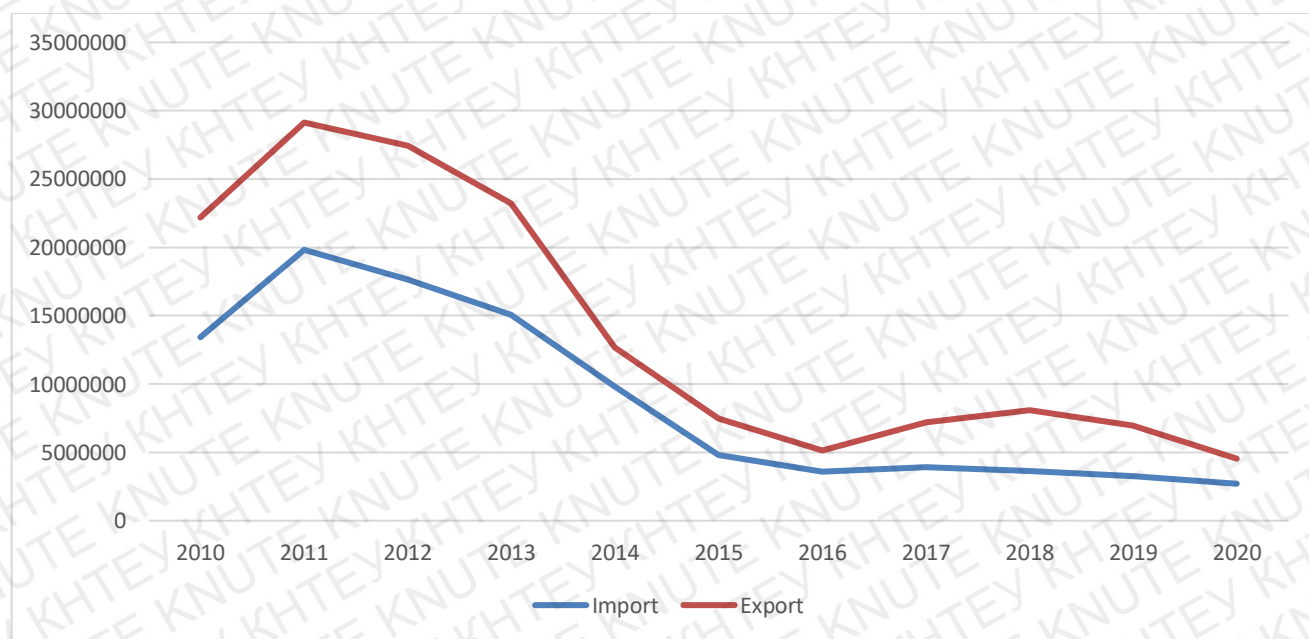


Figure 2.6 Trade flows between Ukraine and the Russian Federation, 2010-2020, thousand USD

Source: own study based on data of State Statistics Service of Ukraine [28]

As we can see on figure 2.6, Russia's trade with the most important strategic partner Ukraine has decreased tenfold after the outbreak of hostilities in Donbas. Figure 2.7 shows capital outflow from Russia

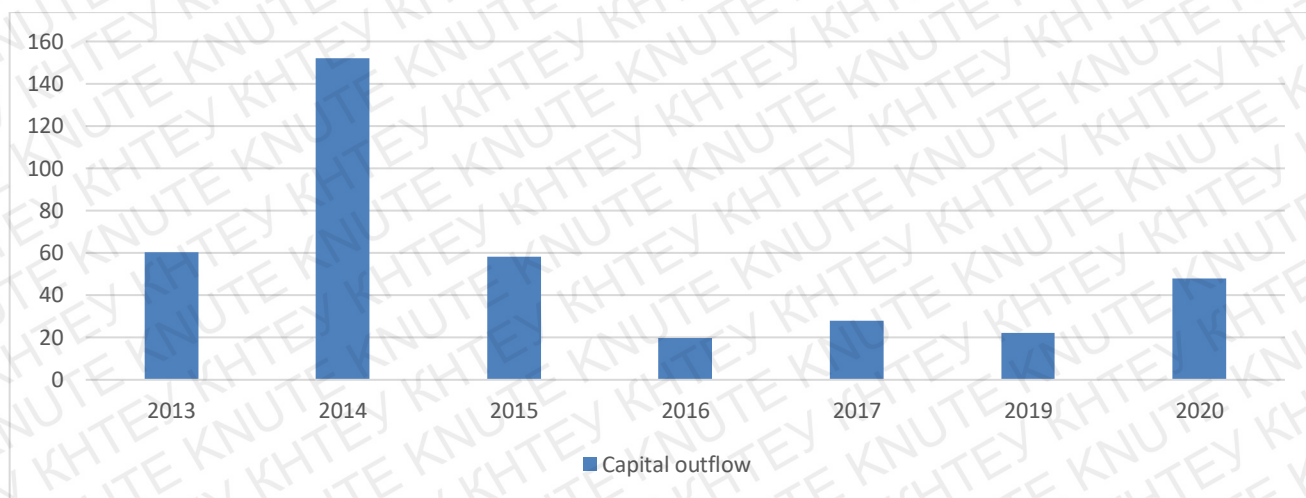


Figure 2.7 Capital outflow from Russia, 2013-2020, billion USD

Source: own study based on data of The Central Bank of the Russian Federation [29]

Figure 2.7 shows that in 2014 there was a sharp outflow of capital from the Russian Federation, just after the outbreak of hostilities that entailed sanctions. This can only mean that the sanctions still influenced the outflow of capital from the Russian Federation. Figure 2.8 shows direct investment in the Russian Federation.

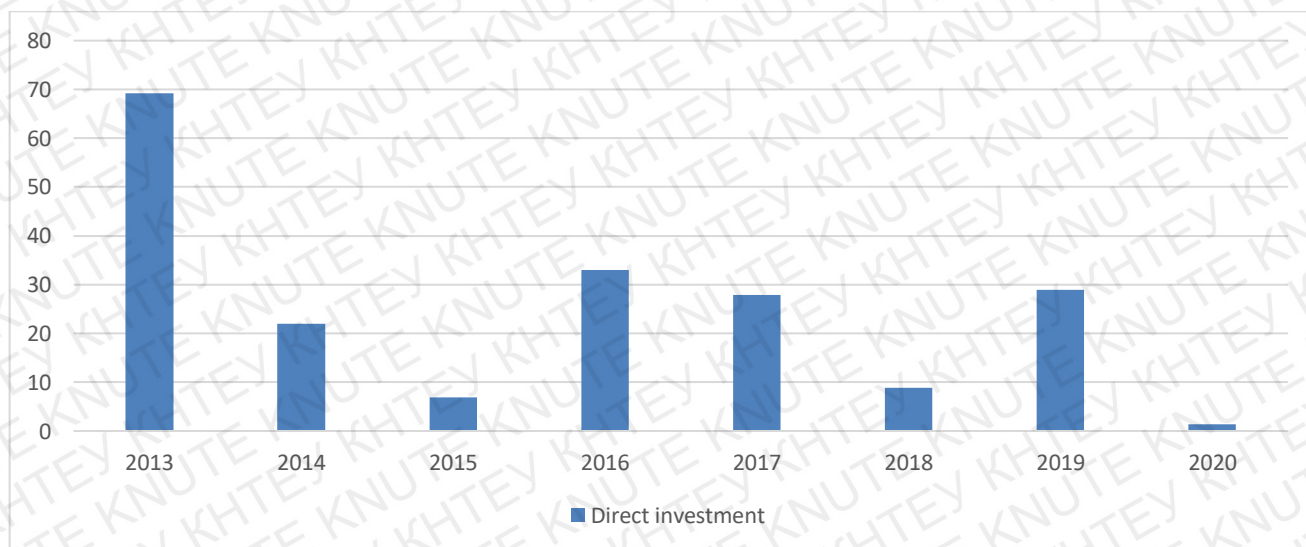


Figure 2.8 Direct investment in the Russian Federation, 2013-2020, billion USD

Source: own study based on data of The Central Bank of the Russian Federation [29]

Figure 2.8 shows that since 2013, direct investment has also declined from \$ 69 billion to \$ 1.4 billion in 2020. This is also most likely the impact of the sanctions. In

the materials of the Central Bank of the Russian Federation, it is noted that in the first and fourth quarters of 2020, there was an outflow of investor funds, amounting to \$ 4.1 billion and \$ 0.9 billion, respectively. The losses were compensated for in the second and third quarters (\$ 5.9 billion and \$ 0.5 billion), but the final result was the smallest in the 21st century.

On behalf of Ukraine, on December 30, 2015, the Cabinet of Ministers of Ukraine introduced a resolution banning the import of goods originating from the Russian Federation into the customs territory of Ukraine.

On November 25, 2020, the Cabinet of Ministers of Ukraine amended this resolution and continued until December 31, 2021 the application of preferential import duty rates set by the Customs Tariff of Ukraine (raised to the level of WTO most-favored-nation rates) on imports of goods of Russian origin [30].

The explanatory note to the draft resolution states that on January 1, 2016, the Russian Federation unilaterally terminated the Free Trade Agreement within the CIS for Ukraine, in connection with which the import duty in the amount of the Common Customs Tariff is applied to goods of Ukrainian origin. EAEU.

In accordance with the Law of Ukraine "On Protection of National Commodity Producers from Dumped Imports", restrictive measures were implied regarding the import of goods to Ukraine from the Russian Federation for some commodity groups. Table 2.1 shows tariff duties on imports of goods into Ukraine from Russian Federation

Table 2.1

**Tariff duties on imports of goods into Ukraine from Russian Federation, 2014, 2021**

Product group \ Year	Fiberboards	Grinding wheels on a ceramic sheaf	Nitrogen fertilizers	Matches	Cement
2014	0 %	10 %	5 %	6,5 %	10 %
2021	31,58 %	33,83 %	31.84 %	45,79 %	114.95 %

Source: own study based on law of Ukraine on the customs tariff of Ukraine [31], [32]

Table 2.1 shows the difference between customs tariffs in 2014 and 2021. Some commodity rough tariffs have increased more than 100 times. Thus, the tariff duty on fiberboards increased by 31,58%, on grinding wheels on a ceramic sheaf increased by 23,87%, on nitrogen fertilizers by 26,84, on matches by 39,29 and on cement by 104,95%.

According to the Russian economist Sergei Guriev, the sanctions are "not a catastrophic development of events, but a rather significant blow to the Russian economy." In the long term, according to experts, the most negative consequences for Russia will have the restrictions imposed on the export of high technologies to Russia and the access of Russian banks to cheap credit resources [33].

The retaliatory Russian embargo on Western sanctions was introduced as a protective measure and "an incentive for the development of the Russian agricultural sector". The consequence of the sanctions and embargo was Russia's desire to reorient itself to new markets, in particular, Turkey and Chile declared their readiness to expand cooperation. According to IMF experts, the sanctions against the Russian Federation cost the Russian economy 1-1.5% of immediate GDP growth, and the cumulative losses from them could reach 9% growth [34].

As for Russia's sanctions against other countries, the Russian embargo did not have significant consequences for the economies of most EU countries. This is due to the fact that for most of the countries subjected to the embargo, the export of agricultural products to Russia was small. The countries for which Russia was the main sales market for one or another product prohibited under the embargo should have suffered the most.

Countries most affected by Russian sanctions:

- Iceland - 31% of frozen fish exports (from September 2014 to August 2015) were sent to Russia;
- Finland - 29% of exports of poultry meat, 32% of exports of fish, 77% of exports of cheeses, 60% of exports of milk and unsweetened cream without added sugar, 70% of exports of butter (for 2013);
- Lithuania - 41% of pork exports and 50% of cheese exports (2013);

- Estonia - 46% of fish exports, 37% of cheese exports (in 2013);
- Latvia - 34% of cheese exports (2013);
- Poland - 55% of apple exports (2013);
- Belgium - 25% of apple exports (2013)
- Italy - by August 2017, the country's exports had lost up to 12 billion euros and 200 thousand jobs.

The real damage from the Russian embargo to the EU countries turned out to be small. The physical volumes of food exports from the embargoed countries in 2014-2015 increased by main items. Individual EU countries have suffered noticeably, having experienced a decline in exports in certain items. Poland suffered, since the volume of exports of apples from this country in physical terms in 2015 was less than in 2013, by 30%. Lithuania by 2015 was able to find a replacement for the Russian market in the export of poultry meat. The insignificant consequences of the embargo are indicated by the fact that the European Union allocated a small amount to eliminate its consequences, of which a significant part turned out to be unclaimed.

The European Union has created a special group to reduce losses from foreign trade restrictions imposed by Russia. In particular, 125 million euros were allocated by the European Union to compensate farmers affected by the Russian embargo for the period from August to November 2014. As of November 2014, of this amount, only about 37 million were claimed. In total, by the summer of 2016, over the two years of the embargo, the EU allocated only 280 million euros to farmers to eliminate its consequences [35].

## **Conclusions to the section 2**

In the 21st century, striking examples of economic wars between countries are the wars between the United States and China, as well as the hybrid war of Russia against Ukraine, which entailed an economic war between the United States, European countries and their allies against Russia.

The United States of America under President Donald Trump has revised its foreign economic policy. Since 2018, the US has embarked on a protectionist policy towards China, its largest trading partner. According to the International Trade Center (ITC, 2020), bilateral trade between these countries amounted to \$ 683 billion in 2018, of which \$ 120 and 563 billion were US exports and imports, respectively. Donald Trump has significantly increased tariffs on Chinese products, and China has responded in a similar way.

The main takeaway from the trade war between the United States and China is that both sides suffered. Thus, the introduction of additional tariffs on the import of Chinese goods into the United States led to a 25 percent reduction in imports from China. Taiwan, Mexico, the European Union, Vietnam and others took advantage of the vacated space on the American market. However, according to experts, China, which seeks to retain its market segment, has begun to reduce export prices for some time now. In the United States, the confrontation has been felt by American consumers who have to buy goods at higher prices.

Talking about the hybrid war of Russia against Ukraine, a number of sanctions have been imposed against Russia since 2014 after the outbreak of hostilities in eastern Ukraine. The sanctions concerned not only the Russian economy but also specific politicians and businessmen. In response to the sanctions in its direction, the Russian Federation also imposed sanctions in the direction of the United States and European countries.

In general, more than 8 years after the introduction of the first sanctions, it can be stated that they only slightly affected some European countries that had active trade relations with the Russian Federation. However, summing up the interim results of the sanctions, it can be noted that the damage caused to the Russian economy still exceeded the damage caused by the relevant actions of the Russian Federation. The only question is whether the goal was to cause significant damage to the Russian economy, or whether sanctions were just a way to control Russian aggression. Apparently, the sanctions were needed only to demonstrate the reaction of the United States and the EU to the events in Ukraine and did not initially pose a significant threat to the Russian Federation.



Ultimately, of all the parties to the conflict, it is Ukraine that has received and continues to receive the greatest damage from the hybrid war.

## SECTION 3: MODELING AND FORECASTING THE IMPACT OF HYBRID WARFARES ON THE ECONOMIC DEVELOPMENT OF NATIONAL ECONOMIES

### 3.1 Modeling of hybrid warfare's impact on the economy of Ukraine

The armed conflict in eastern Ukraine led to the death of thousands of civilians, destruction of civil infrastructure and life support systems of settlements, a decline in the living standards of the population, a huge flow of refugees and internally displaced persons, and widespread violations of basic human rights.

The greatest difficulty in assessing the losses suffered during the war is the separation of the direct consequences of the war from other events that would have occurred in the absence of the conflict and could have an impact on the country's economic growth. To address this issue, there is an approach based on potential results and trying to reconstruct non-observable economic indicators in the absence of some intervention.

Assessing the losses incurred by Ukraine during the war is difficult since it is difficult to separate the direct effects of the war from events that would have arisen in the absence of the conflict and could affect the economy.

The war in Donbass led to a tangible reduction in the Ukrainian economy, and to an even more significant decline in the Donbass itself. Figure 3.1 shows GDP per capita in Ukraine since 1990. Figure 3.1 shows Ukraine's GDP per capita

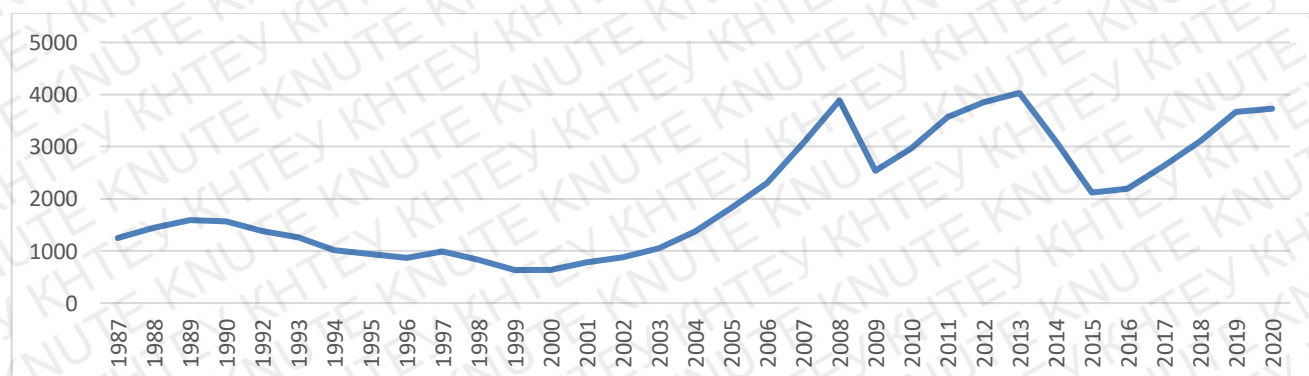


Figure 3.1 Ukraine's GDP per capita, 1987-2020, USD

Source: based on data of Ministry of Finance of Ukraine [36]

As we can see on figure 3.1, since 2013, GDP per capita has dropped from \$ 4,029 in 2013 to \$ 2,124 in 2015. As of 2020, GDP per capita in Ukraine was \$ 3,726 and this is the highest figure since 2014. At first glance, it may seem that at the moment the situation has stabilized and Ukraine has almost reached the indicators of 2013, however, it is obvious that if it were not for the war, now these indicators would be several times higher. According to various estimates, GDP per capita in Ukraine could have been about \$ 5,500 if not for the events of 2013. The situation is very similar with the usual GDP of Ukraine, as we can see on the graph, Figure 3.1 and Figure 3.2 are very similar. Figure 3.2 shows Ukraine's GDP.

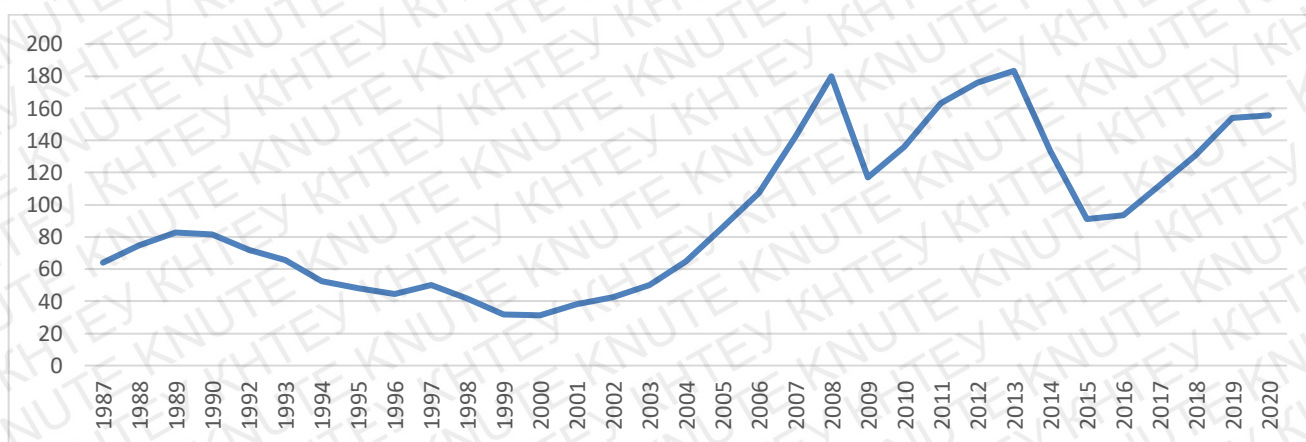


Figure 3.2 Ukraine's GDP, 1987-2020, billions USD

Source: based on data of Ministry of Finance of Ukraine [36]

The situation is very similar with the GDP of Ukraine. As we can see on the graph, figure 3.1 and figure 3.2 are very similar. Figure 3.3 shows the USD exchange rate in 2014-2015 in Ukraine.

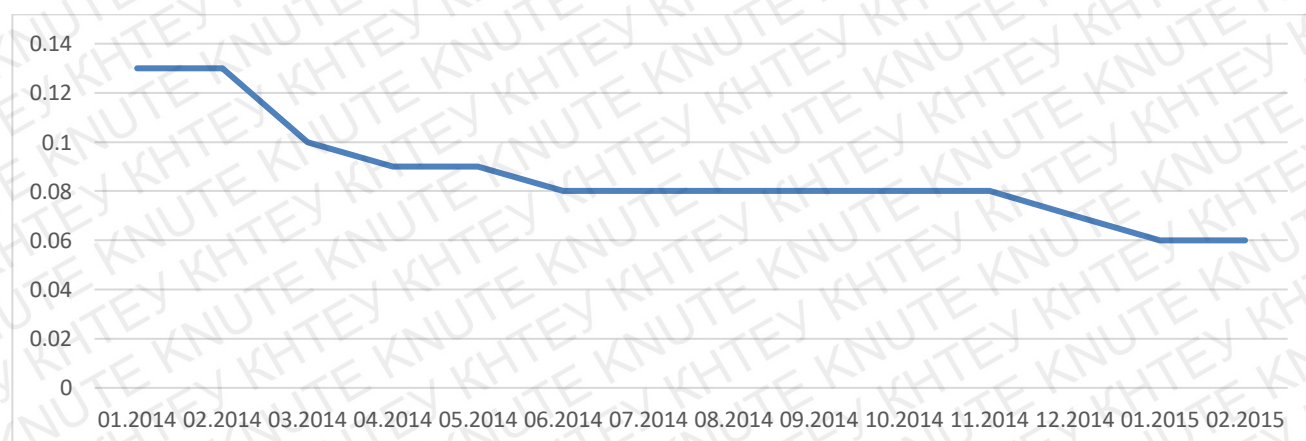


Figure 3.3 USD exchange rate in Ukraine, January 2014-February 2015, USD

Source: based on data of National Bank of Ukraine [37]

If we look at figure 3.3, since February 2014, the USD has depreciated 75 percent against February 2015. Table 3.1 shows average salary in Ukraine for 2014-2015.

*Table 3.1*

**The average salary in Ukraine for 2014-2015**

Indicator	02.2014	03.2014	04.2014	05.2014	06.2014	07.2014	08.2014	09.2014	10.2014	11.2014	12.2014	01.2015	02.2015
Average salary, USD per month	342,49	309,34	266,48	267,98	293,46	273,20	231,90	241,04	244,44	216,71	227,58	226,85	163,48

Source: own study based on data of Pension Fund of Ukraine [38]

Table 3.1 shows, that the average salary fell from \$ 342 in February 2014 to \$ 163 in February 2015, more than 52 percent.

As of July 9, 2014, the damage caused by the destruction in the Donbass during the war amounted to 8.1 billion hryvnias. 1 month of anti-terrorist operation costs Ukraine 1.5 billion hryvnias. On July 21, the ATO decided to allocate an additional 16.931 billion hryvnias [39].

On May 20, 2015, Prime Minister Arseniy Yatsenyuk stated at a government meeting that the Cabinet of Ministers of Ukraine had decided to suspend military-technical cooperation with the Russian Federation and the agreement between Ukraine and the Russian Federation on military-technical cooperation signed on May 26, 1993.

As a result of the aggression, such large metallurgical enterprises as the Alchevsk Metallurgical Plant (13% of the total production of metallurgical products), the Donetsk Metal Rolling Plant, the Donetsk Electrometallurgical Plant, and the Stakhanov Ferroalloy Plant are not operating.

The losses of metallurgical enterprises in 2014 are estimated at about UAH 40 billion, including UAH 25 billion in lost revenue from unsold products and UAH 15 billion in the value of destroyed fixed assets.

Coal production in Ukraine decreased by 35%. Of the 150 coal mines, 115 are located in the temporarily occupied territories. According to preliminary estimates, the losses of domestic machine-building enterprises in 2014 are estimated at UAH 10 billion.

In addition, Russia has seized the Crimean Soda Plant in Crimea, which accounts for about 80% of the Ukrainian soda ash market. For 10 months of 2014, the railways did not receive revenues in the amount of UAH 4 billion.

As a result of the occupation of Crimea and the closure of airspace over Donetsk and Luhansk oblasts, from March to December 2014, revenues and provision of air navigation services totaling UAH 2 billion were lost.

In Ukraine, 1,511 railway infrastructure facilities were damaged by terrorists, the Russian armed forces, and militants, 1,561 kilometers of highways, 33 bridges, and overpasses were destroyed.

As of the beginning of February this year, more than 9,000 residential buildings in the Donetsk region were destroyed and damaged, which is actually 12% of the housing stock. The total amount of destruction exceeds UAH 1 billion.

Russian terrorists destroyed or damaged 1 thousand 80 energy facilities, damaged 2 thousand 772 gas pipelines. As of the end of December 2014, 9,360 subscribers and 6 enterprises in Luhansk region remain without gas supply [40].

The annexation of Crimea and Russia's war against Ukraine for the seventh year in a row have a very specific economic cost. We are talking primarily about the loss of part of the economic potential - assets that remain in the occupied territories, and the severance of established economic ties between enterprises. Entrepreneurs are losing traditional markets and suppliers and have to adapt to new realities, which also requires certain costs. The country loses part of the budget revenues that came from the relevant territories before the occupation. Trade sanctions have a specific economic price. Military spending is rising, there is a need to help internally displaced persons, and so on. New corruption schemes are emerging with all the corresponding negative consequences. Uncertainty about the state policy regarding certain spheres and branches of the economy, state regulation of production and commercial activity is significantly increasing. And this list of war-related negative economic effects can be continued.

According to experts from the Center for Economic Strategy, the value of assets lost by Ukraine in the Crimea is 135 billion dollars. These losses include the value of land on the Crimean Peninsula (\$ 3 billion) and proven mineral deposits (\$ 52.3 billion),

loss of residential real estate (\$ 42.7 billion), losses of private companies (\$ 18.4 billion) and banks (\$ 2.7 billion), losses of the state (\$ 14 billion) and local communities (\$ 1.7 billion).

According to US researcher Anders Oslund, Ukraine has lost about \$ 100 billion from Russian aggression. (\$ 27 billion as a result of the annexation of Crimea and \$ 73 billion as a result of aggression in the East) [41].

The temporarily occupied districts of Donetsk and Luhansk oblasts also suffered economic losses from Russian aggression. The German Institute for Economic Research estimates that these districts lost 43% and 52% (\$ 4,630 and \$ 3,326) of gross regional product per capita during 2013-2016, respectively.

According to the Vienna Institute for International Economic Research, during the first year of the armed conflict, the ORDLO economy shrank by 50%.

Estimates of losses vary depending on the method of calculation, but in general they are convincing evidence that Russian aggression has caused serious economic damage to Ukraine.

At the same time, the restoration of the temporarily occupied districts of Donetsk and Luhansk oblasts will require significant funds. Thus, according to experts from the Vienna Institute for International Economic Research, such a restoration will cost at least 21.7 billion dollars. At the same time, the restoration of physical capital will require \$ 9.5 billion, human capital - \$ 8.6 billion, and the restoration of the environment - \$ 3.6 billion.

One of the large-scale economic consequences of Russian aggression was the reorientation of Ukrainian foreign trade from the Russian market to the markets of other countries. According to the NBU, in 2013 Russia accounted for 28.0% of Ukrainian exports and 25.9% of imports of goods and services (in the EU, respectively, 36.1% and 34.0%). And in 2019, the share of Russia decreased to 10.0% of exports and 10.3% of imports (while the EU accounted for 34.8% and 40.8%, respectively).

Speaking of humanitarian consequences, as a result of Russia's armed aggression against Ukraine, about 9,940 people were killed and about 23,455 were injured (according to the UN). These figures include, in particular, 298 passengers on flight

MH17, including 80 children who were victims of the terrorist attack on July 17, 2014, when a Malaysia Airlines plane was shot down by the Russian military with Buk SAM, which was taken to the occupied territory of Donbass from the territory RF.

About 1,584,000 Crimean and Donbass residents were forced to flee their homes as internally displaced persons.

As of today, the following remain occupied: The Autonomous Republic of Crimea (26,081 km<sup>2</sup>), the city of Sevastopol (864 km<sup>2</sup>), part of the Donetsk and Luhansk oblasts (16,799 km<sup>2</sup>) - a total of 43,744 km<sup>2</sup>, which is 7.2% of the territory of Ukraine.

Fear and terror reign in the occupied territories, the occupying power acts with repressive methods and intimidation, and systematically and massively violates human rights and freedoms. The critical human rights situation in the occupied Crimea was condemned by UN GA Resolution 71/205 "Human Rights Situation in the Autonomous Republic of Crimea and the City of Sevastopol (Ukraine)" of 19 December 2016.

The economy of Donbass is completely destroyed. The equipment of many once powerful Ukrainian plants was exported to the territory of the Russian Federation. The situation with flooded mining mines threatens a powerful environmental catastrophe. The Russian authorities do not allow experts to assess the situation and its possible correction.

In the east, the 409.7 km long section of the Ukrainian-Russian state border remains out of the control of the Government of Ukraine [41].

So, Russia's annexation of Crimea and aggression in eastern Ukraine have extremely serious consequences for Ukraine's economy in the short, medium and long term. Without an adequate quantitative and qualitative assessment of such consequences, it is impossible to make informed political decisions on the socio-economic development of the country and the future reintegration of these territories, to adequately formulate Ukraine's position on restoring territorial integrity and punishing the aggressor in the international arena.

Losses can be offset by dynamic economic growth, which cannot be achieved without large-scale economic reforms and the assistance of the international community. Successful socio-economic development of Ukraine is the main prerequisite for

successful counteraction to Russian aggression and a tool for reintegration of the country after the restoration of its territorial integrity.

### **3.2 Propositions about the development of Ukraine's economic policy directions in terms of hybrid warfare with Russian Federation**

In fact, economic development in a country that is waging a full-scale war against an aggressive neighbor, which is many times larger and stronger in almost all aspects is almost impossible. That is why the first step towards rapid economic growth and development will be the cessation of hostilities in the Donbass and the restoration of control over all borders of Ukraine.

Since 2016, Ukraine's economy, despite the new challenges facing the country (including trade and transport (logistical) constraints on the part of the Russian Federation), has quickly overcome the crisis and entered the phase of economic recovery observed during the reporting period. But the dynamics of growth in general was restrained and averaged 3 percent for the year in the period 2017-2019.

The reason for the slow recovery growth during 2017-2019 was a fundamental change in growth drivers. Thus, traditionally for Ukraine, high growth rates were provided by external demand, while in 2017-2019 the driver was almost only domestic demand, as Ukraine gradually lost its traditional foreign markets [42].

Thus, in 2017-2019, final consumer spending grew annually by an average of 7.9 percent. This was supported by the growth of household incomes in the context of the introduction of a new social policy, central to which was the reform of the system of remuneration and taxation of wages, as well as remittances from abroad due to increasing labor migration.

Despite the unresolved problems of the labor market and the relatively slow pace of economic recovery, in general in 2017-2019 formed the basis for further qualitative economic growth, and the general situation in the economy at the end of 2019, despite the persistence of a number of significant problems and risks, about the gradual formation of a new, not entirely familiar to Ukraine in the past, the basis for further



progressive economic development in new economic realities and with new drivers.

However, the beginning of 2020 was marked by the spread of the COVID-19 pandemic. In response to the COVID-19 pandemic, there have been significant changes in the lives of many countries around the world, including Ukraine. Yes, a state of emergency has been declared in countries as a whole or in individual regions or areas; Sanitary and epidemiological measures have been introduced in almost all countries (quarantine zones, temperature checks, cancellation of mass events, closure of educational and cultural and entertainment facilities); Restrictions on departure / entry to countries and movement within countries have been established; the role of public administration in emergency conditions has been strengthened; established restrictions on employment; new distance forms of work and education were introduced. Such unprecedented steps have led to a slowdown in economic development.

Starting in 2022, the economy is expected to gradually recover with the transition to growth and to form a qualitative basis for sustainable economic development in the medium term, taking into account major reforms and maintaining financial stability. The emphasis in the reforms will be - in the short term - on stimulating economic development in the post-pandemic period by state support for job creation, support for small and medium-sized businesses, protection of domestic producers in both domestic and foreign markets. In the medium term, the reforms will focus on eliminating existing weaknesses in Ukraine's economy and identified structural inconsistencies in order to accelerate economic growth, as well as creating conditions for the development of industries that will have the greatest positive effect from the digitalization of the economy [43].

Along with foreign capital, borrowed funds will continue to be more important in the conditions of further development and improvement of the functioning of financial markets, including the stock market. Restoring confidence in the banking system, reduction of credit risks, as well as a gradual decrease in the value of credit funds against the background of maintaining the inflation target set by the National Bank, will increase the role of the banking system in the formation of capital flows. Active cooperation with international financial organizations and partner countries in the direction of attracting

credit funds for the implementation of priority public investment projects will continue. If reforms and measures are successful, Ukraine should provide a basis for sustainable positive economic growth in the medium-term development, maximize the level of integration with important trading partners and, ultimately, get rid of the main negative characteristics of recent years as a country with an unstable economy and raw materials orientation.

Among other things, taking into account the existing realities and consequences of the pandemic, which to some extent will be felt in the medium term, the forecast takes into account that in the medium term social policy will focus on human capital development, effective state social support, creating conditions for effective functioning of the funded pension system. At the same time, special attention will be paid to the targeting of social support for vulnerable groups, as well as the targeting of housing subsidies to the population [44].

The investment sector has suffered significant losses as a result of the Russian Federation's armed aggression against Ukraine.

The temporary occupation of part of Donetsk and Luhansk oblasts by the Russian Federation, as well as the annexation of the Autonomous Republic of Crimea and Sevastopol, caused a number of significant structural changes in the national economy, including investment outflows, and had a significant impact on the national economy as a whole.

According to the Ministry of Justice, the amount of direct losses in the form of losses of assets caused by the temporary occupation was 950 billion UAH. The market value of the illegally seized material-raw material base in the Autonomous Republic of Crimea and the city of Sevastopol for Ukraine amounted to another 126.8 billion UAH.

The image of the region as dangerous at the moment does not allow for long-term planning and reduces the willingness of potential investors to invest in business development, which causes a massive outflow of able-bodied people and capital from the territories adjacent to the temporarily occupied, and increases the migration burden of other regions people.

The main priority for the state in 2021-2023 will be the maximum restoration of the

pre-pandemic level of employment, as well as the implementation of the necessary measures to create decent jobs that can keep migrant workers in Ukraine. Therefore, reforms aimed at stimulating the preservation of existing and creation of new jobs, ensuring decent wages, as well as improving the quality of education, medicine and human cultural development will remain relevant. Thus, in general, in 2021-2023 it is expected to return to the trajectory of accelerating economic growth. Figure 3.4 shows change in potential and actual GDP and GDP gap

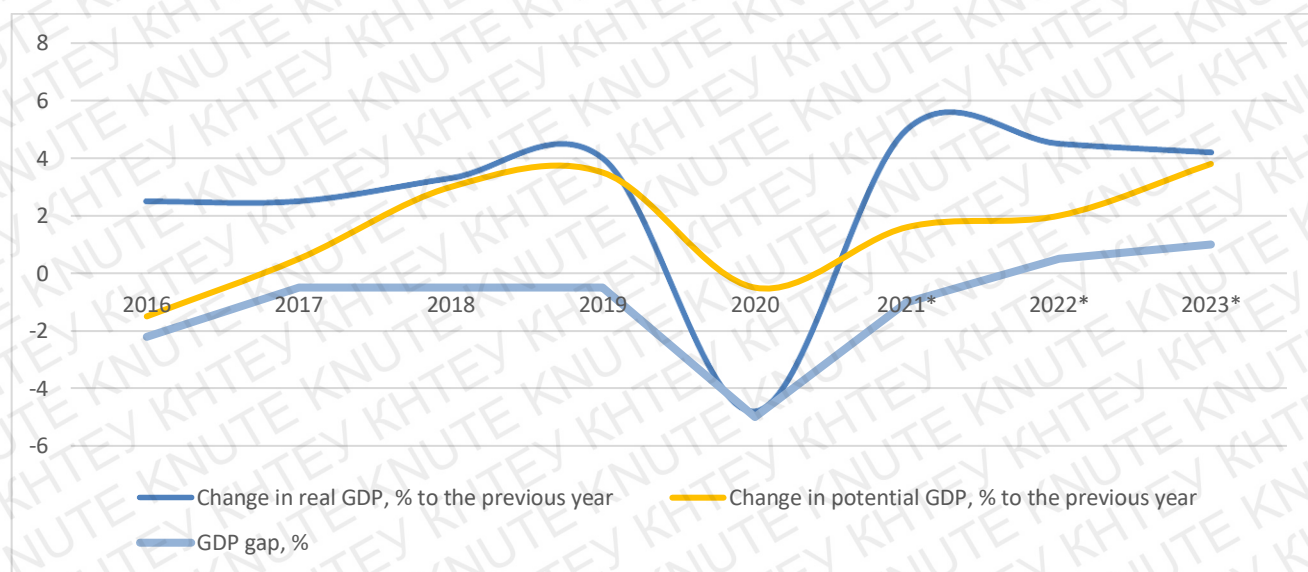


Figure 3.4 Change in potential and actual GDP and GDP gap, 2016-2023, %

Source: own study based on data of State Statistics Service of Ukraine [28]

As a result, the baseline scenario presented in figure 3.4, projects GDP growth of 4.6 percent in 2021, 4.3 percent in 2022, and 4.7 percent in 2023 [45].

The hybrid conflict with the Russian Federation forced Ukraine to rethink the old and define new priorities of economic policy, which resulted in a partial leveling of the devastating consequences of the aggressor's actions. However, the difficulties of this war can be overcome only on the basis of a complete restructuring of the outdated economic model, which will quickly and at another technological level to revive domestic production, modernize the real sector as a basis for economic growth, introduce new technologies, modern technical solutions and innovations. a worthy place in the world division of labor.

In the real sector, further changes that need to take place in the context of the ongoing reforms should be accelerated and correspond to the content of the general

economic transformations that are being implemented in Ukraine. These include decentralization, deregulation, demonopolization and de-oligarchization of the economy, development of market relations, reduction of corruption, creation of a favorable investment climate, restoration of territorial integrity and reconstruction of Donbass, fulfillment of the Association Agreement with the EU.

The guidelines of the state agricultural policy today are the creation of basic conditions for agricultural activity and improvement of the financial condition of agricultural producers, bringing domestic legislation to the norms in force in the EU, regulation of land relations in order to increase the competitiveness of agricultural production.

The hybrid war caused significant losses to Ukraine's financial system. Expenditures on defense, social protection of internally displaced persons and support for affected citizens, and the restoration of damaged Donbass infrastructure have risen sharply. In peacetime, these funds could be used to stimulate socio-economic development. The growth of expenditures against the background of narrowing the tax base of the region has led to an increase in budget deficits at all levels. In addition, a lot of state property remained in the occupied territory, which annually generated net contributions and dividends to the state budget.

However, the financial system of Ukraine was able to mobilize. As a result of the measures taken by the Government and the National Bank of Ukraine to implement fiscal consolidation policy, impose temporary restrictions on the foreign exchange market, resume cooperation with international financial organizations, starting in May 2015 it was possible to gradually restore financial stability and reduce inflation and valuation pressure.

Also, in accordance with the provisions of the Budget Code in terms of general assessment of fiscal risks, in particular related to changes in the macroeconomic environment, the Forecast for 2022-2023 contains an assessment of possible alternative development scenarios for Ukraine, which, like the baseline scenario, are formed from taking into account the consequences of the spread of coronavirus infection COVID-19.

Two opposite alternative scenarios are considered:

- optimistic, which predicts that active measures around the world will quickly overcome the spread of coronavirus infection COVID-19, and the experience gained during the fight against the pandemic, and a qualitative reassessment of the value system will significantly affect economic ties and cash flow distribution;
- crisis, which involves the deployment of the second wave of the spread of coronavirus infection COVID-19 and, as a consequence, a moderate recovery of the world economy or even a global financial and economic crisis, which is warned by a number of international and domestic experts. Table 3.2 shows areas of responsibility of the executive authorities of Ukraine in the development of the Ukrainian economy.

Table 3.2

**Areas of responsibility of the executive authorities of Ukraine in the development of the Ukrainian economy**

Executive authority	Area of responsibility
Ministry of Economy of Ukraine	Support of domestic production, development of small and medium business, digitalization and automation of the economy, growth of investment flows
Ministry of Social Policy of Ukraine	Raising state social standards and guarantees, updating labor legislation
Ministry of Finance of Ukraine	Reforming the tax system to improve business conditions in Ukraine and promote socio-economic development
National Bank of Ukraine	Monetary policy is expected to be implemented aimed at creating balanced conditions for a successful "restart" of the economy
Ministry of Foreign Affairs of Ukraine	Maintaining and improving relations with strategic partners and allies
Ministry of Defense of Ukraine	Fulfillment of the necessary conditions and steps for Ukraine's accession to NATO

Source: own study

At the table 3.2 we can see which methods will be used for the development of the Ukrainian economy, as well as which state structures will use certain methods.

1. Support for domestic production will be, in particular, by creating conditions for the development of Ukrainian industry focused on the production of high-tech products, which will form an efficient structure of industry with increasing the share of science-intensive industries for deep processing and final consumption with high added value and resource consumption of products. This will be the basis for increasing the competitiveness of industrial production and expanding markets by entering the priority and most efficient for the national economy sectors of the world market. Also, taking into account the lessons of the pandemic, industrial policy will take into account the need to create in Ukraine a full cycle of production of goods critically needed in conditions that threaten the lives and health of citizens, as well as the need to accelerate digitalization and industrial development.

Given the significant openness of the Ukrainian economy, in the field of foreign economic policy the main measures will be to promote Ukrainian exports in foreign markets, which will include, in particular, the introduction of export crediting, implementation of "industrial visa waiver" and improving state support for domestic products. In addition, the increase in foreign trade will be facilitated by measures aimed at expanding and diversifying Ukraine's foreign economic relations, in particular, by concluding free trade agreements with key trading partners of Ukraine, preventing the application of restrictive measures in foreign markets, reducing tariffs on Ukrainian products. key markets through the implementation of the Association Agreement with the EU, other free trade agreements, their renewal, the use of WTO opportunities, as well as the removal of anti-dumping and protective duties applicable to Ukrainian products.

Reduction of energy dependence, diversification of energy supply sources, development of renewable and low-carbon energy sources, integration of energy markets into European markets will ensure the country's energy security.

2. The development of small and medium business will include the creation of favorable regulatory conditions for the development and recovery of small and medium enterprises, employment, and the introduction of new and expansion of existing credit

support programs for small and medium enterprises. Among the measures aimed at reducing regulatory pressure on small and medium enterprises, we should highlight the simplification of registration of personal farms as economic entities and obtaining the necessary permits for the introduction of agricultural products, deregulation of land management, elimination of regulatory bar to receive state aid by economic entities for the implementation of investment programs (projects) of regional development, which will also help increase competition in the market.

Intensification and effective implementation of privatization processes will allow transferring hundreds of public sector entities to efficient owners who will create new jobs, liquidate inefficient enterprises, and reform the management system of state-owned enterprises in accordance with modern international standards.

3. In the field of social policy, its efficiency will continue to increase based on the rational use of financial and material resources of the state by raising state social standards and guarantees: subsistence level and minimum wage, taking into account the real capabilities of the economy, but not below the consumer price index employee of the I tariff category of the Unified tariff grid. At the same time, regular indexation of pensions and a fair mechanism for accruing benefits to pensioners will be ensured. In the field of social policy, social standards will be raised, taking into account the tasks set by the President of Ukraine to increase the minimum wage.

4. The labor market will operate in the conditions of updated labor legislation, formation of a system of new relations between employee, employer and the state in the conditions of gradual change of management systems in the post-pandemic period and spread of digitalization processes, increase efficiency of education, retraining and job search. , which will stimulate an increase in the involvement of labor in the domestic market of both labor professions and those that will require greater intellectual involvement of man against the background of the maximum possible slowdown in labor migration.

5. The process of digitalization and automation of the economy will continue, which will reduce the costs, including public, for the provision of relevant services, increase profits, increase productivity and increase the pace of economic development.

In particular, the most popular public services will be translated into electronic form, monitoring and evaluation systems for the provision of public services will be introduced, various electronic media will be developed, access to Internet resources, mobile technologies, etc. will be expanded.

6. Accelerated growth of investment flows into the Ukrainian economy will be conditioned by the need to further restructure old and acquire new fixed assets, implement new, strategically important for the state and regions infrastructure investment projects based on expanding economic freedom, carrying out all necessary legislative changes to ensure a favorable legal framework. in the capital market, including in the direction of providing reliable guarantees for domestic and foreign investors, advancing in the direction of overcoming corruption. The growth of investment activity will also contribute to the development of industrial parks as investment sites with all the necessary engineering and transport infrastructure, the spread of joint investment mechanisms, as well as ensuring effective and transparent cooperation with international financial organizations as a guarantee of financial stability and success. reforming the country.

7. Changes in the country's fiscal system will include reforming the tax system to improve business conditions in Ukraine and promote socio-economic development, which will include increased efficiency in the administration of taxes, fees and customs duties while maintaining a balance between security requirements and simplicity of procedures, reducing dependence economy from the debt burden and reducing the total share of public debt to a relatively safe level (the ratio of public debt to GDP at the end of 2023 will be 52.8 percent).

8. In 2022-2023, monetary policy is expected to be implemented aimed at creating balanced conditions for a successful "restart" of the economy after quarantine and, in the future, ensuring price stability with a target inflation rate of 5 percent per year; improving the transmission mechanism of monetary policy and the signaling role of the discount rate; increasing the level of monetization; continuing the liberalization of the foreign exchange market to the level of ensuring the full free movement of capital, as well as the development of financial markets, as a necessary condition for diversifying



the structure of the economy, which will create a basis for macroeconomic and social policy.

### **Conclusions to the section 3**

So, in general, in 2022-2023, after smoothing the negative effects of quarantine in 2021, it is assumed that there will be a continuation of policies aimed at removing obstacles to effective economic development, macroeconomic stability and reducing financial risks, creating conditions for changes in production, by stimulating the promotion of goods on foreign competitive markets and improving the investment attractiveness of Ukraine.

Of course, it is very difficult to predict the development of the Ukrainian economy in the context of a hybrid war with Russia, since the war is very expensive for the budget of Ukraine and takes away resources that could be spent on development. However, it is even more difficult to predict the end of the war, it is simply impossible, therefore, even in a war, you need to focus on such terms: supporting for domestic production, development of small and medium business, improving of social policy, reforming of the labor market, acceleration of the digitalization process, raising of investment flows into the Ukrainian economy, changing of fiscal system and monetary policy

## CONCLUSIONS

Hybrid wars began to occupy a significant place in modern life. Our country has been living in the conditions of such a war for more than 7 years, while the hybrid war of the Russian Federation against Ukraine cannot be called equal in strength. In general, hybrid warfare is not a new, but an actual type of war, which is waged not only and not so much by cannons and tanks as by the forces of political propaganda, terror, disinformation and economic pressure on the enemy. Hybrid warfare also includes the subversive activities of special services on enemy territory and various techniques for distorting information. The word "hybrid" itself means in this context the use of several levers of pressure on the enemy at once, among which military operations are, although important, but only a part. Like any confrontation, hybrid warfare has its own methods and goals, causes and consequences, advantages and disadvantages.

Over the past 10 years, we have seen several hybrid confrontations between two or more countries at once. The largest of them immediately recall the trade war between the United States and China and the Hybrid War of the Russian Federation against Ukraine, which took tens of thousands of lives and caused billions of dollars in damage.

The consequences of the trade war between the United States and China were a reduction in the supply of goods between these countries, as well as a complete cessation of cooperation between American IT companies and Chinese giants such as Huawei. This confrontation even affected us as consumers, because ordinary people who used Huawei's products lost access to Google's services and after the US sanctions, Huawei can no longer use Google services in its new products, which makes it much more difficult for consumers to use it.

As for the hybrid war of the Russian Federation against Ukraine, at the moment it is difficult to fully assess all the damage caused to the Ukrainian economy during the war. However, it is already safe to say that the damage is very significant. Over the past 7 years, Ukraine's GDP did not rise above the value of 2013 and only in 2020 came as close to it as possible. During the war, dozens of important infrastructure facilities have been destroyed, the restoration of which will take years or even decades of time and funding. The same applies to the population of the Donetsk and Luhansk regions,

because the consequences of the information war and propaganda will appear there, and the elimination of the consequences of this may take decades.

It is rather difficult to make forecasts regarding the future of the Ukrainian economy, and at normal times, not to mention the time of the covid-19 pandemic. In the most positive forecasts, in which the end of the pandemic is predicted in 2022, there is a possibility of significant economic growth. However, in the current conditions it is very difficult to predict when the pandemic will end and the situation will return to normal. The hybrid war with the Russian Federation also plays a key role in forecasts for economic development, and since it is almost impossible to predict its end, it is also incredibly difficult to make accurate forecasts.

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