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ECONOMIC TRENDS IN POST-WAR UKRAINE: CHALLENGES AND OPPORTUNITIES

The recent unprovoked military invasion by the Russian Federation into independent Ukraine has posed an unprecedented challenge to the modern world. Ukraine, as the primary battleground, has borne the brunt of these consequences, with its economy operating under wartime conditions, burdened by numerous restrictions. This article explores potential paths for Ukraine's economic development in the post-war period. Drawing from global examples of countries recovering from armed conflicts, the article emphasizes the importance of external support and timely utilization of opportunities. It reviews relevant literature and highlights the need for strategic planning and mechanisms to achieve sustainable development goals in post-conflict scenarios. The article delves into the dualistic nature of Ukraine's current economic situation, discussing both the destructive impacts of the war and emerging development opportunities. The article outlines the two phases of Ukraine's economic reconstruction: pre-conclusion of military operations and post-conclusion. It explores critical aspects of post-war recovery, including rebuilding infrastructure, revitalizing the economy, and achieving sustainable economic growth. The article presents Ukraine's vision for a comprehensive post-war economic recovery plan, akin to the "Marshall Plan". Emphasizing Ukraine's potential for innovation and competitiveness, the article highlights the importance of supporting innovation and adopting the Quadruple Helix Model to engage citizens and civil society in the innovation process. It underscores the significance of local self-government in stimulating economic growth and social stability. In conclusion, the article asserts that Ukraine's post-war recovery requires a comprehensive and strategic approach, substantial international support, and a commitment to innovation and local development. It underscores the importance of creating an environment that promotes economic growth, social justice, and citizen participation in shaping Ukraine's future.

Keywords: Post-war Ukraine, Economic recovery, Russian invasion, European Union, Sustainable development, Innovation.

Introduction. The modern world has faced an extraordinarily serious and unprecedented challenge in recent European history – the unprovoked military invasion by the Russian Federation into the territory of independent Ukraine. This situation has jeopardized peace and stability on the European continent and triggered a crisis in the security space of the European Union. The consequences of this challenge have manifested in the form of migration, food, energy, and economic crises that have impacted regions worldwide. Ukraine, in particular, bears the brunt of these consequences.

The prolonged resistance to Russian aggression has led to Ukraine's economy operating under wartime conditions with numerous restrictions, which may continue to have a negative impact on the country's development. Post-war economic recovery in Ukraine will need to be implemented with the support of international financial organizations and funds. The global community has shown readiness to provide joint assistance to Ukraine in the restoration of infrastructure, institutional modernization, and economic transformation. A strategic plan for Ukraine's economic recovery should be developed and implemented based on the successful experiences of foreign countries. The approach to recovery in each country is unique and is determined by its economic, geopolitical, and cultural characteristics¹.

World history offers numerous examples of countries undergoing recovery processes after armed conflicts. Following the end of World War II, more than thirty major conflicts and over two hundred fifty

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¹ Kindzerski, Yu. (2021). The peculiarities of formation of industrial competitiveness of Ukraine and the EU in the light of the pandemic challenges. Actual issues of modern development of socio-economic systems in terms of the COVID-19 pandemic. Sofia, Bulgaria: VUZF Publishing House, 182-198.

military disputes were recorded. Over sixty countries were involved in these events, but only a few successful economic recovery examples can be highlighted. Each of these examples is unique and depends on various factors, including natural and resource capabilities, political, economic, legal, social, environmental, and geostrategic contexts. The common factor for success in these recoveries is the level of external support and the ability to utilize available opportunities wisely and timely¹.

In the context of armed conflicts, the scientific community shows increased interest in post-war reconstruction issues for countries. The portrayal of the process of replacing the previous technological order with the new one and the necessary actions for effective economic development in times of crisis can be found in the research of leading scholars², who emphasize the importance of strategic planning and the implementation of mechanisms to achieve sustainable development goals. Questions related to the economic recovery of Ukraine after the war have been addressed by O. Panchenko, D. Arbeláez-Campillo, O. Kaminska, M. Rojas-Bahamón³, F. Hussein⁴, M. Bida, I. Ruda⁵, V. Hrytsiuk⁶, D. Shvets, Y. Kobko, V. Sokurenko⁷, and others. Despite significant research in this field, new challenges arise for the economic development of Ukraine in the context of armed conflict on its territory, making scientific research in this direction particularly relevant and timely.

The aim of the article is to identify potential paths for the development of Ukraine's economy in the post-war period.

Main text. The current economic situation in contemporary Ukraine is characterized by dualism, where on one side, destructive processes resulting from the war are observed, and on the other side, opportunities that were previously considered only as potential development prospects are emerging. Ukrainian President Volodymyr Zelensky has emphasized the need to establish a clear understanding of sustainable economic development following the wartime events and has identified several priorities:

- ensuring a comfortable and favorable environment for small and medium-sized businesses;
- accelerating digitization and implementing reforms in areas such as security, the judicial system, anticorruption efforts, and others.

According to the President, this entails not only a significant amount of work but also a rethinking of how the country will develop in the future. He emphasized the importance of sectors that can serve as the foundation for growth after the conflict. The President concluded that for the country's development, it is essential not only to have financial resources but also ideas and human potential⁸.

The reconstruction of the economy in the Ukrainian territory after the war will be carried out in stages. However, it is impossible to deny that regional and sectoral development will occur under conditions

¹ Pidorycheva, I.Yu., Antoniuk, V.P. (2022). Modern Development Trends and Prospects for Innovation in the Technology-Intensive Sectors of Ukraine's Industry. *Science and Innovation.18* (1), 3-19. DOI: https://doi.org/10.15407/sci ne18.01.003.

² Irtyshcheva, I., Kramarenko, I., Sirenko, I. (2022). The economy of war and postwar economic development: world and Ukrainian realities. *Baltic Journal of Economic Studies*, 8(2), 78-82. DOI: https://doi.org/10.30525/2256-0742/2022-8-2-78-82; Bluszcz, J., Valente, M. (2022). The Economic Costs of Hybrid Wars: The Case of Ukraine, *Defence and Peace Economics*, 33 (1), 1-25. DOI: https://doi.org/10.1080/10242694.2020.1791616; Zanfei, A. (2022). How exogenous is war? The links between economic, military, trade and industrial policies in the upsurge of Russia-Ukraine conflict. *Journal of Industrial and Business Economics*. 49, 759-760. DOI: https://doi.org/10.1007/s40812-022-00234-0

³ Panchenko, O.I., Arbeláez-Campillo, D.F., Kaminska, O.L., Rojas-Bahamón, M.J. (2022). War in Ukraine and recession: Is new economic crisis threatening the world? *Amazonia Investiga*, 11(56), 6-8. DOI: https://doi.org/10.34069/AI/2022.56.08.0

⁴ Hussein, F. (2022). Yellen: Ukraine war fallout threatens 'stagflation,' hunger. *AP News*. https://apnews.com/article/russia-ukrainegovernment-and-politics15014b248051a4ccc56cafb8c78c5fc8 (2023, September, 16).

⁵ Bida, M., Ruda, I. (2022). Economic and financial consequences of war in Ukraine: analysis of development scenarios. *Financial Internet Quarterly, 18 (3), 88*-101. DOI: https://doi.org/10.2478/fiqf-2022-0022
⁶ Hrytsiuk, V. (2023). Russia's War Against Ukraine: Military, International Legal, Geopolitical and Economic Dimensions. *Ukrainian Historical Journal, (2), 5-33*. DOI: https://doi.org/10.15407/uhj2023.02.005
⁷ Shvets, D., Kobko, Y., Sokurenko, V. (2023). Legal and economic issues of national security management in Ukraine: objective values and national interests in the context of war. *Baltic Journal of Economic Studies, 9(2), 222-229*. DOI: https://doi.org/10.30525/2256-0742/2023-9-2-222-229

⁸ Зеленський, В. (2022). Як відбудувати Україну після війни. *Ukraïner* <https://ukrainer.net/vidbudova/> (2023, September, 16).

of limited resources and significant losses. The stages of Ukraine's economic reconstruction after the wartime events can be divided into two phases: before the conclusion of military operations and after their conclusion.

The first phase preceding the conclusion of the war includes the following steps:

- relocating businesses to ensure their operation in safer regions;
- documenting and categorizing losses in a registry;
- developing a recovery plan based on categorized data.

After the conclusion of military operations, the following processes are expected to take place:

- Rebuilding Critical Infrastructure. This includes the restoration of crucial infrastructure elements such as electrical grids, roads, railways, gas supply, water supply, internet connectivity, hospitals, schools, and temporary housing for those who have lost their property. This reconstruction effort may rely significantly on substantial international humanitarian assistance.
- Economic Recovery. The broader economic recovery involves utilizing Industry 4.0 principles to modernize the industrial sector, creating new job opportunities, establishing sustainable sources of income, continuing reforms, and harmonizing legislation with European standards. This harmonization might encompass certification systems, anti-oligarch laws, reforming the law enforcement sector, implementing anti-corruption policies, ensuring transparency in public procurement, and modernizing or privatizing industrial enterprises.
- Achieving Sustainable Economic Growth. This entails developing support and entrepreneurship programs using stimulating regulatory and tax policies. It also involves implementing a balanced financial policy, strengthening the energy sector, and adopting the concept of nearshoring to transform Ukraine into a mega-industrial hub for Europe. Effective management of regional energy resources and the development of energy infrastructure are also important components of this phase.

These processes are essential for stabilizing the Ukrainian economy, rebuilding the country, and fostering sustainable growth in the post-war period.

Post-war economic recovery in Ukraine will require the application of the following aspects of experience from global state-building in crisis conditions:

- systematic reforms: implementing systematic reforms to ensure a comprehensive and sequential approach;
- sustainable funding Sources: ensuring sustainable sources of funding that will support recovery in the long term;
- thoroughness of the process: the depth of the process, involving careful and comprehensive examination of all reform aspects.

It is evident that to implement such significant changes, financial and institutional issues related to resource allocation and proper coordination mechanisms for Ukraine's economic recovery arise.

For the post-war economic recovery of Ukraine, the following potential resource sources are being considered:

- Utilization of special accounts. These could be accounts held in international financial institutions or funds that have already been partially used for financing.
- Potential compensation for losses. Compensation or reimbursement for losses resulting from aggression may become possible once peaceful conditions are established.
- Asset confiscation abroad. There is the possibility of confiscating Russian assets abroad, including banks and financial institutions in other countries. However, this procedure involves a significant amount of bureaucracy and time.
- Real assets confiscation in Ukraine. Confiscation of Russian assets within Ukraine is also a real resource source, although the volumes may be insufficient to compensate for significant losses.

According to all the provided options, only the first one appears to have real potential for implementation. Regarding the stance of the European Union and the United States towards Ukraine's future, there are strong reasons to believe that these partners will support Ukraine's aspiration to create a strong, democratic, and industrially developed country with a diverse and competitive economy capable of generating a significant amount of products and services in the market and ensuring a high standard of living for its citizens. Ukrainians bear a heavy responsibility for defending not only their state and its independence but also the ideals and freedom of all of Europe. The situation itself actively reinforces this position, reminding the EU of "what it was created for" as R. Bregman notes. Ukraine's application for EU

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¹ Bregman, R. (2022). Why Europe Needs Ukraine. *The Atlantic*

https://www.theatlantic.com/ideas/archive/2022/04/why-europe-needs-ukraine/629476/ (2023, September, 16).

membership and the positive response to this initiative from the European Commission and the European Parliament demonstrate the EU's interest in Ukraine's future success. It is evident that the European Union needs a stable and prosperous Ukraine that contributes to development and progress in Europe, rather than being a source of instability.

Therefore, the effective reconstruction of the Ukrainian economy relies heavily on significant support from the European Union and the United States, as well as the careful and efficient utilization of the provided assistance. The EU and its member states have demonstrated political will and commitment to assisting Ukraine in its recovery after the conflict. Priority funding earmarked for Ukraine should constitute a substantial portion (90%) of international financial aid. These funds should be directed toward the construction of new large industrial enterprises, the reconstruction of affected businesses based on new technological and digital principles, infrastructure restoration, and housing renewal. It is crucial to establish a financing scheme now that will help ensure stable post-war economic growth for Ukraine.

To ensure transparency and effective use of foreign funds, Ukraine must establish a clear mechanism for monitoring their expenditures. It is crucial to maintain a high level of trust between Ukraine and the EU, avoiding corruption and inefficient resource utilization. The future of Ukraine, including its prospects for joining the European Union and continued dialogue with European partners, depends on this.

Given Ukraine's unique geopolitical, economic, and social circumstances and its significant role in global markets such as food production, energy, metallurgy, and more, it's essential to highlight that Ukraine should actively participate in the preparation and implementation of international initiatives for economic recovery. Ukraine should put forward its constructive approaches to further development, taking into account both global experience and potential risks.

Regarding the institutional implementation of the strategy for Ukraine's economic recovery after the war, it envisions the creation of two key bodies: the National Council for Ukraine's Recovery from the Consequences of War and the International Agency for Ukraine's Recovery. The latter is being compared to the Economic Cooperation Administration (ECA), which facilitated the implementation of the Marshall Plan for Europe. It is anticipated that this agency will be affiliated with the European Union while maintaining autonomy in decision-making processes. Additionally, it will be granted advisory and consultative status and is planned to collaborate with the National Council for Ukraine's Recovery.

Ukraine has its own vision of a comprehensive post-war economic recovery plan aimed at new technological principles and long-term prosperity. This plan is analogous to the "Marshall Plan" and should include specific stages and actions. The implementation of such a plan requires an organizational structure that ensures the broad participation of European and international institutions, companies, and organizations in solving complex tasks of structural transformation at the national, regional, and local levels. To develop the concept of the plan and its fundamental principles, similar to post-war France, the best and most qualified experts are needed – scientists, entrepreneurs, industrialists, educators, representatives of innovative structures, civil organizations, and government authorities that enjoy public trust on the basis of equality.

The Plan should serve as the basis for the country's national policy and transformation program, and all other strategies and documents should be aligned with the Plan and focused on its implementation. The Plan should provide a comprehensive vision of the post-war situation in the country, identify top-priority tasks, highlight priority types of activities or groups of activities capable of reviving the economy and ensuring sustainable long-term economic growth. Following the example of France, specific modernization programs with task details for specific projects should be developed for each of these areas of activity. A National Reconstruction and Development Fund should be established to finance projects within these programs.

Therefore, the main objectives of the Plan are: creating an environment for the development of competitive industries and harnessing the potential of human capital in the country; modernizing state assets for their integration into European production chains; creating conditions to attract private investments in the development of high-tech manufacturing in Ukraine.

Within the aforementioned Plan, the following development directions are envisaged:

• expansion of high-tech industries, including integrating Ukrainian manufacturing capacities into EU production chains after their modernization and embedding high-tech production;

¹DeLong, J.B., Eichengreen B. (1991). The Marshall Plan: History's Most Successful Structural Adjustment Program. *NBER Working Paper*, *3899* https://papers.srn.com/sol3/papers.cfm?abstract_id=226738 (2023, September, 16).

- collaboration in sectors like aviation (joint production of heavy transport aircraft), space (production of artificial satellites and rockets), and defense industry (joint production of military equipment following NATO standards);
- establishing a complete production cycle in nuclear energy and the development of other high-tech clusters in collaboration with foreign partners;
- modernizing the energy sector at municipal and national levels, including municipal energy and the use of non-traditional fuels:
- infrastructure renewal at central, regional, and local levels, including mobilizing financial resources for the restoration of transportation and energy infrastructure;
- developing the agro-industrial complex through the transfer of land masses to European agrarian companies and attracting targeted funding to improve product quality and expand production;
- implementing cooperation between Ukrainian higher education institutions and European educational and research institutions to develop human capital;
- creating a model of public-private partnership for the development of the energy and infrastructure projects, as well as issuing targeted bonds to enhance the quality of agricultural products and introduce necessary equipment.

The mentioned directions play a crucial role in the economic integration of Ukraine into the EU and will contribute to the economic recovery, growth, and maintenance of the country's sovereignty.

The main directions for the economic recovery of Ukraine, taking into account international experience, include:

- ensuring a secure base;
- implementing humanitarian aid and social support programs;
- carrying out macroeconomic stabilization;
- renewing and rebuilding infrastructure;
- implementing decarbonization and a "green transition" program to achieve energy independence;
- integration into global value chains and the creation of a free trade zone;
- carrying out processes of nationalization, modernization, and privatization.

The post-war recovery is based on a *security foundation*, which involves the integration of regional civil management agencies, key infrastructure facilities (such as airports, railways), and military structures (including military centers and bases). This type of integration will enhance investment attractiveness by confirming the reliability of this security foundation.

It is necessary to consider the inclusion of regulatory proposals aimed at providing a basic income for the most vulnerable populations and internally displaced persons as part of *humanitarian and social support programs*. This can contribute to the return of labor resources from abroad and prevent migration.

Taking into account *macrofinancial stability*, it can be noted that the prudent reduction in imports during the initial months of the war contributed to some stability of the hryvnia and prevented sharp exchange rate fluctuations. However, in the future, there will be a need for a currency exchange rate regime that involves liberalization. Additionally, addressing problem loans through approaches similar to Japan's practice, such as the government buying problem loans from banks and their financial recovery, is anticipated.

The renewing and rebuilding of infrastructure involve several key aspects. Firstly, it will be necessary to build settlements from scratch. Importantly, this process should involve qualitative transformation rather than mechanical replication of the past. Secondly, infrastructure reconstruction should be based on modern principles, including those focused on energy efficiency and transitioning to a "green" approach. This procedure can play a significant role in creating new employment opportunities.

The program of decarbonization, the implementation of the "green transition", and achieving energy independence have the following key components: promoting the development of "green" energy and renewable energy production; encouraging energy producers at all levels to generate surplus energy that can be sold on the wholesale market; implementing the principles to actively support small projects aimed at improving the energy efficiency of specific entities, such as businesses and households; institutional support for the "green transition" through the establishment of a Decarbonization Agency ("green transition") with broad powers in the field of communication and the ability to influence carbon emissions reduction in all relevant sectors.

Integration into global value chains and the creation of a free trade zone are important aspects. The key goal is to create mechanisms for investors that promote maximum development, including compensatory measures to balance potential losses or connection to engineering networks. Development priorities include manufacturing and the creation of industrial parks.

The adoption of the "Nationalization-Modernization-Privatization" strategy involves a sequential approach to industrial assets in key sectors of the economy. This includes nationalizing enterprises in important industries, then modernizing them and providing investment incentives to attract foreign funds, and finally, privatizing industrial assets.

Currently, Ukraine cannot settle for achieving a modest level of socio-economic development that does not match its potential. Therefore, the task of post-war Ukraine's recovery should be focused on radical transformation of the economic structure, shifting from an agrarian-raw materials approach to an industrial-innovative one, based on the creation of a modern high-tech and digital industry in the context of implementing the Industry 4.0 concept. It is important to note that Ukraine should take the initiative in this direction if it aims to avoid the burden of being merely an agrarian country with a monotonous existence.

Innovative activity becomes a source of stimulating socio-economic growth and consistent improvement in the standard and quality of living for the population. Advanced technologies and structural transformations can help Ukraine rebuild its industrial sector and ensure a sustainable and robust economic dynamic. It is important to support innovation and the development of new technologies as key factors that will contribute to the recovery and strengthening of the state after Russian aggression.

Indeed, increasing the innovativeness and competitiveness of the national economy is a complex and lengthy process, especially in the face of new historical realities and a combination of challenges. To effectively manage innovation development, it is necessary to consider new approaches that take into account diverse requirements and conditions. One of the interesting approaches to innovation management is the "Quadruple Helix Model" (Leydesdorff, 2012), which is actively used in the European Union. According to this model, businesses, researchers, government institutions, and consumers collaborate with the aim of promoting innovation development. However, a distinctive feature of this model is the active role of citizens and civil society. It signifies that citizens, users, residents, organizations, and other entities can be consumers and co-creators of innovations, contributing to their development. This allows for greater attention to be paid to their needs and preferences, ensuring more qualitative and relevant innovations.

Such an approach can be particularly beneficial for Ukraine by helping to engage a wide range of citizens and civil organizations in the innovation process, increasing their participation in the formation and implementation of innovative projects, and ensuring a better consideration of the real needs and demands of society. However, it will require efforts to create a favorable environment for active citizen participation in the innovation development process and to support collaboration among various entities and stakeholders within the Quadruple Helix Model framework.

To achieve economic recovery, urgent measures are needed. It is important to implement a pragmatic economic policy aimed at sustainable social development based on the rule of law and social justice. Effective state economic policy should focus on identifying key market shortcomings and promoting balanced development across various sectors.

Further development of local self-government and the expansion of territorial communities' powers are key components for ensuring security, stimulating economic growth, and ensuring social stability in Ukraine. At the regional and community levels, there are ample opportunities to support entrepreneurship and attract investments: simplified conditions for starting business initiatives, effective interaction, and establishing partnerships with investors, implementing pilot projects, and more.

Conclusions. The task of Ukraine's revival, including its economy, industrial and social infrastructure, and human potential development, goes far beyond simple restoration work on damaged residential buildings, roads, production facilities, and scientific-educational facilities in areas affected by armed conflicts. The main goal of state development strategies should be the establish a viable economic system that provides resources for recovery and long-term development. Ukraine should actively participate in the preparation and implementation of international initiatives for economic recovery, offering its own vision of development considering international experience and domestic risks.

The primary focus should be on transforming Ukraine from an economy based on raw materials to an innovative, production-oriented, and energy-independent one. Key aspects include innovation development, favorable tax policies, the growth of high-tech industries, and investment in human capital to ensure stable development in the future.

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¹ Leydesdorff, L. (2012). The Triple Helix, Quadruple Helix, ..., and an N-Tuple of Helices: Explanatory models for analyzing the Knowledge-based economy. *Journal of the Knowledge Economy*, *3* (1), 25-35.

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