



CHARTING PATHS FOR SOCIO-ECONOMIC REVIVAL IN THE WAKE OF MILITARY TURMOIL

Kovalenko, D.¹, Tarasov, S.², Strunhar, A.³, Boltianska, L.⁴, and Antonenko, K.⁵

¹*Department of Finance and Business Consulting, Faculty of Management and Business Design, Kyiv National University of Technologies and Design, Kyiv, Ukraine.*

²*Interregional Academy of Personnel Management, Kyiv, Ukraine.*

³*Department of Library Science and Information Communications, National Academy of Leadership in Culture and Arts, Kyiv, Ukraine.*

⁴*Department of Economics and Business, Faculty of Economics and Business, Dmytro Motornyi Tavria State Agrotechnological University, Zaporizhzhia, Ukraine.*

⁵*Department of Air Transport Economics, Department of Air Transport Economics, Faculty of Economics and Business Administration, National Aviation University, Kyiv, Ukraine.*

¹*kdi75@ukr.net*

²*shteam17@gmail.com*

³*a19870208@gmail.com*

⁴*larisabolt75@gmail.com*

⁵*ipkatya@ukr.net*

ABSTRACT

Purpose: The study aims to study socio-economic challenges and identify potential ways to restore the economy damaged by the war.

Design/Methodology/Approach: This study employed a mixed-methods quantitative and qualitative approach. The quantitative data were obtained from publicly available national and international databases, including the World Bank, International Monetary Fund (IMF), Ukrainian State Statistics Service, and Reports from NGOs and humanitarian agencies. The study combined statistical and content analysis to assess Ukraine's socio-economic challenges due to the military conflict.

Research Limitation: The military conflict is ongoing, and socio-economic challenges are continually evolving. Data collected at a certain time may not fully capture the long-term impacts or future developments.

Social Implication: The article examines the need to integrate innovative approaches into the recovery process by implementing long-term strategies that create conditions for attracting international investments.

Practical Implication: The study's results emphasise the importance of the participation of international cooperation, the effective use of investments and the development of human capital to achieve sustainable economic growth.

Originality/Value: Military conflicts leave deep crises in the structure of national economies, causing significant damage to infrastructure and human capital and creating severe socio-economic challenges. The research problem is to identify the economic recovery mechanism after the end of military operations in Ukraine.

Keywords: *Economic recovery. human capital. infrastructure. innovation. military conflict*



INTRODUCTION

The beginning of the war in Ukraine caused several severe socio-economic and environmental problems, among which the destruction of the energy infrastructure, mass migration of the population and environmental disasters occupy a special place. Damage to the energy facilities of thermal power plants, nuclear power plants and energy transportation systems led to significant interruptions in energy supply. The 50% reduction in the power system of Ukraine affected all aspects of society and the work of industrial enterprises (Yang et al., 2020).

The mass exodus of the population from the devastated regions has caused demographic changes that will have long-term consequences for the country's economic recovery. The ecological consequences of the war, such as soil and water pollution, the destruction of the Kakhovskaya HPP from explosions and spills of oil products, and the loss of biodiversity due to the destruction of natural habitats, require immediate measures for minimisation and restoration (Rawtani et al., 2022).

The difficulty of calculating accurate statistics of damage caused by the war is due to the chaotic nature of the hostilities and the impossibility of access to many affected regions. Shifting front lines, breakdown of communications and lack of reliable information make it challenging to collect data and analyse the economic and social consequences of the conflict. Adding to the complexity is the threat of the current conflict turning into a long-term war, which could further damage and complicate the recovery planning process. The relevant factors require the flexibility of European countries regarding the reconstruction of Ukraine from all interested parties, which must consider the possibility of a prolonged military conflict.

The participation of international organisations and communities plays a key role in the recovery of Ukraine. The efforts of the UN, the European Union, the World Bank, and charitable foundations aim to provide financial, technical, and humanitarian support. The development of joint recovery programs includes the reconstruction of physical infrastructure and the restoration of social services, support of small and medium-sized enterprises, and the creation of human capital development programs. Finding an optimal fiscal system for long-term economic growth in the conditions of war is an essential step towards restoring stability and ensuring the basis of the functioning of the economy. The active participation of the public and local communities in the recovery process is a primary factor in ensuring security, levelling the consequences of military operations, and increasing the socio-economic support of the population through the increase in the effectiveness of recovery work.

The purpose of the article's research is to assess the socio-economic challenges that Ukraine faced due to the military conflict and to identify opportunities for the recovery and development of its economy in the post-war period. The research problem is based on the statistical measurement of the negative impact of military actions on the country's economic stability in terms of infrastructure, human capital, and domestic and foreign trade. The main task of the study is to identify strategies that will ensure sustainable recovery of the economy, including international support and the development of human capital development programs. An important research direction is the analysis of statistical estimates regarding the need to restore the Ukrainian economy, which suffered from the war. The practical value of the study is

ISSN : 2408-7920



revealed in forming a set of recommendations for Ukraine aimed at boosting economic growth based on the assessments and their systematisation. It effectively attracts investments and rebuilds the social sphere through productive partnerships with the international community.

LITERATURE REVIEW

The issue of economic recovery after the end of the military conflict in Ukraine is highlighted in the literature by various approaches to restructuring the public debt and creating recovery programs and strategies. Chyrkova and Yankovska (2021) examine the impact of war on the economic structure of countries, where losses to industry, the agricultural sector, and services are analysed. Batyr et al. (2023) describe the consequences for the labour market and the significant migration of human capital. Dunkley (2023) examines the issues of energy security and environmental impacts caused by the large-scale destruction of the infrastructure that ensured the region's economic stability. The problem of damage calculation is highlighted by Gura and Berdanova (2022), where it is noted that in the conditions of chaotic warfare, the problem of recording war crimes plays a role. Al Momani et al. (2023) note great difficulties in collecting reliable data due to constant changes in the front lines and the destruction of communications.

Salsabila and Muttaqin (2023) raise the issue of the potential threat of turning the conflict into a long-term war, which requires analysts to develop flexible methods for assessing economic and social consequences. Heisbourg (2023) contributes to understanding the global challenges facing the international community in connection with the conduct of proxy wars. Lin et al. (2023) develop universal deterrence mechanisms and build global security. According to Yakoviyk and Turenko (2023), the participation of international organisations in the recovery process is always a structural element of long-term credit policy. Trush (2022) examines recovery programs launched by the UN and the World Bank that have been integrated into countries that have experienced complex military conflicts.

Zolkover et al. (2022) examine the contribution of non-profit organisations to the recovery of small communities, emphasising the importance of localised initiatives and the participation of local communities in decision-making processes. Kornievskyy (2023) emphasises the importance of international cooperation in creating inclusive recovery programs considering the country's socio-economic challenges in the post-war period. Papanichael et al. (2023) describe the role of international cooperation in the exchange of information between government structures of different countries to combat cross-border cyber threats effectively. Hnedina and Nahorny (2022) analyse aspects of coordination of international efforts to restore the economy after military conflicts in the countries of the East. Bezverkhyi et al. (2019) on economic recovery form an idea about effective monetary and fiscal policy. Baragaño et al. (2023) examine global economic support and investment in the reconstruction of affected regions, emphasising the importance of international donor conferences and financing from world banking institutions. Smagol and Gavris (2016) analyse methodologies for estimating economic losses from military conflicts and strategies for their minimisation.

Zhuravka et al. (2023) indicate the inflation problem and its containment in the economic transition to a military format. Xames et al. (2023), the volatility of military conflicts
ISSN : 2408-7920



significantly shakes the stability of the world economy. Tsyhura (2022) believes in using innovative technologies for effective monitoring and restoration. Rishnyak (2020) attests to the significant contribution of international organisations and communities to recovering economies damaged by military conflicts. Sari et al. (2023) highlight the European Union's initiatives to support developing countries in rebuilding their economies through grants, loans and technical assistance programmes. Zakharchenko (2022) mentions the contribution of non-governmental organisations in providing necessary humanitarian aid and infrastructure reconstruction. Wang et al. (2023) detail successful recovery projects in countries that have experienced natural disasters, which can serve as models for countries in a state of war. Thus, scientists have a common point of view regarding the desire to restore the economy after military conflicts. However, the mechanisms of its achievement require additional research, especially in terms of innovative approaches.

MATERIALS AND METHODS

This study employed a mixed-methods approach combining statistical and content analysis to assess Ukraine's socio-economic challenges due to the military conflict. The quantitative data were obtained from publicly available national and international databases, including the World Bank, International Monetary Fund (IMF), Ukrainian State Statistics Service and Reports from NGOs and humanitarian agencies (e.g., UNHCR, World Food Programme). The methodology is divided into two main parts: quantitative analysis of socio-economic data and qualitative content analysis of relevant reports and publications. Descriptive statistics were used to summarise the data and illustrate trends over time. Inferential statistical methods, such as regression analysis, were employed to examine the relationship between the conflict and various socio-economic indicators. Time series analysis was applied to assess the short-term and long-term effects of the conflict on Ukraine's economy. Content analysis was used where documents were purposively selected based on their relevance to the topic. Reports and articles that specifically address the socio-economic impacts of the conflict, such as those focused on economic dislocation, employment, poverty, and displacement, were prioritised. Categories such as "displacement," "economic hardship," "infrastructure damage," and "humanitarian aid" were developed based on initial readings of the texts.

FINDINGS AND DISCUSSION

The full-scale war in Ukraine, which began in 2022, led to significant humanitarian, social and economic challenges for Ukraine itself and the entire international community. The humanitarian crisis caused by the war has forced millions of people to flee their homes in search of safety, creating one of the biggest migration crises in Europe since World War II. Ongoing hostilities have led to the destruction of 40% of infrastructure, including residential buildings, schools, hospitals and energy facilities. Damage to critical infrastructure facilities made providing humanitarian aid and support to the civilian population complex. The economic effects of war are felt through inflation and currency devaluation, as rising prices and disruptions in supply chains affect the economy. In the international space, the risks for global food security are growing, especially in countries that depend on grain supplies from Ukraine. Hundreds of cultural and historical monuments in Ukraine suffered significant damage and a loss of their heritage.

ISSN : 2408-7920

Copyright © African Journal of Applied Research
Arca Academic Publisher



Damages from military operations in Ukraine, according to estimates of international institutions, exceeded 155 billion dollars, which emphasises the scale of destruction and the enormous financial costs of restoring the country. The available amount covers direct damage to buildings and infrastructure, lost opportunities for economic growth, increased defence spending and negative impact on the country's investment climate. The substantial economic losses due to a 50% reduction in GDP are affecting Ukraine's ability to provide essential social services to its population, including education, health and social protection, and the risk of poverty and social exclusion for millions of people is increasing. International aid and loans play a critical role in meeting urgent needs. Achieving long-term recovery will require significantly more effort and resources. The principal damages are depicted in Figure 1.

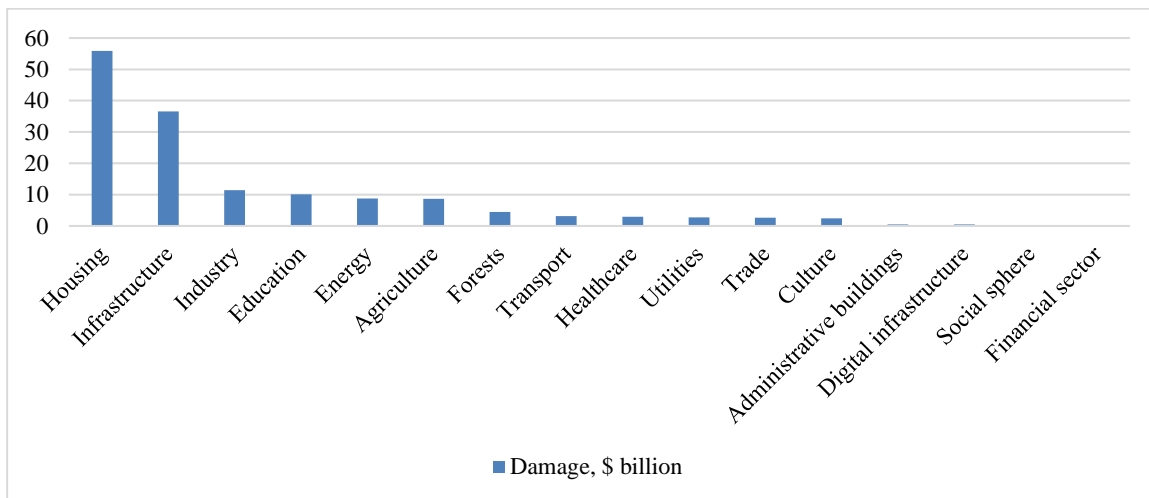


Figure 1: Total estimate of infrastructure damage by industry in monetary terms as of September 1st, 2023

Source: Compiled based on KSE

The enormous impact of the war has triggered a migration crisis, measured by the millions of people who have been forced to flee their homes in search of safety and a better life. According to the United Nations High Commissioner for Refugees, more than five million Ukrainians have become refugees, which is one of the most significant population movements in Eastern Europe. Poland, Hungary, Slovakia and Romania have taken in large numbers of refugees, sheltering them, health care and education. However, refugees' challenges remain significant, including the need for integration, employment and overcoming the language barrier. The international community has stepped up its efforts to provide support at the level of governments and non-profit organisations to ease the burden of the humanitarian crisis.

The war in Ukraine has resulted in a massive number of civilian casualties of over 30,000, according to the UN, with numerous cases of injury, death and general physical and psychological suffering. Residents of the conflict zone experience constant fear for their lives and health. Ukraine's social policy is financed from 2024 mainly with the support of Europe and the IMF since children and the elderly are the most vulnerable in a situation of prolonged



war. Many civilians need urgent medical care due to injuries or illnesses, the treatment of which is complex due to the destruction of hospitals and pharmacies. The psychological trauma caused by the loss of loved ones, constant shelling and having to live in a war environment is a large-scale problem that requires extensive support and interventions from mental health professionals. Statistical indicators of war victims are shown in Figure 2.

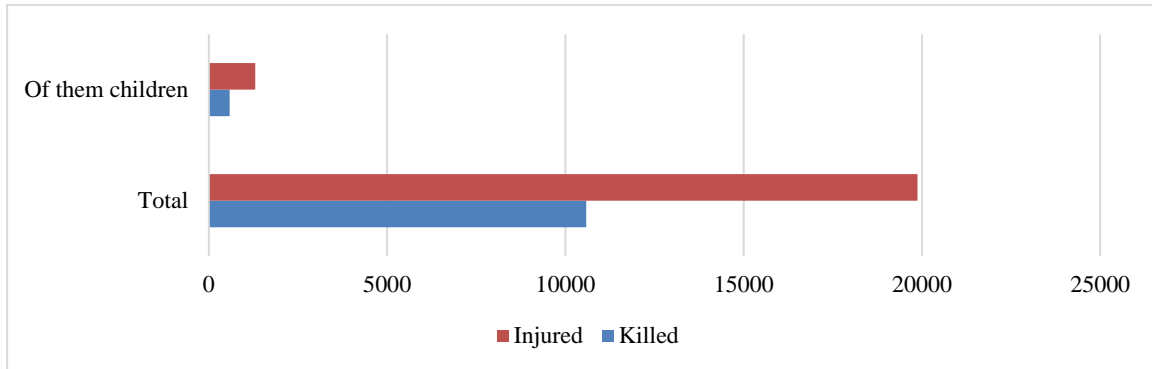


Figure 2: Number of civilian casualties in Ukraine during Russia's invasion verified by OHCHR from February 24, 2022, to February 15, 2024

Source: compiled based on Statista

The formation of the international coalition for the reconstruction of Ukraine began as one of the responses to the large-scale destruction caused by the war. The developed world, international financial institutions, non-profit organisations, and the private sector have joined forces to create a strategic action plan through recovery programs. These include financial assistance, technical expertise and resources to support infrastructure recovery, social services and the economy. Efforts aim to restore damaged buildings, schools, hospitals and other facilities to strengthen democracy, the rule of law and economic growth. An essential role in this process is the functioning of international donor conferences at which funds are collected, and actions are coordinated to distribute resources. The long-term goal of the coalition is to create a stable and prosperous Ukraine that can face future challenges and restore its role on the international stage. The forecasted needs for recovery of the economy of Ukraine are divided into a short-term and a long-term strategy, as depicted in Figure 3.

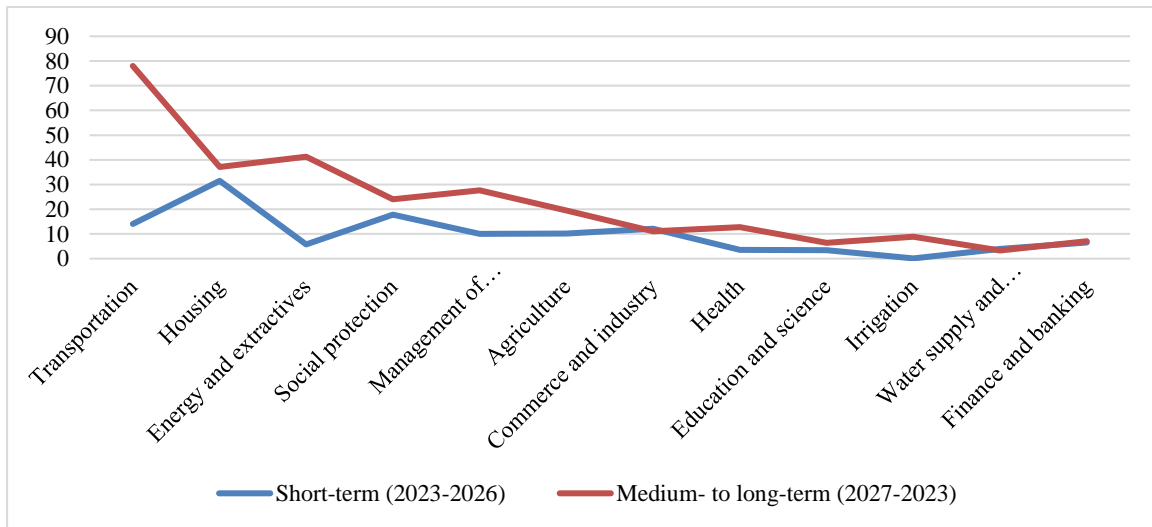


Figure 3: Total estimated recovery and reconstruction needs of Ukraine from 2023 to 2033, by sector and term (in billion US dollars)

Source: compiled based on Statista

The need for quality recovery programs for Ukraine is critical to ensuring economic stability. Relevant programs cover the physical restoration of destroyed infrastructure and the support of the national currency. In addition to the economic sector, the issue of social protection and psychological assistance to war victims will intensify. Effective recovery requires global support and solidarity in protecting veterans' rights. Investments and technical assistance based on the example of South Korea will be helpful experiences in the field of the country's economic potential in the post-war period. Currently, the focus of efforts on sustainability and inclusive economy is possible under the international programs depicted in Table 1.



Table 1: Programmes to support and restore Ukraine after the end of the war

Name of the programme	Support	Donors
Ukraine Recovery Conference (URC)	An international conference aimed at coordinating international efforts to restore Ukraine, including developing long-term reconstruction plans.	The European Union, the governments of the member countries, the Government of Ukraine
Recovery and Peacebuilding Assessment (RPBA)	A joint program of the United Nations, the World Bank and the European Union aimed at assessing Ukraine's needs for reconstruction and peacebuilding.	UN, World Bank, European Union
Ukraine Relief Fund	A support fund was created to provide humanitarian aid and finance recovery initiatives in Ukraine, including infrastructure recovery.	Various international NGOs and private donors
Stand Up For Ukraine	A global campaign to raise funds to support Ukrainians affected by the war, in particular through the reconstruction of destroyed homes and the provision of humanitarian aid.	Global Community, Private Donors
Ukraine Humanitarian Fund	A specialised UN fund aimed at providing emergency humanitarian aid and supporting recovery measures in Ukraine.	United Nations
European Union Support	Recovery funding, technical assistance, and social protection assistance are among the wide range of support programs offered by the European Union.	European Union

Source: developed by the authors

The creation of Ukraine's recovery programs involved international governments, financial institutions and non-profit organisations in a joint effort to rehabilitate the country after the devastation caused by the war. For example, the European Union's "Support to Ukraine's Reconstruction and Recovery" program allocates 1 billion euros to restore critical infrastructure and support reforms. The World Bank launched the "Ukraine Recovery and Reconstruction Program" project, allocating 500 million dollars to support small and medium-sized enterprises and restore educational institutions. They envisage the gradual reconstruction of destroyed buildings and strategic planning for long-term development, including reforming the tax system, improving the investment climate and strengthening democratic institutions.

In the energy field, great attention is paid to the restoration and modernisation of Ukraine's energy infrastructure and the transition to renewable energy sources. The EU4Energy program of the European Union is focused on supporting Ukraine in implementing energy reforms and increasing the share of renewable energy in the country's energy balance. The United States, through the USAID International Development Agency, assists in modernising power grids, introducing "green" energy, and improving energy security. The initiatives allow Ukraine to reduce dependence on imported energy resources, improve energy efficiency and ensure sustainable energy supply for the population and industry. As for social assistance, international



and domestic programs play a significant role in supporting the population of Ukraine. The "Cash and Voucher Assistance" project from the International Red Cross provides vulnerable segments of the population with cash assistance to meet basic needs. The humanitarian initiative "Emergency Support to Food Security and Livelihoods in Ukraine" from the Food and Agricultural Organization aims to support farmers and ensure food security.

Regarding internal migration, the Ukrainian government makes significant efforts through social protection programs for internally displaced persons, providing them housing, medical care, and access to education. Therefore, the programs demonstrate a comprehensive approach to solving social problems caused by the war and aim to minimise the negative consequences for the population, maintain stability, and restore social infrastructure.

Discussion

While conducting the research, it was found that large-scale international cooperation and financial support are critically important for the economic recovery of countries affected by military conflicts. The results are consistent with the findings of Chowdhury et al. (2023), emphasising the importance of international donor programs. The results confirm Shylepnytskyi and Petrova's (2022) findings about the effectiveness of investments in infrastructure restoration and human capital development, pointing to the need for careful study of the long-term consequences of migration.

Unlike Ersahin et al. (2023), who emphasise the challenges of data collection, it is found that using innovative satellite imagery technologies will contribute to the accuracy of damage assessments. The difference between the results and the findings of Gao (2023) emphasises the importance of localised initiatives and community participation in recovery projects and the impact of international aid on socio-economic recovery. Hypothesis Redzyuk (2022) talks about the importance of long-term investments in the recovery process, finding that technological development can significantly increase the effectiveness of reconstruction. The obtained results expand the understanding of the role of cooperation according to Soo et al. (2023), which states that international cooperation in the field of technology exchange will contribute to faster recovery.

According to Kathi et al. (2023), the study highlights the potential of international financial institutions in mobilising resources for recovery. The paper's findings note the critical role of local communities in recovery processes, which complements the findings of Romanadze (2022) about the need to involve local initiatives. Compared to the work of Dyomin and Ivashko (2020), which examined economic losses due to military conflicts with a particular focus on domestic recovery, the study broadens the scope of analysis to include the importance of international cooperation and the contribution of global investment to recovery processes. Roik (2023) focuses on strategies for increasing education and skills in a post-conflict reconstruction environment. Thus, further research should evaluate the effectiveness of international aid programs, the impact of innovation on economic recovery, and strategies for attracting investment in critical sectors of the economy to ensure the recovery and development of affected countries.

ISSN : 2408-7920

Copyright © African Journal of Applied Research
Arca Academic Publisher



CONCLUSION

Thus, the study of socio-economic challenges in Ukraine after the end of the military conflict covers a wide range of aspects, including the analysis of infrastructure damage, the impact on human capital, and obstacles to economic recovery. The study found significant infrastructure and economic losses of over \$150 billion. The analysis of the impact of the conflict on the labour market, population migration and social parameters highlighted the depth of the socio-economic problems the country is facing. The study identified potential opportunities for economic recovery through the modernisation of the economy, the development of renewable energy sources, and the improvement of the climate of investment.

The problems and global challenges facing Ukraine's economy after the end of the military conflict are multifaceted and require a global approach to their solution. Significant damage to infrastructure and the economy, loss of human capital due to migration and death of the population, and destruction of the social sphere - all existing factors complicate the recovery process. Global challenges in the form of instability of the global energy and oil markets and technological shifts add additional complexity to the reconstruction and adaptation of the economies of European countries to new realities. Solving economic problems requires attracting significant financial resources from European institutions to carry out structural reforms in all spheres of economic and social life.

The necessary measures to restore the economy and overcome socio-economic challenges include strategic planning emphasising sustainable development. Investments in infrastructure modernisation, fiscal policy development, and innovation support are part of the discourse of financial donors. An important aspect is the restoration and development of the domestic market, which has high quotas on the European market. Ensuring a favourable investment climate and intensifying international cooperation will help Ukraine to establish mineral production. The government must focus on developing and implementing social support programs for vulnerable populations, ensuring access to education and health services. Economic recovery after a military conflict is a complex and long-term process that requires openness to innovation and readiness to cooperate with international partners.

REFERENCES

- Al Momani, D. E., Al Ansari, Z., Ouda, M., Abujayyab, M., Kareem, M., Agbaje, T., & Sizirici, B. (2023, October 1). *Occurrence, treatment, and potential recovery of rare earth elements from wastewater in the context of a circular economy*. *Journal of Water Process Engineering*. Elsevier Ltd. <https://doi.org/10.1016/j.jwpe.2023.104223>
- Alekseieva, K., Maletych, M., Ptashchenko, O., Baranova, O., & Buryk, Z. (2023). *State business support programs in wartime conditions*. *Economic Affairs (New Delhi)*, 68(1), 231-242. <https://doi.org/10.46852/0424-2513.1s.2023.26>
- Baragaño, D., Berrezueta, E., Komárek, M., & Menéndez Aguado, JM (2023). *Magnetic separation for arsenic and metal recovery from polluted sediments within a circular economy*. *Journal of Environmental Management*, 339. <https://doi.org/10.1016/j.jenvman.2023.117884>
- Batyr, Y., Pomaza-Ponomarenko, A., & Lopatchenko, I. (2023). *After War Reconstruction of*



- Ukraine: Economic Aspect*. Public Administration and State Security Aspects, (Vol.1/2023). <https://doi.org/10.52363/passa-2023.1-6>
- Bezverkhyi, K., Kovach, S., & Zolkover, A. (2019). *Integrated reporting: Econometric model of quality assessment*. *Ikonomicheski Izsledvania*, pp 120–133
- Chowdhury, P. R., Medhi, H., Bhattacharyya, K. G., & Hussain, C. M. (2023, December 1). *Severe deterioration in food-energy-ecosystem nexus due to ongoing Russia-Ukraine war: A critical review*. *Science of the Total Environment*. Elsevier BV <https://doi.org/10.1016/j.scitotenv.2023.166131>
- Chyrkova, N., & Yankovska, D. (2021). *The Ethics of Conserving Modern Art*. *Baltic Journal of Art History*, 21, 93–102. <https://doi.org/10.12697/BJAH.2021.21.05>
- Dunkley, M. (2023). *Monumental Decisions: The Impact of the Russo-Ukrainian War on Soviet War Memorials*. *Historic Environment: Policy and Practice*, 14(2), 227–235. <https://doi.org/10.1080/17567505.2023.2207165>
- Dyomin, M., & Ivashko, Y. (2020). *Research, preservation and restoration of wooden churches in Ukraine*. *Wiadomosci Konserwatorskie*, 2020(61), 85–90. <https://doi.org/10.48234/WK61UKRAINE>
- Ersahin, M. E., Cicekalan, B., Cengiz, A. I., Zhang, X., & Ozgun, H. (2023, June 1). *Nutrient recovery from municipal solid waste leachate in the scope of circular economy: Recent developments and future perspectives*. *Journal of Environmental Management*. Academic Press. <https://doi.org/10.1016/j.jenvman.2023.117518>
- Gao, M. (2023). *Role of financial inclusion and natural resources for green economic recovery in developing economies*. *Resources Policy*, 83. <https://doi.org/10.1016/j.resourpol.2023.103537>
- Gura, V., & Berdanova, O. (2022). *Entrepreneurship restoration and development in Ukraine on the ESG-concept basis*. *Visnyk Taras Shevchenko National University of Kyiv. Military-Special Sciences*, (2(50)), 68–73. <https://doi.org/10.17721/1728-2217.2022.50.68-73>
- Heisbourg, F. (2023). *How to End a War: Some Historical Lessons for Ukraine*. In *Survival: Global Politics and Strategy: Volume 65 Number 4 | August-September 2023* (Vol. 65, pp. 7–24). Taylor and Francis. <https://doi.org/10.1080/00396338.2023.2233347>
- Hnedina, K., & Nahorny, P. (2022). *Threats to Ecological Safety: Realities of Wartime and Economic Stimulation of Post-War Ecological Restoration of Ukraine*. *Problems and Prospects of Economics and Management*, (4(32)), 39–52. [https://doi.org/10.25140/2411-5215-2022-4\(32\)-39-52](https://doi.org/10.25140/2411-5215-2022-4(32)-39-52)
- Kathi, S., Singh, S., Yadav, R., Singh, A.N., & Mahmoud, A.E.D. (2023). *Wastewater and sludge valorisation: a novel approach for treatment and resource recovery to achieve circular economy concept*. *Frontiers in Chemical Engineering*. Frontiers Media SA <https://doi.org/10.3389/fceng.2023.1129783>
- Kornievskyy, O. (2023). *Interaction of Public Associations with Government Bodies Regarding the Educational Training of Specialists in Restoration of Ukraine*. *National Technical University of Ukraine Journal. Political Science. Sociology. Law*, (1(57)), 97–104. [https://doi.org/10.20535/2308-5053.2023.1\(57\).280805](https://doi.org/10.20535/2308-5053.2023.1(57).280805)
- KSE. (2023). The total amount of damage caused to the infrastructure of Ukraine due to the war reaches \$151.2 billion, estimate as of September 1, 2023.



- <https://kse.ua/about-the-school/news/the-total-amount-of-damage-caused-to-the-infrastructure-of-ukraine-due-to-the-war-reaches-151-2-billion-estimate-as-of-September-1-2023/>
- Kulikov, P., Aziukovskyi, O., Vahonova, O., Bondar, O., Akimova, L., & Akimov, O. (2022). *Post-war economy of Ukraine: Innovation and investment development project*. Economic Affairs (New Delhi), 67(5), 943-959. <https://doi.org/10.46852/0424-2513.5.2022.30>
- Kussainov, K., Goncharuk, N., Prokopenko, L., Pershko, L., Vyshnivska, B., & Akimov, O. (2023). *Anti-corruption management mechanisms and the construction of a security landscape in the financial sector of the EU economic system against the background of challenges to European integration: Implications for artificial intelligence technologies*. Economic Affairs (New Delhi), 68(1), 509-521. <https://doi.org/10.46852/0424-2513.1.2023.20>
- Kvasnii, L., Moravska, O., Malyk, L., Shulzhyk, Y., Orlova, O., & Scherban, O. (2023). *Scenarios of the Development of Enterprises of the Tourist Industry of Ukraine in the Conditions of the War and Post-War Period*. Financial and Credit Activity: Problems of Theory and Practice, 2(49), pp. 313-325.
- Lin, M., Zeng, H., Zeng, X., Mohsin, M., & Raza, SM (2023). *Assessing green financing with emission reduction and green economic recovery in emerging economies*. Environmental Science and Pollution Research, 30(14), 39803–39814. <https://doi.org/10.1007/s11356-022-24566-5>
- Lopatynskyi, Y., Belei, S., Kapelista, I., & Pavlyshyn, M. (2023). *The Effectiveness of the Management System in the Conditions of War and its Influence on the Development of Agribusiness*. Review of Economics and Finance, 21, pp. 932-940.
- Nikonenko, U., Shtets, T., Kalinin, A., Dorosh, I., & Sokolik, L. (2022). *Assessing the policy of attracting investments in the main sectors of the economy in the context of introducing aspects of Industry 4.0*. International Journal of Sustainable Development and Planning, 17(2), 497-505. <https://doi.org/10.18280/ijstdp.170214>
- Novak, A., Pravdyvets, O., Chorny, O., Sumbaieva, L., Akimova, L., & Akimov, O. (2022). *Financial and economic security in the field of financial markets at the stage of European integration*. International Journal of Professional Business Review, 7(5) <https://doi.org/10.26668/businessreview/2022.v7i5.e835>
- Papamichael, I., Voukkali, I., Loizia, P., & Zorpas, A.A. (2023). *Construction and demolition waste framework of circular economy: A mini-review*. Waste Management and Research, 41(12), 1728–1740. <https://doi.org/10.1177/0734242X231190804>
- Rawtani, D., Gupta, G., Khatri, N., Rao, P. K., & Hussain, C. M. (2022). Environmental damages due to war in Ukraine: A perspective. *Science of The Total Environment*, 850, 157932.
- Redzyuk, Y. (2022). *Post-war socio-economic restoration of Ukraine: background, opportunities and prospects*. Problems of Innovation and Investment Development, (28). <https://doi.org/10.33813/2224-1213.28.2022.1>
- Rishnyak, O. (2020). *Restoration Activities in Ukraine in the Context of Global Conservation Trends*. ARTISTIC CULTURE. TOPICAL ISSUES, (16(2)), 153–157. [https://doi.org/10.31500/1992-5514.16\(2\).2020.217809](https://doi.org/10.31500/1992-5514.16(2).2020.217809)
- Roik, O. (2023). *The Directions of Sustainable Development of Tourism in Ukraine in the* ISSN : 2408-7920



- Conditions of Post-War Recovery*. Economic Scope. <https://doi.org/10.32782/2224-6282/184-9>
- Romanadze, L. (2022). *Mediation in Post-War Restoration in Ukraine*. Access to Justice in Eastern Europe, 5(Special Issue), 202–217. <https://doi.org/10.33327/AJEE-18-5.4-n000432>
- Salsabila, S., & Muttaqin, M. I. (2023). *Impact of Russia-Ukraine Conflict on Turkey's Economic Stability*. International Journal of Social Service and Research, 3(7), 1642–1652. <https://doi.org/10.46799/ijssr.v3i7.453>
- Sari, S. P., Regita Cahyani Muis, A., Amatillah, M., & Thyra Janitra, N. (2023). *Development of Halal Value Chain as a Manifestation for Economy Recovery in Post Covid-19*. Dauliyah: Journal of Islam and International Affairs, 8(2), 151–163. <https://doi.org/10.21111/dauliyah.v8i2.10523>
- Shylepnytskyi, P., & Petrova, I. (2022). *"Combined" Models of Public-Private Partnership for the Reconstruction of Ukraine*. Economic Herald of the Donbas, (2 (68)), 154–164. [https://doi.org/10.12958/1817-3772-2022-2\(68\)-154-164](https://doi.org/10.12958/1817-3772-2022-2(68)-154-164)
- Smagol, V. M., & Gavris, G. G. (2016, April 1). *The Wisent Bison bonasus (Mammalia, Artiodactyla) Restoration in Ukraine: Results and Perspectives*. Vestnik Zoologii. National Academy of Sciences of Ukraine. <https://doi.org/10.1515/vzoo-2016-0022>
- Soo, A., Wang, L., Wang, C., & Shon, H.K. (2023, May 1). *Machine learning for nutrient recovery in the smart city circular economy – A review*. Process Safety and Environmental Protection. Institution of Chemical Engineers. <https://doi.org/10.1016/j.psep.2023.02.065>
- Statista. (2023). Total estimated recovery and reconstruction needs of Ukraine from 2023 to 2033, by sector and term, in billion US dollars. Economy & Politics › Economy. <https://www.statista.com/statistics/1376987/ukraine-recovery-and-reconstruction-needs/>
- Statista. (2024). Number of civilian casualties in Ukraine during Russia's invasion verified by OHCHR from February 24, 2022 to February 15, 2024. Economy & Politics › Politics & Government. <https://www.statista.com/statistics/1293492/ukraine-war-casualties/>
- Trush, T. (2022). *Christian Geopolitics: His All-Holiness Ecumenical Patriarch Bartholomew and Ukrainian Autocephaly*. Sophia. Human and Religious Studies Bulletin, 19(1), 67–70. <https://doi.org/10.17721/sophia.2022.19.15>
- Tsyhura, H.O. (2022). *Athletes' education for the restoration of Ukraine*. Publishing House Baltija Publishing, pp. 30–33. <https://doi.org/10.30525/978-9934-26-253-1-7>
- Wang, J., Dong, K., & Wang, K. (2023). *Towards green recovery: Platform economy and its Impact on carbon emissions in China*. Economic Analysis and Policy, 77, 969–987. <https://doi.org/10.1016/j.eap.2023.01.004>
- Xames, M. D., Shefa, J., & Sarwar, F. (2023). *Bicycle industry as a post-pandemic green recovery driver in an emerging economy: a SWOT analysis*. Environmental Science and Pollution Research, 30(22), 61511–61522. <https://doi.org/10.1007/s11356-022-21985-2>
- Yakoviyk, I., & Turenko, A. (2023). *Confiscation of Russian Assets for the Restoration of Ukraine: Legal Problems of Implementation*. Problems of Legality, (161), 6–29. <https://doi.org/10.21564/2414-990x.161.277365>
- Yang, M., Cela, B., & Yang, F. (2020). Innovative energy policy to transform energy systems
ISSN : 2408-7920



- in Ukraine. *Mitigation and Adaptation Strategies for Global Change*, 25, 857-879.
- Zakharchenko, V. I. (2022). *Restoration of Ukraine from the Consequences of the War by Means of Neo-Economy: Sectoral and Spatial Approaches*. *Ukrainian Geographical Journal*, 2022(4), 23–36. <https://doi.org/10.15407/ugz2022.04.023>
- Zhuravka, F., Nebaba, N., Yudina, O., Haponenko, S., & Filatova, H. (2023). *The Hospitality Market in Ukraine: War Challenges and Restoration Possibilities*. *Innovative Marketing*, 19(1), 140–150. [https://doi.org/10.21511/im.19\(1\).2023.12](https://doi.org/10.21511/im.19(1).2023.12)
- Zolkover, A., Petrunenko, I., Iastremska, O., Stashkevych, O., & Mehdizade. (2022). *Benefits and Risks of Digital Business Transformation: the Example of Eastern Europe Countries*. *Journal of Eastern European and Central Asian Research*, pp 344–356