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UKRAINE'S ECONOMY: RESILIENCE UNDER WAR AND CHALLENGES FOR POST-WAR RECOVERY

Introduction. *The war has an unprecedented negative effect on the Ukrainian economy and society, the socio-economic consequences of which require a thorough assessment and scientific understanding.*

Problem Statement. *Strategic, programmatic and model developments regarding the post-war reconstructive recovery of Ukraine should take into account the main determinants of the national economy resilience and the challenges facing it in the global coordinates of the hybrid “peace–war” system.*

Purpose. *To identify the effect of military shocks in macroeconomic, macro-financial, and social aspects for the period of February 2022 – April 2024, as well as the main risks and challenges of the Ukraine’s post-war recovery.*

Materials and Methods. *Materials and statistical data of relevant domestic and international institutions have been used. The methods employed are as follows: dialectical and logical-historical, statistical, tabular-graphic, institutional methodology, cyclical and world-system analysis, macroeconomic aggregation, time series analysis.*

Results. *The effect of military shocks has caused significant damage to Ukraine, but overall, over the two years of war, the country has been demonstrating socio-economic resilience. However, there are serious challenges and risks for the resilience and economic recovery of the post-war Ukraine, the most important of which are the continuation of the war on Ukrainian territory, high level of corruption, dependence on external financing, and the growth of the demo-economic burden and poverty.*

Conclusions. *The full-scale war in Ukraine is a component of the global, very complex and long-term process of reformatting the world order and can be adequately assessed only in the context of the global hybrid “peace–war” system. In the present-day conditions of significant global uncertainty, the contextual model of national development, which is based on the activation of Ukraine’s own resource potential, can ensure resilience of our country.*

Keywords: *military-economic cycles, hybrid “peace–war” system, modern hybrid warfare, reconstructive recovery, international financial support.*

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February 24, 2024, marked the third year since the full-scale invasion of Ukraine by the Russian Federation. While comprehending the phenomenon of this war, unprecedented in modern European history, in a geopolitical context, experts consider it a trigger for changing the existing world order — a long-term complicated process, cyclically determined and leading to the reformatting of both global and national economies. Having experienced severe impact of military shocks from February 2022, thanks to the vital support of foreign partners, Ukraine has developed the macro-economic, macro-financial, and societal resilience necessary in the global hybrid “peace—war” system of our age. In this case, resilience means the ability to withstand large-scale shocks, transforming and becoming more resilient in the face of modern hybrid threats. Also, Ukraine has appreciated the civilizational power and importance of political-economic unions, especially under a full-scale external invasion, and strives to become a full-fledged EU's integration member [1].

Given these circumstances, in our research we are trying to expand the scientific understanding of global, regional, and national processes that externally and internally determine the resilience of the Ukraine' economy and the perspectives for its post-war recovery. To do this, *firstly*, we need to consider the Russian-Ukrainian war in a systemic-civilizational and macro-cyclical context. *Secondly*, it is necessary to understand the scale of damage caused to Ukraine during more than two years of embittered and widespread armed conflict in order to find out the opportunities for Ukraine's multidimensional resilience. Such an understanding contributes, *thirdly*, to identifying the key factors of the Ukrainian economy's resilience under military shocks. *As a result*, we plan to determine the main risks and challenges for the post-war reconstructive economic recovery of our country.

Materials and statistical data of the State Statistics Service, the Ministry of Economy, the Ministry of Finance, the Ministry of Social Policy and the Pension Fund of Ukraine, as well as the UN, the IMF, the World Bank and other internatio-

nal structures have been used in the study. The research is based on an integrated and interdisciplinary methodological approach. Employing dialectical and logical-historical methods, the authors have established the influence of the current formation of the global hybrid “peace—war” system on long-term economic trends in Ukraine. The effects of changes in the global macro-cyclical conjuncture, as well as the patterns of military-economic cycles, have been considered from the point of view of a systematic approach to the consideration of modern hybrid warfare in Ukraine. Using the institutional methodology has helped us understand the role of institutions that have a major implication for ensuring Ukraine's resilience in the economic, financial, and societal dimensions.

The appropriate application of statistical, tabular, and graphical methods has become one of the tools for analyzing the dynamics (statics) of indicators characterizing Ukraine's losses incurred during the two years of full-scale war, as well as the growth/decline in its gross domestic production, fiscal deficit, public debt, external borrowing and donor financial assistance for the country. An interdisciplinary approach has allowed the authors to substantiate the key factors of Ukrainian resilience under the martial law and to identify the main challenges and assess the prospects for its reconstructive economic recovery in the post-war period.

Classic academic works for the fundamental points and frameworks of world-systems analysis are Frank A. G. [2], Braudel F. [3], and Wallerstein I. [4]. Bilorus O. [5] has developed the theory of gradual transition to a new global civilizational and formational world system of noospheric globalism and global solidarism. The issues of macro-cyclicity have been investigated by many researchers, including serious studies of military-economic cycles by Goldstein J. S. [6], Podliesna V. [7], and Peltier H. [8]. The scientific phenomenon of the hybrid “peace—war” system as a modern form of a changing world order has been developed by Grytsenko A. [9]. Ensuring macroeconomic stability under the martial law in Ukraine has been studied by Danylyshyn B. [10].

The issue of resilience of socio-economic systems continues to be studied, given its various aspects and dimensions. Hallegatte S. [11] has proposed approaches to the definition and measurement of the economic resilience. The conceptualization of regional economic resilience has been discussed by Martin R. & Sunley P. [12]. Eisenberg D. A. et al. [13] have focused on studying resilience in the context of various military doctrines. Comprehensive studies of the EU's economic and societal resilience have been made by Manca A. R. et al. [14], Treshchenkov E. [15], and Giovannini E. et al. [16].

For the case of Ukraine, its economic resilience has been substantiated by Grytsenko A. [9] and Cherevatskyi D. [17]; financial resilience has been studied by Korablin S. [18], Krychevska T. [19], and Kornivska V. [20]; and social resilience has been considered by Heyets V., Burlai T., Blyzniuk V. [21]. The problematic issues of the financial and economic state of Ukraine in wartime conditions, as well as the prospects for its post-war recovery have been outlined by Borodina O. et al. [22], Borzenko O. & Piliaiev I. [23], Amosha O. & Amosha O. [24], Kindzerskyi Yu. [25], Bret C. [26], Trebesch Ch. [27], and Cirella G. T. [28].

SOCIO-ECONOMIC RESILIENCE UNDER THE GLOBAL HYBRID SYSTEM "PEACE—WAR"

The modern world is in the process of forming a new world order as a system of formal and informal rules and norms of international relations, which is a complex network of states of dynamic balance of interests and forces of key world subjects. The most fundamental framework of balance is the ratio of economic forces, which depends on natural conditions and population, technical progress and the level of social development of countries. The military, political, and ideological potential of subjects of international relations is formed on this basis.

The economic development of countries, for various reasons, but in a natural way, is uneven,

which leads to changes in the balance of forces and the accumulation of contradictions that, to a certain extent, are settled by reforming and modernizing contractual relations or tacit acceptance of changes. However, over time, hidden fundamental geo-economic shifts associated with the unevenness of economic development destroy the equilibrium and cause the world order to be reformatted in accordance with the new power balance. At this time, geopolitics comes to the fore, continues to manifest itself in military confrontation and wars, in which integrative (economic, military, political, diplomatic, ideological, civilizational, etc.) power is practically measured, and a new equilibrium is achieved on the battlefield through victory over the enemy and his capitulation or on the basis of mutual exhaustion of forces and the inability to radically change the situation through military action. Then the time comes for peace negotiations and a new order is secured by peace agreements [7, 9]. This is exactly the sequence that is built within the framework of the logical and historical approach.

Today, the reformatting of the world order has entered a new phase. The Russian war against Ukraine, which is physically waged in the territory of Ukraine, in fact has a global hybrid nature, thanks to the military, economic, financial, diplomatic, informational, and ideological support of Western countries, NATO, and the EU. However, in practice, there are both hybrid war and hybrid peace. A hybrid "peace—war" system has been formed. This fact is especially clearly reflected in the Russian Federation's war against Ukraine, which has not been formally declared by anyone. It should be noted that under the hybrid "peace—war" system, the uncertainty of economic dynamics increases significantly, becoming pervasive.

The stability of the economic system in conditions of uncertainty of destabilizing external influences largely depends on the national rootedness of producers (just as the stability of a tree depends on its root system). National rootedness is determined by the level of the utilization of

national resources and production to ensure the society functioning, the growth of the population well-being and socio-economic development. It can be measured by the level of satisfaction of the real final needs of society and its members by national producers based on the utilization of national resources [9, 17, 24].

The post-war recovery of Ukraine's economy under fundamentally new initial conditions opens up a scope for the use of nationally rooted development strategy. It is a combination of the internal inclusiveness based on the mobilization of all internal factors with the external inclusiveness that means the globalization, for the sake of realizing the interests of national socio-economic development, rather than protectionism or isolationism [7, 9]. Also, in the post-war period, Ukraine will objectively require a new macroeconomic model that is discussed herein.

WORLD-SYSTEM APPROACH WITHIN THE FRAMEWORK OF ECONOMIC GLOBALISTICS

Subject to the requirements of a new socio-technological mode of production and structure, the global co-development that is rapidly becoming more complex in the 21st century introduces particular complexity into the processes of evolution and forms of interdependence and mutual influence of old and new economic processes and factors. The emerging global political economy and global studies shall provide answers to current and future problems and imperatives of global co-development. In this case, we need to consider the problem from a position of realism. The noospheric future of humanity expected by many researchers and the future world system of global solidarity are the prospects of centuries. Today, there is ample reason to conclude that global corporate capitalism is being replaced by a new stage of capitalism characterized by a transitive world system of technotronic network globalism, rather than by utopian "post-capitalism."

In contemporary research, it is generally accepted that globalization, global integration, and the transformational convergence of global co-development are the main drivers of the evolution of the world economic system in the 21st century. These factors significantly influence the historical fate of capitalism and its evolutionary transformations. The specific economic, organizational, technological, and social forms that these global transformation and convergence processes will materialize into remain highly debatable. It is widely recognized that the current stage of globalization, which emerged in the 20th century, was driven by a new level of development in productive forces, new needs of the world community, and new interests of major global corporations. These corporations, as powerful actors in the world market economy, have established an integrated reproduction system.

Regarding the globalization of the reproduction of world capital as the foundation for forming a new world system, the metamorphoses and evolution of its structure clearly indicate a trend towards the self-reproduction and self-expansion of global financial capital, resulting in an increased share of financial capital in the overall structure of global capital. Although there are emerging shifts in the structure of global capital towards a greater share of human and intellectual capital, these shifts are still less significant in scale and impact compared to the movement of global financial capital. This disproportionate increase in financial capital is leading to the creation of a new world system characterized by financial and economic globalism [5].

GLOBAL MILITARY-ECONOMIC CYCLES AND RELATED CHALLENGES

The cyclical dynamics of the modern world-system is shaped by the unity found within the diversity of global socio-economic cycles. Among these cycles, military-economic cycles hold significant relevance, as warfare, an integral component of civilizational development, serves as a

means of redistributing resources necessary for societal reproduction. Within the unfolding of global military-economic cycles, the intricate relationship between war and peace emerges as hybrid interpenetrating phenomena [7]. In essence, historical progress transforms capitalization and socialization into two interdependent processes of societal development, surpassing the adequacy of describing them solely in terms of separate systems. This evolution gives rise to a certain third, hybrid system [29].

Within the hybrid “peace–war” system, profound interclass, intercountry, and inter-civilizational contradictions emerge, accumulate, intensify, and are partially resolved. This dynamic fosters an internal mechanism of cyclical societal development. Societal evolution is marked by a cyclical alternation between periods of relative stability (peace) and periods of increasing instability, escalating to turbulence during global wars. Throughout the unfolding crisis-militaristic phases of military-economic cycles, methods to address the system’s contradictions are identified, laying the groundwork for upward economic trends.

In a historical context, nations that attained hegemonic status during their dominance estab-

lished socio-economic conditions and institutional norms at the international level for the long term. This ensured a relative stability within the capitalist world-system, albeit with unequal “rules of the game” for different countries.

The current highly unstable state of the capitalist world system suggests the onset of a period of significant transformations within the cyclical process of its development. Between 2020 and 2050, we anticipate a pronounced increase in the amplitude of cyclical fluctuations within the world system. This escalation is attributed to the coordinated deployment of crisis militaristic phases across the most crucial forms of global cycles within the capitalist world system (Table 1).

The local-global conflict in Ukraine and the renewed Israeli-Palestinian conflict are contributing to the conditions for crisis-militaristic phases within the deployment of the mentioned global cycles. Furthermore, they signal the onset of a new global militarization cycle, with the military-industrial complex emerging as a growth driver. This development also implies an intensification of military Keynesian policies, characterized by increased state military spending and efforts to encourage other countries to procure weapons from domestic military-industrial complexes.

Table 1. Characteristics of the Crisis-Militaristic Phases of the Most Important Global Cycles

Global cycle title	Title of crisis-militaristic phase in the cycle	Characteristics of the crisis-militaristic phase
Kondratiev cycle	“Intermediate War”	...acts as an economic stimulant at the beginning of the recovery phase of each Kondratiev cycle.
Long cycle of world politics	“Macro-Solution”	... unfolds as a global confrontation leading to world wars, at the end of which a global leader emerges; it lasts about 30 years.
Cycle of hegemony	“Thirty Years’ World War”	...unfolds as a ground war, involving almost all major military states of a certain era in large-scale confrontations that are extremely devastating for the land and population.
Systemic cycle of capital accumulation	“Territorialism”	...is a period of material expansion when monetary capital “sets in motion” a growing mass of goods, including labor and natural resources; occurs in the form of extensive development of the world, when control over territory and population is the main goal, and not a means to achieve the goal.

Source: Authors completed based on [7].

THE WARFARE DESTRUCTIVE IMPACT ON THE UKRAINIAN SOCIO-ECONOMIC LANDSCAPE

Human Dimension. During the ongoing war, there has been a significant reduction in Ukraine's human capital, a crucial factor in its economic development. According to the UN Human Rights Monitoring Mission, as of early April 2024, the number of civilian casualties from the war alone exceeded 31.3 thousand people, with over 10.8 thousand civilians losing their lives [30]. Presently, approximately 11.2 million Ukrainians, slightly less than a third of the pre-war population, have become internally displaced persons (IDPs) or war refugees abroad. The Ministry of Social Policy of Ukraine [31] reported that the number of officially registered IDPs surpassed 4.7 million as of mid-May 2024, with 2.5 million (53%) displaced individuals unable to return home due to destroyed housing, active hostilities, or territorial occupation. Globally, nearly 6.5 million refugees from Ukraine are registered [32]. By the beginning of April 2024, over 4.2 million of these refugees had obtained temporary protected status in the EU, with Germany (30.9% of total EU), Poland (22.7%), and the Czech Republic (8.7%) being the primary European countries hosting Ukrainian beneficiaries of temporary protection [33].

Infrastructure. During the two years of hostilities, a significant portion of Ukrainian housing, transport, and social infrastructure has been destroyed, rendering many settlements unsuitable for living and lacking basic social quality of life. According to the consolidated international assessment [34], by the end of 2023 in Ukraine, the following infrastructure objects had been damaged or destroyed:

- ◆ more than 2 million housing units (about 10% of the country's total housing stock);
- ◆ over 8,400 km roads and more than 50 km railways;
- ◆ more than 290 pedestrian bridges and 83 railway bridges;
- ◆ more than 13% of educational infrastructure, including 394 destroyed and 3,583 damaged

educational facilities of all types, with schools being the most affected (1,888 units);

- ◆ 1,242 public hospitals and outpatient clinics (12.5% of all healthcare facilities), along with 787 pharmacies.

Additionally, 174,000 km², or nearly 30% of the country's territory, is now contaminated with explosive ordnance, with the Kharkov and Kher-son regions being the most affected. This contamination significantly reduces opportunities for agricultural and logistics businesses in these areas [1].

Business. The first year of the Russian invasion was exceedingly difficult for businesses operating in Ukraine. According to data from the State Statistics Service, in 2022, the total number of active Ukrainian companies in the production, trade, and services sectors decreased by 108.9 thousand, or nearly one-third. Among these closures, there were 116 large enterprises (about one-fifth of all large enterprises), 2.7 thousand medium-sized companies (approximately one-sixth of all medium-sized companies), and 106.1 thousand small businesses (almost one-third of all small businesses) (Fig. 1).

All data from the State Statistics Service of Ukraine are provided without consider the occupied territories of Crimea, Donetsk and Lugansk regions, as well as Ukrainian territories covered by military operations.

It should be noted that an important factor in Ukraine's macroeconomic stability has been the

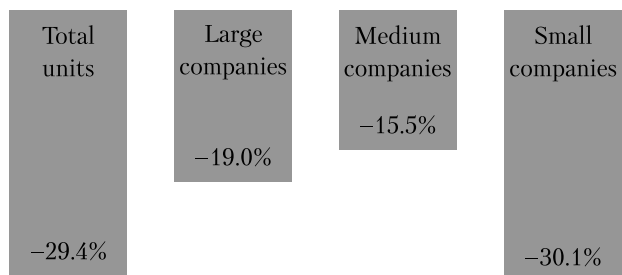


Fig. 1. Change in the number of active businesses of all forms of ownership in Ukraine, 2022 to 2021

Source: Authors completed based on [35].

implementation of state policies to support national businesses. These measures include as follows: state-funded relocation of large and medium-sized enterprises: special lending programs and other support for Ukrainian producers, such as: the “Affordable Loans 5–7–9%” program: the state grant program for processing enterprises, which provides up to UAH 8 million for development; the state grant program “Individual Business;” a significant reduction in the discount rate of the National Bank of Ukraine (NBU) from 25% in June 2022 to 13.5% by the end of April 2024; various initiatives to assist domestic exporters in entering foreign markets, primarily in Europe.

UKRAINIAN GENERAL AND SECTORAL DAMAGE, AND RECOVERY NEEDS

In mid-February this year, the report “Rapid Damage and Needs Assessment” for February 2022 – December 2023 jointly prepared by the UN, the World Bank, the European Commission, and the Ukrainian Government was presented. The report highlights the enormous negative consequences that almost two years of full-scale war have had on Ukraine’s macroeconomic, social, and environmental spheres. Overcoming these challenges and achieving reconstructive recovery

will require significant investment and effort [34]. According to the consolidated international assessment, by the end of 2023, the war had caused USD 152.5 billion direct damage to Ukraine, referring to the direct costs of replacing destroyed and/or damaged tangible assets. Additionally, the war has resulted in nearly USD 500 billion in losses, referring to changes in financial and economic flows caused by the war, such as increased operating expenses and loss of income, etc. [1]. The Ukrainian regions and aggregated economic sectors that have suffered the greatest damage and losses are detailed in Table 2.

The consolidated estimate of the damage and losses sustained by Ukraine as a result of hostilities, as of the end of 2023, as well as the funds needed for recovery in the next decade is shown in Fig. 2.

As can be seen from Fig. 2, the social sphere, including housing, requires the greatest funds for recovery in the next decade (2024–2033) of USD 161.8 billion. The total needs for Ukrainian recovery pursuant to the “building back better” principle in this period amount to USD 486.3 billion. This amount is almost three times higher than the nominal volume of domestic GDP for 2023, as calculated by the International Monetary Fund [36], given the average annual exchange

Table 2. Ukrainian Regions and Aggregated Economy Sectors Most Affected During the Wartime, February 2022 – December 2023

	Total Damage	Total Losses
	USD 152.5 billion	USD 499.3 billion
<i>Most affected regions</i>	Donetsk, Kharkiv, Luhansk, Zaporizhzhia, Kherson, and Kyiv Oblasts	Kyiv, Dnipropetrovsk, Donetsk, Zaporizhzhia, Kharkiv, and Kherson Oblasts, and Kyiv City
<i>Most affected sectors</i>	<ul style="list-style-type: none"> ◆ Housing ≈ USD 56 billion, or 37% of total damage; ◆ Transport ≈ USD 34 billion, or 22%; ◆ Commerce and Industry ≈ USD 16 billion, or 10%; ◆ Energy and Extractives ≈ USD 11 billion, or 7%; ◆ Agriculture = USD 10 billion, or 7% 	<ul style="list-style-type: none"> ◆ Commerce and Industry ≥ USD 173 billion, or 35% of total loss; ◆ Agriculture ≈ USD 70 billion, or 14%; ◆ Energy and Extractives = USD 54 billion, or 11%; ◆ Transport ≈ USD 41 billion, 8%; ◆ Explosive hazards management ≈ USD 35 billion, or 7%; ◆ Environment, natural resource management, and forestry (large part linked to the Kakhovka Dam breach) ≈ USD 27 billion, or 5%

Source: Authors completed based on [34].

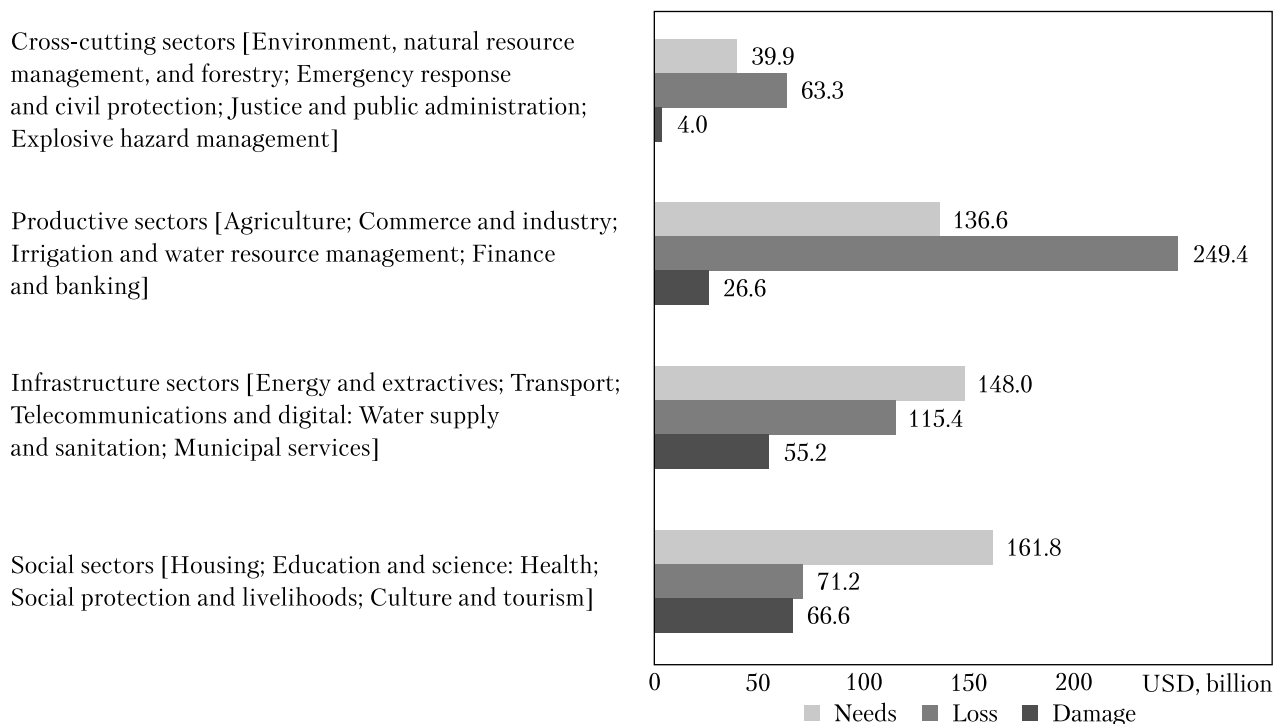


Fig. 2. Total damage and losses for February 2022 – December 2023, and total recovery needs for 2024–2033 by Ukraine's aggregated sectors

Source: Authors completed based on [34].

rate of the NBU. Accordingly, for the socio-economic recovery, Ukraine objectively needs a significant donor and credit support from international partners, but over time it should transit to relying on its own forces, using the concept of nationally rooted development. The important steps in this direction are the approval in August 2023 by the NBU and other authorities of the new Strategy for the Development of the Ukrainian Financial Sector, as well as the adoption of the National Revenue Strategy until 2030, approved by the order of the Cabinet of Ministers of Ukraine dated 12.27.2023 No. 1218-r, which provides for the implementation of a several tax and customs reforms. The launch of the All-Ukrainian economic platform *Made in Ukraine*, in January 2024, in accordance with the Presidential Decree dated 26.01.2024 No. 31/2024 is also positive, primarily in the context of supporting the

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nationally rooted business. The reforms foreseen by the Ukraine Facility Plan, as developed by the Ukrainian Government and approved by the European Commission on April 15, 2024, which defines the conditions for EUR 50 billion macro-financial aid in 2024–2027, also contribute to this. The specified Plan predominantly focuses on the key sectors that have both national importance and global potential: the energy sector; transport and export logistics; agro-food sector; critical raw materials; entrepreneurship, SME development and processing industry; IT sector.

RESILIENCE OF UKRAINIAN ECONOMY AND ITS RECOVERY STARTING WITH 2023

After the large-scale shocks of the war in 2022, the Ukrainian economy has relatively adapted to difficult realities and increased its resilience.

The primary and vital factor for this is the provision of colossal financial, military equipment and humanitarian support from the collective West, primarily the EU, the USA and international organizations. It is thanks to this support that during the war the national currency, the General Government budget and the social security system of Ukraine have not collapsed. In 2023, in Ukraine, there appeared clear signs of gradual economic recovery, including the following:

- ◆ Real GDP growth, more than previously expected. Today, the NBU estimates Ukraine's real GDP growth at 4.9%; the IMF and the Ministry of Economy of Ukraine estimates are 5%. However, given the catastrophic decline of 29.1% in 2022, the country's real GDP in 2023 is as few as about $\frac{3}{4}$ of its pre-war level;
- ◆ The construction production indices in January–December 2023 vs the same period in 2022 increased by 22.6%, incl. the index of construction of engineering structures that grew by 32.9%. The index of industrial production for the specified period added 5.9% [35];
- ◆ Sociological surveys for the 4th quarter of 2023 (Enterprise Business Expectations Index, NBU) have shown that Ukrainian business for the third consecutive quarter expects business activity to grow in the next 12 months, albeit at a slightly lower rate;
- ◆ The NBU estimated the net inflow of foreign direct investment in 2023 at USD 4.2 billion, although among them USD 3.2 billion (76%) was the reinvestment of income;
- ◆ The labor market has been gradually recovering. The Ukrainian State Employment Service showed a 1.8-time reduction in its officially registered unemployed people, from 867.6 thousand people, in 2022, to 483.2 thousand people, in 2023. The Ministry of Economy of Ukraine has reported a decrease in the unemployment in 2023 from 21.1% to 19%;
- ◆ The average nominal monthly wage in the economy, per one full-time employee, has positive dynamics: in the 3rd quarter of 2023, it increased to UAH 17,937 (EUR 395, at the cur-

rent exchange rate), while in the same period of 2022, it was UAH 14,619 (EUR 428). In the 3rd quarter of the pre-war 2021, it amounted to UAH 14,194 (EUR 457);

- ◆ The consumer prices (December to December of the previous year) fell to 5.1%, in 2023, as compared with 26.6%, in 2022;
- ◆ The hryvnia exchange rate that is regulated by NBU is stable; the international reserves of Ukraine increased by 42% and exceeded USD 40.5 billion (thanks to external financial support).

Positive restorative tendencies in the domestic macroeconomic dynamics have been preserved in 2024. Authoritative institutions in Ukraine [42] and abroad [36, 52] have predicted, other things being equal, these tendencies in the current and next few years will strengthen. However, excessive optimism about Ukraine's rapid economic recovery would be misplaced.

The Ukrainian commodity exports have been declining at a high rate for the third consecutive year, its value equivalent in 2023 amounted to as few as 53.1% of the pre-war level in 2021. The ratio of commodity exports to imports decreased from 0.93, in the pre-war year of 2021, to 0.57, in 2023. The deficit of Ukraine's foreign trade in goods for the specified period in absolute units increased almost 6 times: from USD 4.771 billion to USD 27.376 billion [35].

Before the war, Ukraine had an export-oriented economic model for over two decades (grain, metal, fertilizers, low- and medium-tech equipment). However, during the war, many metallurgical, machine-building, and chemical enterprises have been lost or suspended their activity; many farmlands are not used because of contamination with military debris or mines; transport and logistics have been seriously disrupted, incl. air transport has been stopped and sea transport has become more complicated. With these factors, the Ukrainian economic model is very transformed under ongoing military shocks and increasing global geo-economic fragmentation [1, 9, 24].

The most specific feature of modern socio-economic dynamics is uncertainty. It is a consequen-

ce, first of all, of the transition from the industrial-market to the information-network economy that is based on fundamentally different laws of functioning, the formation of a hybrid “peace–war” system, and climate changes. For Ukraine, uncertainty takes on a specific character. The model of further development is formed under uncertainty of the basic conditions. Thus, the development territory controlled by the government, the population size, the scale of migration, changes in the configuration of the world space, as well as the future state of the united Europe that Ukraine intends to integrate into are currently uncertain.

Under such conditions, only a *contextual model* of socio-economic development *rooted in the national background* can be effective. The economy's contextual model is based on the fact that economic processes are analyzed and evaluated only in the context of the real situation and events. Outside this context, all conclusions are meaningless. This is fundamentally important under the conditions of dynamic changes and their uncertainty, which are characteristic of the situation in Ukraine and has been becoming more and more typical for worldwide development.

The contextual model has been used in various sciences and is theoretically well-founded, including in economic research (N. Goodwin, K. Lancaster, T. Weisskopf, etc.). Economic processes are analyzed in the social context of values, culture, ethics, politics, institutions, as well as in the context of ecology, external environment, etc.

The most important thing for Ukraine is the context of uncertainty related to the war and its consequences, and European integration. This affects all components of socio-economic development and forces Ukraine to address, in the first place, the fundamental problems of human existence and development, which are related to ensuring normal living conditions for people. The key to solving these problems may be the implementation of the government humanitarian economy strategy that focuses on modern basic human needs, not only in the national conditions, but also in the global context [37]. This strategy is fully congruent with the principles of the EU modern social mainstream, namely, the European Pillar of Social Rights, and this can become an additional advantage for Ukraine as an EU associate member.

PUBLIC FINANCE AS A FOCUS AREA OF KEY CHALLENGES FOR MACRO-FINANCIAL RESILIENCE

Under martial law, the most vulnerable point of the Ukrainian economy is public finances. The vital need to finance multiply increased military spending and the loss of almost a third of GDP in 2022 triggered a rapid expansion in the total fiscal deficit and national debt of Ukraine. According to IMF calculations, as compared with the pre-war times, in 2023, in specific terms, the total fiscal deficit grew almost 5 times, while the public and public guaranteed debt increased 1.6 times (Table 3).

Table 3. Selected Ukrainian Financial Indicators, 2021–2027 (IMF data, March 2024)

	Years						
	2021	2022	2023	2024	2025	2026	2027
	Fact		Forecast				
Fiscal balance (% of GDP) <i>(includes the central and local governments and the social funds)</i>	–4.0	–15.7	–19.7	–13.7	–7.3	–4.7	–3.5
Public and publicly-guaranteed debt (% of GDP)	50.5	78.4	82.9	94.0	96.7	95.9	93.8
<i>For reference:</i>							
Real GDP (% change)	3.4	–29.1	5.0	[3 to 4]	6.5	5.0	4.5

Source: Authors completed based on [36].

In 2023, the total expenditure of Ukraine's National Budget (UAH 4,014.4 billion) exceeded the revenues (UAH 2,672.0 billion) 1.5 times. However, the total expenditure on security and de-

Table 4. Financing Sources of Ukraine's National Budget for the Period from February 24, 2022, to April 25, 2024 (USD million)

Source	Years		
	2022	2023	2024, April 25
European Union	7.961	19.530	6.484
USA	11.980	10.950	
International Monetary Fund	2.693	4.475	881
Japan	581	3.626	2.131
Canada	1.889	1.757	1.471
World Bank	1.385	660	
Great Britain	1.040	998	515
Germany	1.584	105	
European Investment Bank	720		
France	437		
Italy	330		
Netherlands	318		
Norway	21	190	295
Spain		96	3
Denmark	51		
Sweden	49		
Finland		36	
Switzerland		30	
Lithuania	22		
Ireland		21	
Latvia	16		
Austria	11		
Belgium	5	3	
Iceland	0.5	2	
Albania	1		
Estonia		0.1	
Total	31.095	42.479	11.780

Source: Authors completed based on [40].

fense amounted to UAH 2,648.8 billion that was almost 100% of the total revenues of the National Budget, or nearly 41% of the country's estimated GDP in that year [38]. In fact, presently Ukraine has been directing all its budget revenues to the warfare. So, it has to finance all other items of budget expenditure through borrowing, overwhelmingly, in external markets.

Based on data from the Ministry of Finance of Ukraine [39], the sources of financing the General Fund of the National Budget in 2023 were war-bonds (26.7%) and external loan and grant support (73.3%). Since the beginning of the war, the external financing of Ukraine's National Budget, in 2022, amounted to almost USD 31.1 billion, while, in 2023, it reached almost USD 42.5 billion. As of the end of April 2024, this indicator exceeded USD 11.7 billion (Table 4). Since February 2022, Ukraine's huge budget deficit has been covered by external borrowers and donors and in the upcoming years their financial support will be critically necessary for the country [1]. At the same time, it is important that the national macro-financial strategy in post-war time is oriented towards the gradual reduction of this dependence, through the stimulation of economic growth, etc. instruments of state governance.

MAIN RISKS AND CHALLENGES FOR UKRAINIAN POST-WAR RECOVERY

It should be noted that the effectiveness of the external financial support received by Ukraine largely depends on its domestic institutional environment that generates certain risks. The most serious of them are corruption risks, as it has been stated both by many international organizations and by national businesses as a determining driver for country's economic dynamics. The sociological survey by Transparency International Ukraine (June 2023) has shown that the Ukrainian citizens place corruption in third place after the war (98%), and the destruction of infrastructure and

housing (87%), while for the business sector, corruption (81%) issues seem to be more serious than the destruction (78%) [41]. The business community in Ukraine strongly complains about corruption, unprofessionalism of the authorities, the injustice of the judicial system and is concer-

Table 5. Key Risks and Challenges for Ukraine's Macroeconomic Recovery in the Short- and Medium-Term Prospects, Assessment as of April 2024

Type of risks	Periods	
	2024–2025 (impact on the immediate period)	2024–2027 (impact over a wider period)
External and Internal risks	<i>Military risks</i>	
	<ul style="list-style-type: none"> ◆ Continuation of the war on the territory of Ukraine; ◆ The impossibility, for various reasons, of the full economic use of a significant part of the territory that has undergone temporary occupation and the destructive consequences of active hostilities, in particular due to the need for mass demining; ◆ Large-scale wave of mobilization; ◆ Loss of the ability to unblock Ukrainian seaports and their free use 	
Internal risks	<i>Non-military risks</i>	
	<ul style="list-style-type: none"> ◆ Maintaining the current level of corruption; ◆ Demographic crisis: shortage of labor resources – an extremely large percentage of the population in need of social support (pensioners, children, disabled) – gender shift; ◆ Maintenance of low lending activity of commercial banks in the real sector; ◆ Low level of reform implementation; ◆ Impoverishment of most of the population; ◆ Additional issuance of funds to finance expenditures of the National Budget or the Pension Fund, other social insurance funds; ◆ Strengthening of insolvency of economic activity subjects; ◆ Obtaining a low yield of grain crops; ◆ Significant power deficit in the electric power sector (energy terror); ◆ Rapid increase in labor migration abroad 	<ul style="list-style-type: none"> ◆ Demographic crisis: shortage of labor resources – an extremely large percentage of the population in need of social support (pensioners, children, disabled) – gender shift; ◆ Maintaining the current level of corruption; ◆ Maintenance of low lending activity of commercial banks in the real sector; ◆ Low level of reform implementation; ◆ Impoverishment of most of the population; ◆ Additional issuance of funds to finance expenditures of the National Budget or the Pension Fund, other social insurance funds; ◆ Strengthening of insolvency of economic activity subjects; ◆ Rapid increase in labor migration abroad
External risks	<ul style="list-style-type: none"> ◆ Weakening, delay or suspension of financial support to Ukraine from international partners, in particular a reduction in the volume of funding from the EU and the USA (including due to the internal political situation in the partner countries) ◆ Deep socialization of a significant part of Ukrainian refugees abroad with minimal probability of their return in the future, continuation of the population outflow from Ukraine (men will go to their families) after the cessation of the war ◆ Introduction of new customs tariffs and restrictions, blocking of logistics by partner countries ◆ Slow processes of Ukraine's integration into the European Union 	<ul style="list-style-type: none"> ◆ Weakening, delay or suspension of financial support to Ukraine from international partners, in particular a reduction in the volume of funding from the EU and the USA (including due to the internal political situation in the partner countries) ◆ Deep socialization of a significant part of Ukrainian refugees abroad with minimal probability of their return in the future, continuation of the population outflow from Ukraine (men will go to their families) after the cessation of the war ◆ A new world crisis

Source: Authors completed based on [42].

ned about population migration and lack of investment in the national economy.

In addition to corruption, there are many other significant risks for Ukraine's recovery in the short- and medium-term prospects. In April 2024, the Ministry of Economy of Ukraine has comprehensively assessed the following risks for 2024–2027 (Table 5).

As shown in Table 5, the Ministry of Economy of Ukraine, based on expert consensus, has diagnosed the military risks as the most acute ones, while among the non-military internal risks, in addition to corruption, it has named risks and challenges related to: the deepening of the demographic crisis and the shortage of labor resources; ineffective reforms; the impoverishment of the majority of Ukrainians; weak bank lending to business, etc. Among the most important external risks of a non-military nature, according to the consensus forecast for 2024–2027, as presented by the Ministry, there are the problems with the further obtainment of external financial support for Ukraine, as well as the deep “rooting” of a significant part of Ukrainian refugees abroad with a minimal probability of their return to the homeland. In the medium-term perspective, the onset of a new world crisis is added to this list of risks (which is quite likely in the context of military-economic cyclicity, as we have mentioned above).

To reduce the military and non-military risks, Ukraine has been taking regulatory, legislative, diplomatic, and other public policy measures and closely cooperating with its partners. For instance, in October 2023, France introduced a bilateral investment insurance mechanism in Ukraine. The French state insurance company *Bpifrance Assurance Export* will insure French companies that are ready to invest in Ukraine and take an active part in the recovery of the country without waiting for the end of the war. Such investment insurance covers up to 95% of asset losses of French investors and protects them or credit institutions that issue investment loans against the risks of property damage or non-payment, non-transfer, expropriation or political violence [43].

In February 2024, the Ukrainian Financial Stability Council approved the Concept for the implementation of fully functional War Risk Insurance System in Ukraine, as provided for in the Memorandum on Economic and Financial Policy between Ukraine and the International Monetary Fund. The model of war risk insurance, as defined by the Concept, provides for the establishment of mandatory and voluntary insurance that functions with the engagement of local insurers, international reinsurers, and the government in the form of a special State Agency or another institution determined with international donors as a result of future discussions [44]. Understandably, for the implementation of the War Risk Insurance System, it is still necessary to hold consultations with national business and financial (insurance) associations and also to develop the necessary laws of Ukraine and to adopt them by the Parliament. This issue has been already progressing, as since January 1, 2024, the Law of Ukraine on Amendments to the Law of Ukraine on the Financial Mechanisms for Stimulating Export Activities Regarding Insurance of Investments in Ukraine Against War Risks, adopted on 22.11.2023 No. 3497-IX, has entered into force. It grants the Ukrainian State Export-Credit Agency with the right to insure investments against war risks and thus opens access to this instrument specifically for Ukrainian enterprises.

STRENGTHENING DEMO-ECONOMIC BURDEN AS A LONG-TERM CHALLENGE FOR THE UKRAINIAN LABOR MARKET AND THE SOCIAL PROTECTION SYSTEM

Given the significant outflow of labor resources from the national labor market of Ukraine as a result of conscription measures and the intensive migration of Ukrainians as refugees from the war abroad, as well as the growth (other things being equal) of the number of pensioners in Ukraine as a rapidly “aging nation,” there are risks for the financial sustainability of the national system of social, including pension, insurance. To date, ma-

ny Ukrainian refugees have become a valuable labor asset for numerous European host countries. These individuals contribute to the local economy by working, paying taxes and social insurance contributions, and engaging in consumer spending. This phenomenon significantly boosts the economies of their host countries. The example of Ukrainian refugees in Poland is particularly illustrative of this economic impact.

UNHCR, in collaboration with *Deloitte*, has assessed the contribution of Ukrainian refugees to the economic growth of Poland, based on the fact that as of October 2023, about 1 million war refugees from Ukraine (mostly women and children) lived in Poland, of which 225–350 thousand people have already integrated into the national labor market. The estimates have indicated that only thanks to the Ukrainian refugees' contribution to the Polish production and consumption, Poland's GDP grew by 0.8–1.1%, in 2022, and by 1.05–1.45%, in 2023. In the long term, as forecasted, the Ukrainians will add to the Polish GDP growth by approximately 0.85–1.3% annually. The Polish government is very pleased with such a high “payback” from supporting refugees from Ukraine. As reported, in 2022–2023, Poland's Government expenditure on their financial and social support totaled PLN 20 billion that was more than offset by additional tax. Other budgetary and extra-budgetary revenues for the specified period amounted to PLN 23.8–33.6 billion [45].

There is a significant threat that the rapid transformation of the Ukrainian refugees abroad into an objectively demanded and “profit-generating” labor and demographic asset of the host countries of Europe and the world may lead to critical human development trends in Ukraine. This threat is realized provided the inertial demographic, social and other directions of our government policy remain unchanged, as demonstrated by the draft Demographic Development Strategy of Ukraine for the period until 2040 [46] presented by the Ministry of Social Policy of Ukraine in April of this year. According to the inertial scenario provided by this Strategy, the population of Uk-

raine within the borders of 1991, according to the Institute of Demography and Quality of Life Problems of the NAS of Ukraine, may decrease to 28.9 million people by January 1, 2041, and to 25.2 million, by January 1, 2051 [46], that is 1.4–1.6 times, as compared with the beginning of the war. Considering the severe consequences of the military shocks, these negative data can be greatly reduced in practice, which is unacceptable for preserving the Ukrainian nation.

GROWING SCALE AND DEPTH OF POVERTY IN UKRAINE

The shock effects of the war have critically lowered the standard of living of the vast majority of Ukrainian citizens, especially IDPs and those who remained living in the front-line zones. During the war in Ukraine, the scale and depth of poverty have increased manifold, because of the loss of jobs, property, and a reduction in the population income (especially, given the inflationary component). According to international estimates, since the beginning of the war, as of the end of 2023, the loss of Ukrainian households income amounted to at least USD 60 billion [34].

According to demographers' calculations, based on the criterion of monthly consumption below the actual subsistence minimum (approximately twice the officially established minimum), 39% of Ukraine's population was below the poverty line in pre-war 2021. Since the beginning of the war, this figure increased to 60%, in 2022, and reached 67%, in 2023, covering approximately 20 million Ukrainians living in government-controlled territories [47].

In the conditions of martial law, the labor poverty of Ukrainians has been increasing as well. According to the Pension Fund of Ukraine (March 2023), the share of workers who received less than the minimum wage in the total number of employees increased from 11.5%, in December 2021, to 18.8%, in December 2022 [48]. It is quite obvious that in the post-war period, the priority goal will be to reduce the severe poverty in

Ukrainian society, in order to raise the life quality, as well as to preserve the high level of people solidarity, which has been demonstrated since the beginning of the war.

In conditions of strong military shocks and continuing ultra-high level of Ukrainian corruption as compared both with Europe [49] and the world [50], the mentioned trends of accelerated growth of poverty in Ukraine have caused a corresponding increase in social polarization and a large deficit of social justice in Ukrainian society. In this context, one of the serious societal threats may be the fact that in Ukraine, during all the years of independence, the middle class that traditionally is the pillar of democracy and social stability has not been formed yet. To avoid this threat, in the post-war period, it is important to ensure the proper conditions for the normal reproduction of the middle social strata, which have been substantiated in [51]. In our opinion, an institutionally important starting point for this can be Ukraine's step-by-step implementation of modern EU strategic approaches to long-term social development. In particular, the La Hulpe Declaration on the Future of the European Pillar of Social Rights, as adopted in April 2024, states a purposeful desire to ... *a social Europe, with the aim of creating social and economic progress, ensuring equal opportunities for all, quality jobs and fair working conditions, reducing poverty and inequalities and fostering a just and fair transition to climate-neutrality* [52].

In December 2023, the IMF Executive Board completed an inspection of Ukraine's compliance with its obligations under the Extended Fund Facility, as a result of which the country received a roughly USD 900 million for budget support. In this regard, IMF Managing Director K. Georgieva issued the statement, *"Russia's invasion of Ukraine continues to bring enormous social and economic costs to Ukraine. However, Ukraine's economy has been resilient as a recovery takes hold, and macroeconomic and financial stability has been preserved, thanks to skillful policymaking by the Ukrainian authorities as well as*

substantial external support" [53]. A similar conclusion regarding the Ukrainian resilience was made in February 2024 by the representatives of the European Commission, the World Bank, and the United Nations Resident Coordinator in Ukraine [54]. All of them together affirmed Ukraine's progress, but also focused attention on the complexity and resource intensity of our post-war reconstructive recovery. However, when talking about the Ukrainian economy resilience that is based mainly on the unprecedented financial and credit support of international partners, one should keep in mind the risks of a rapid increase in the fiscal deficit and the debt burden of Ukraine, which over time may become absolutely unbearable for the country.

Furthermore, the World Bank has drawn attention to the fact that very often states affected by military conflicts rely on external financing of the national social protection system, which creates obvious risks for its financial stability in the long term. For most post-conflict societies with an aging population, this means that the "cost" of social insurance in such countries grows rapidly [55], and so does the vulnerability of national pension systems, because of deteriorating demographic situation and the rapidly growing post-war demo-economic burden. In this regard, the urgency of the gradual transition in postwar period to self-reliance, while building up one's own macro-financial capacity and forming a new economic model, namely, a contextual model of socio-economic development rooted in the national background (which we have mentioned above), is objectively increasing for Ukraine.

Nowadays, in the cyclical development of the global "peace—war" system, a period of deep aggravation of inter-class, inter-country, and inter-civilization contradictions has begun; this initiates the deployment of crisis-militaristic phases of global military-economic cycles. The full-scale war in Ukraine, which began on February 24, 2022, is a component of the global, very complicated, multifaceted and long-term process of reformatting the world order and can be adequately

assessed only in the context of the “peace—war” global hybrid system.

The continued warfare has a devastating impact on the Ukrainian socio-economic landscape and entails increasing the post-war recovery costs. Ukraine has suffered tremendously for more than two years of heavy war, but with the extraordinary all-round support of international partners, it has shown a significant resilience — the ability to withstand large-scale shocks, to get transformed and become more resilient in the face of modern hybrid threats.

The key factors for the Ukrainian economy resilience under the shock impact of the Russian invasion are related to the colossal humanitarian, financial, and military (weaponry and equipment) support provided by partner countries from the collective West. For more than 4 million Ukrainian refugees abroad, temporary protection status in the European Union has become salvation and vital support. An important factor in the macroeconomic resilience of Ukraine is also the government policy measures to support people and businesses, including the relocation of large and medium-sized enterprises at the budget expense, as well as lending programs and other government support for the business sector, a significant reduction in the NBU discount rate, various measures to help domestic exporters in entering foreign markets, primarily in Europe.

At the same time, there are serious challenges and risks for stress resistance and post-war reconstructive economic recovery of Ukraine. The most important of them is the continuation of the war on the Ukrainian territory, an increase in human losses, material destruction and damage. In the institutional and macroeconomic dimension, Ukraine's extremely high corruption risks pose significant threats. In the macro-financial aspect, the key challenges are related to the count-

ry's huge fiscal deficit and public debt, which, in 2023, according to the IMF, amounted to 18.6% and 87.1% of Ukraine's GDP, respectively. In the social aspect, the main risks and challenges of the post-war recovery are associated with the national labor market and the growing demo-economic burden, growing poverty and deepening social polarization of Ukrainian society.

The key characteristic of the specific conditions of Ukraine's post-war recovery and development is the uncertainty regarding its territory, population, scale of migration, changes in the world space configuration and the future state of a united Europe, into which Ukraine intends to fully integrate.

In the conditions of significant uncertainty, only a contextual model of nationally rooted development can be effective and meet the requirements of resilience, which relies on the activation of one's own resource potential and does not blindly follow abstract models that have been successful in other countries. This model comes from the fact that economic processes are analyzed and assessed only in the context of the real situation and ongoing events. The authors believe that this model is congruent with the current realities of Ukraine and the challenges facing it in the global hybrid “peace—war” system and under post-conflict recovery and capacity building of Ukraine as an EU associate member.

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УКРАЇНСЬКА ЕКОНОМІКА: РЕЗИЛЬЄНТНІСТЬ ПІД ЧАС ВІЙНИ ТА ВИКЛИКИ ПІСЛЯВОЄННОГО ВІДНОВЛЕННЯ

Вступ. Війна чинить безпрецедентний негативний вплив на українську економіку та суспільство, соціоекономічні наслідки якого потребують ґрунтовної оцінки та наукового осмислення.

Проблематика. Стратегічні, програмні та модельні напрацювання щодо післявоєнного реконструктивного відновлення України мають враховувати основні детермінанти резильєнтності національної економіки та виклики, що постають перед нею у глобальних координатах гібридної системи «мир—війна».

Мета. Розкрити вплив воєнних шоків у макроекономічному, макрофінансовому та соціальному аспектах за період лютого 2022 р. — квітня 2024 р., визначити основні ризики та виклики післявоєнного реконструктивного відновлення України.

Матеріали й методи. Використано матеріали та статистичні дані профільних вітчизняних та міжнародних структур. Застосовано методи: діалектичний та логіко-історичний, статистичні, таблично-графічні, інституційної методології, циклічний та світ-системний аналіз, макроекономічне агрегування, аналіз часових рядів.

Результати. Вплив воєнних шоків завдає Україні значних збитків, але в цілому за понад два роки війни вона продемонструвала соціально-економічну резильєнтність. Проте існують серйозні виклики та ризики для резильєнтності та економічного відновлення післявоєнної України, найважливіші з них — продовження війни на українській території, надвисока корупція, залежність від зовнішнього фінансування, зростання демоекономічного тягаря та бідності.

Висновки. Повномасштабна війна в Україні є складовою глобального, надскладного та довготривалого процесу переформатування світового порядку і може бути адекватно оцінена лише в контексті глобальної гібридної системи «мир—війна». У нинішніх умовах значної глобальної невизначеності саме контекстуальна модель національного розвитку, яка базується на активізації власного ресурсного потенціалу, може забезпечувати резильєнтність України.

Ключові слова: військово-економічні цикли, гібридна система «мир—війна», сучасна гібридна війна, реконструктивне відновлення, міжнародна фінансова підтримка.