

Problemy i poglądy



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How is the post-pandemic economy transforming into a post-war economy in Ukraine: challenges for economic policy and society?

Abstract

The article considers the specifics of the Ukrainian economic transformation under the impact of recent macroeconomic shocks, i.e. the world pandemic and the war. The main goal of the research is the analysis of the challenges to the Ukrainian economy and society under the pandemic and the military aggression and economic policy instruments that the government used. An analysis of the new business cycle for Ukraine in W-form is presented with an explanation of the recovery trajectories, where international economic support plays its significant role. The directions of and financial resources for the recovery of Ukraine's post-war economy have been identified, including international assistance from partner countries (EU members, USA, and others), international organizations (IMF, World Bank Group, UNDP), and the Solidarity Fund that is going to be created. Preliminary estimates of damage to transport and social infrastructure, housing, and other material losses, as well as the problem of forced emigration of Ukrainian citizens are presented in this article. The paper includes the IMF's assessments of how the war in Ukraine impacts the global economy and its practical recommendations for monetary and fiscal policies for governments.

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Key words: multiple macroeconomic shocks, a pandemic, (post)-military economy, W-form of economic recovery, volunteer economy

JEL: E02, H22, H41, I30, O11

Jak gospodarka postpandemiczna przekształca się na Ukrainie w powojenną: wyzwania dla polityki gospodarczej i społeczeństwa

Streszczenie

Artykuł uwzględnia specyfikę ukraińskiej transformacji gospodarczej pod wpływem ostatnich szoków makroekonomicznych, tj. światowej pandemii i wojny. Głównym celem badań jest analiza wyzwań stojących przed ukraińskim społeczeństwem i gospodarką w warunkach pandemii oraz militarnej agresji i instrumentów polityki gospodarczej, którymi posługiwał się rząd. Przedstawiono analizę nowego cyklu koniunkturalnego dla Ukrainy w formie W z wyjaśnieniem trajektorii ożywienia, w których istotną rolę odgrywa międzynarodowe wsparcie gospodarcze. Określono kierunki i środki finansowe na odbudowę powojennej gospodarki Ukrainy, w tym pomoc międzynarodową ze strony krajów partnerskich (członków UE, USA i innych), organizacji międzynarodowych (MFW, Grupa Banku Światowego, UNDP) oraz powstającego Funduszu Solidarności. W artykule przedstawiono wstępne szacunki szkód w infrastrukturze transportowej, społecznej, mieszkaniowej i innych strat materialnych, a także problem przymusowej emigracji obywateli Ukrainy. Artykuł zawiera oceny MFW dotyczące wpływu wojny na Ukrainie na gospodarkę światową oraz praktyczne zalecenia dla rządów w zakresie polityki monetarnej i fiskalnej.

Słowa kluczowe: szoki makroekonomiczne, pandemia, gospodarka (post)militarna, forma ożywienia gospodarczego W, gospodarka wolontariacka

Introduction

Ukraine's economy and society have simultaneously faced two unprecedented challenges and macroeconomic shocks: the first, the COVID-19 pandemic, and the second, Russia's full-scale military aggression against Ukraine. Such shocks have and will have enormous consequences for the economy. As for the pandemic, it was of incredible scale for the economy and society of Ukraine, but also for the global economy as a whole. Since 2014 Ukraine faced military aggression (Russia annexed Crimea and later Donetsk and Luhansk oblasts also became temporarily occupied), however not to such a high scale as from 24 February 2022.

Since the world community reacted rather weakly to the bold violation of Ukraine's territorial integrity and sovereignty by its neighbour Russia, as well as mildly responded to external threats to Ukraine, it somehow levelled the established civilizational values of the postwar world, democratic principles of states existence, as well as respect for human rights, which have been constantly violated.

Russia's imperial encroachments on the sovereignty of states, supported by the personal ambitions and misconceptions of its authorities about the international order based on the "Russian world," which have not been stopped by the international community, have led to full-scale war against the Ukrainian people. The international (or world) order, which was set up after more than 20 million lives in World War II were lost, became the property of humankind after World War II. According to it countries within the borders recognized by the international community have the right to their sovereignty, territorial integrity, and inviolability of their borders. It has been violated. Further – hesitation of the international community in 2022 in making more decisive responses to the aggressor country and economic sanctions against the invasion of Russian regular troops on Ukrainian territory, fighting against Ukrainians on its territory, has led to the loss of international law of the post-war world.

The purpose of this article is to compare the main challenges to Ukraine's economic policy and society in a pandemic economy and in the (post) war economy, economic policy instruments that the government used, and to provide expert assessments of the prospects for Ukrainian economic recovery in the postwar period. The paper is structured as follows. In section 1, the literature is reviewed to find out the scientific basis and statistical data for analyzing challenges for the economy and society of Ukraine under stress conditions. Section 2 presents features of the multiple challenges, namely economic and military, as well as political and international. Section 3 investigates the business cycle of recovery of the post-war economy of Ukraine. Moreover, this section reveals the phases of a new business cycle of Ukraine. Section 4 considers the war in Ukraine as a challenge for the global economy on the basis of the IMF's analysis. Finally, the concluding remarks are given concerning the post-war future of Ukraine through the gamut of civilisational values and democratic principles of the modern world.

1. Literature review

Ukraine is an outstanding example in economic history, that is multiple shocks for the economy and multi-challenges for the country's society. The analysis is based on various sources of information, so this study is interdisciplinary, covering political and economic aspects. In this short review of literature, scholarly and expert standpoints regarding the economic policies and the economic recovery under the impact of the pandemic and the war are presented.

The problems in relations between Ukraine and Russia arose in 2014 after the beginning of Russia's aggression in the eastern regions and Crimea. Due to that aggression, some territories of Ukraine, the Republic of Crimea, are temporarily occupied. Scientists considered this issue at that time through the gamut of international relations and the energy security policy of the European Union. Samuel R. Schubert & Johannes Pollak & Elina Brutschin (2014) also discussed the

critical issues concerning preserving the EU's energy independence. The topics of hard talks also were tightening the screws against Putin's regime and anchoring Ukraine tightly into the Western fold.

This war is a severe one for Ukraine and the global economy. The imperial ambitions of the undemocratic regime in Russia have compounded the issues described that underline many causes and consequences of the war waged by Russia against Ukraine. Moreover, discussions that arose eight years ago concerned Russia's policy and its energy expansion in the world economy, i.e. the energy dependence of countries and regions on gas supplies from Russia. It is necessary to consider the accompanying economic shock, specifically the pandemic that preceded the war.

Researchers and practitioners e.g., V. Heets (2021), K. Georgieva (2020), M. Sandbu (2020), A. Bénassy-Quéré, B. Weder di Mauro (2020), M. de Bolle, M. Obstfeld, and A.S. Posen (2021), J. Hassler, P. Krusell, M. Ravn, K. Storeslette (2020), J.D. Ostry, L. Prakash, and B. Andrew (2019), F. Salmon, S. Ro (2021), A. Filipenko (2021), O. Moskalenko (2021), provide analysis of economics policies for the growth and development, policy responses to COVID-19 and the formation of a post-pandemic economy. Recommendations on economic instability and economic inequality (Heets 2021), pandemic policy priorities and actions are given by these authors. Furthermore, scientists come to the following conclusions.

The paradigmatic approach to the post-pandemic economy is a matter of time. Governments need to deliver policy-relevant economic policies (de Bolle, Obstfeld, Posen 2021). In particular, promote measures to reduce inequality, as inequality is detrimental to economic growth, as evidenced by econometric models (Ostry, Loungani, Berg 2019). Governments must act on the principles of "recover but better" "efficiency is everyone" (Georgieva 2020; Sandbu 2020) and therefore implement the latest income support systems (Bénassy-Quéré, Mauro 2020) according to the level of complexity of existing problems in the economy, ensuring adequate redistribution of income (Hassler at al. 2020). According to scientists, Ukraine falls out of these critical areas and goals compared to advanced countries (Filipenko at al. 2021). Another important conclusion of the outlined research is the need to ensure equality of starting economic opportunities, especially in education and medicine. The key to government policy is human centrism. Collectively, human-oriented economic policy measures could increase the productivity of the economy and its recovery (Moskalenko 2021).

In addition, government sources provide up-to-date analytical reports from research institutions that gather data on country policies and best practices in a pandemic (*Policy Responses to Covid-19... 2021; Economic policy priorities for... 2021*).

The Institute for Economics & Peace (IEP) studies (*How High is the Cost of War... 2019*) the effects of war on the economy and society. IEP research shows that some countries may lose up to 60% of their GDP due to the war. A comparison of the most and least peaceful countries, conducted by the IEP, shows the burden that the price of war creates for society. This think-tank estimates the average economic

cost of violence in the ten most conflict-affected countries globally, as an equivalent of about 41% of their gross domestic product (GDP). Studies also show that the average economic cost of violence in the ten most peaceful countries is only 3.9% of GDP in 2019. At the same time, the 2021 Economic Value of Peace report shows that the global economic impact of violence in 2020 is approximately \$ 14.96 trillion in constant purchasing power parity (PPP) terms (*Global Peace Index 2021...*; Pettinger 2022; Pisani-Ferry 2022).

Due to experts, before the Russian attack on Ukraine, the EU has already coped with a sharp deterioration in trade conditions and rising inflation. The last one was related to the price of imported energy. The confrontation with Russia involves a more pronounced and prolonged shock, seriously exacerbating the prevailing political dilemma.

The Ukrainian war will have significant economic policy consequences for the European Union and its members due to the negative supply shock caused by rising oil and gas prices, energy independence measures, refugees' influx, and increased spendings on the defence. Their direct budgetary implications could be from 1.1% to 4% of GDP in 2022 (*IMF Staff Statement on the Economic Impact...* 2022; *How High is the Cost of War...* 2019).

2. Features of multi-challenges and macroeconomic shocks to the economy and society of Ukraine

There are two super-challenges for Ukraine's economy and society: the first is a pandemic, the second is a full-scale war, the military aggression of one country against another, and Russia against Ukraine. The second super-challenge is a hybrid challenge, accompanied by conditions and consequences of pandemic and war, open hostilities. However, it is also a hybrid war, the form and methods the world learned in 2014. It is a war in which the occupier does not acknowledge his presence in the country he has attacked and carries out outright aggression against it. It is a war in which the occupiers openly violate international humanitarian law, bombing civilian infrastructure, and non-military facilities and killing civilians. In this new reality, the agreement on "green" corridors does not work, and there is a humanitarian crisis, which grows into a humanitarian catastrophe. This new reality, economic and social, encourages Ukraine to show great determination and speed in public administration every minute. Ukrainian authorities must make decisions very quickly to respond immediately to the economic and humanitarian needs of the army and the population.

In Ukraine, the pandemic economy was recovering and gaining new momentum, and the world was waiting for the end of the pandemic in the near future. The pandemic economy was forced to rapidly transform into a military economy. Accordingly, after the victory of Ukraine, it will acquire the format of a post-war

economy. In the post-war economy of Ukraine, the key issues will be an economic recovery, reconstruction of destroyed infrastructure, accession to the European Union, re-emigration, retention of internally displaced persons (from east to west Ukraine), restoration and creation of new jobs, namely, ordinary life of the country.

2.1. Challenges to the economy and society of Ukraine in a pandemic

Since March 2020, Ukraine has been facing a shock of the pandemic like all countries globally. The last one is caused by both a shock of demand and a supply shock. Many measures have been taken by the public authorities to combat the economic consequences of the pandemic and to maintain the health care system through the fiscal package (*Volodymyr Zelensky... 2021; The government is launching a program to support... 2021*). In particular, a program to develop the country's infrastructure called "Large Construction" has been launched. However, the negative economic consequences of the pandemic for Ukraine were more substantial than for the EU. These negative economic results of the pandemic were expected to worsen the more prolonged the pandemic and the more rigid the quarantine restrictions. An expert survey of the Ministry of Economy and other forecasts conducted in 2020 and 2021 are presented in table 1, which served as a forecast of macro indicators for economic recovery in the post-pandemic period.

Table 1. Forecast of individual indicators of organizations for 2020–2022 for Ukraine

Indicator	Consensus forecast ^a			IMF forecast ^a			World Bank forecast ^b			Government forecast ^c
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020
GDP, % of real change	-4,2	4,1	3,7	-7,7	4,0	3,4	-3,5	3,8	3,0	-4,8
Consumer price index										
average for the year	105,8	107,7	106,7	104,5	107,9	106,8	108,9	x	x	106,8
December to December of the previous year	107,0	107,4	106,6	107,7	107,2	106,0		105,0	105,0	111,6
Unemployment rate, in % to the labor force aged 15–70 years	9,4	9,2	8,7	10,1	8,6	8,4	x	x	x	9,4

Notes: ^a – as of April 2021; ^b – as of March 2021; ^c – indicators given in the resolution of the Cabinet of Ministers of 29.03.2020 № 253.

Source: *Impact of COVID-19 on the country's economy and society: Results of 2020 and challenges and threats of post-pandemic development*, Department of Strategic Planning and Macroeconomic Forecasting, 2021, p. 29, <https://vvv.me.gov.ua/Dotsuments/List?lang=uk-UA&tag=Konsensus-prognoz> (access: 12.10.2021).

According to the consensus forecast of the Ministry of Economy, two possible scenarios for the recovery of the Ukrainian economy after the lockdown restrictions of COVID-19 were: first, the pessimistic scenario of the so-called L-shape, which should last several years, and second, the worst and most dramatic type depression. Expectations were that the economic losses to the global world would be significant. The pandemic could not be stopped in 2020, and the incidence rate in the world in the fall of 2021 has risen sharply. So the government's hopes for the resumption of economic and consumer activity shifted from the second half of 2021 to the first half of 2022. According to expert estimates, Ukraine's small dependent economy was expected to show a more profound decline than the world economy. According to the State Statistics Service of Ukraine, in 2020, the decline in real GDP amounted to 4% instead of the growth during 2016–2019. The consumer price index in 2020 amounted to 5% (*Consumer Price Index... 2021*). In 2021 accelerated to 10% (*State Statistics... 2022*) against the background of strengthening the national currency and the unemployment rate of 9.3% (*Situation On The Labor Market...*).

According to the consensus forecast of the Ministry of Economy of Ukraine, the economy of Ukraine was supposed to significantly decline (Table 1). According to the IMF, the values of these indicators in 2020 were more pessimistic.

Expectations about the recovery of Ukraine's economy after the global pandemic were still there: it was to happen in the third quarter of 2022. As seen, the forecast of the Ministry of Economy provided for real GDP growth of 3.7%, consumer inflation – by 6.7%, and unemployment decrease to 8.7%. Nevertheless, the recovery phase with a higher level of economic growth before the pandemic in Ukraine has been disrupted brutally by the war. Likewise, the post-pandemic economy model of Ukraine has not been completed in the way one expected. It had to transform into a military economy quickly. At the same time, there are solid public expectations for economic recovery and the formation of a post-war economy with rapid economic growth.

Prior to the war, the main indicators of social and economic development of Ukraine as of January 2022 are presented in Table 2. Ukraine's economy on these basic socio-economic parameters proceeded from the economic downturn caused by the pandemic to a phase of recovery and growth in business. Cycles, as evidenced by the construction output index, which is 2021 to 2020, increased by 6.8%. There was an increase in average real wages by 12.5% over the same period; the industrial production index fell by 4.5%, but the agricultural production index increased by 4.4% (*The Main Indicators...*).

Thus, the pandemic brought the following negative socio-economic consequences: falling real GDP, reduced business activity with a further adaptation of business to new working conditions; loss of jobs; reduction of real incomes of citizens of Ukraine, reduction of inflow of foreign investments; temporary losses in the quality of education during the period of adaptation of educators to online learning. However, it also had some positives: improving the health care system and developing economic support programs.

2.2. Challenges to the economy and society of Ukraine in the context of Russia's military aggression

After the aggressor's attack, Ukraine found itself in a complicated situation. The challenges the country faces are interdisciplinary and affect each other. The ruined economy has affected society, living standards, and economic opportunities. In general, a new medium-term business cycle was launched, which can be divided and described in the following phases: survival phase (economic downturn), adaptation phase (bottom), recovery phase (economic growth), peak.

Table 2. Basic indicators of social and economic development of Ukraine

	For January 2022	Growth rate (decrease), %			
		January 2022 to		For reference	
		December 2021	January 2021	January 2021 to January 2020	2021 to 2020
Average monthly wage per employee					
nominal, UAH	14577,0	83,5	118,2	115,0	116,3
real, %	x	82,5	107,4	108,3	112,5
Arrears in wage ^a , mln. UAH	3072,3	95,8	103,4	x	x
Consumer price index	x	101,3	110,0	106,1	109,4
Industrial producer price index	x	109,6	169,1	117,6	140,8
Industrial production index	x	87,0	102,9	96,5	95,5
Agricultural production index	x	50,7	100,9	94,3	114,4
Index of construction output	x	16,5	102,8	88,1	106,8
Freight turnover, mln. tons/km	22654,3	89,6	108,5	99,3	85,6
Passenger turnover, mln. passenger/km	4964,1	101,2	131,6	48,7	45,8
Retail trade turnover, mln. UAH	127437	81,5	118,0	103,5	110,7
Exports of goods ^b , mln. USD	68089,3	x	x	x	138,4
Imports of goods ^b , mln. USD	72816,8	x	x	x	134,0
Balance (+, -) ^b , mln. USD	-4727,5	x	x	x	x
Exports of services ^b , mln. USD	13156,5	x	x	x	114,2
Imports of services ^b , mln. USD	7593,4	x	x	x	132,9

Tabela 2 – cont.

	For January 2022	Growth rate (decrease), %			
		January 2022 to		For reference	
		December 2021	January 2021	January 2021 to January 2020	2021 to 2020
Balance (+, -) ^b , mln. USD	5563,1	x	x	x	x
Capital investment, mln. UAH	528802,0 ^c	x	x	x	61,8 ^d

Note. Data exclude the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and a part of temporarily occupied territories in the Donetsk and Luhansk regions; ^a – As of February 1; ^b – Data for 2021; ^c – Data for January–December 2021; ^d – Data for January–December 2021 for January–December 2020, %.

Source: *The main indicators of socio-economic development of Ukraine*, State Statistics Service of Ukraine, <http://www.ukrstat.gov.ua/>.

The international experts began to consider economic recovery in the form of four forms – L, U, W, and V (*C-Suite Challenge™*...). When it comes to economic recovery, it is evident that this analysis can be applied to the military economy and its post-war phase. Characteristics of recovery trajectories in forms L and U are given in the table 3.

Table 3. Forms of economic recovery in medium-term business cycles (modern interpretation of The Conference Board)

Recovery form	Characteristics of the recovery trajectory
L-shaped	This scenario shows a rapid economic downturn and then a slow recovery period. This persistent unemployment marks it; it takes several years to return to previous levels.
U-shaped	Also called the “Nike Swoosh” recovery, in this scenario, the economy stagnates for several quarters and up to two years before experiencing a relatively healthy rise to its previous peak.
W-shaped	This scenario offers a tempting promise of recovery, returns to a sharp decline, and finally enters an entire recovery period of up to two years. It is also known as the “double recession,” similar to that was observed in the early 1980s.

Sources: *C-Suite Challenge™: COVID-19 Recovery Survey – Japan Edition*, The Conference Board, 18 pages, <https://www.conference-board.org/pdfdownload.cfm?masterProductID=21119>; *CEOs around the globe not optimistic about speed of recovery*, The Conference Board, August 04, 2020, <https://www.conference-board.org/topics/natural-disasters-pandemics/CEOs-around-the-Globe-Not-Optimistic-about-Speed-of-Recovery>; Dhruv Sharma, Jean-Philippe Bouchaud, Stanislao Gualdi, Marco Tarzia, Francesco Zamponi (2021), V-, U-, L- or W-shaped economic recovery after Covid-19: Insights from an Agent Based Model, “Plos one”, March 2 2021, <https://doi.org/10.1371/journal.pone.0247823>.

In the pandemic conditions, the Ministry of Economics of Ukraine predicted that Ukraine's economy would recover according to the L-shape (Fig. 1). From fig. 1, there is a conclusion that this is a sharp decline in the economy, accompanied by a slow recovery period.

Whenever an economy is going through a hotspot, optimism, and pessimism about its potential recovery can fluctuate widely. The current state of war is no exception. It remains to be seen whether this will be the trajectory that Ukraine is counting on. In the pandemic conditions in the pre-war period, the National Bank of Ukraine defined it as the trajectory L. Other analysts and executive directors – as the trajectory U (Fig. 2).

Figure 1. L-shape of recovery of the world economy, as a preliminary scenario for Ukraine before the war

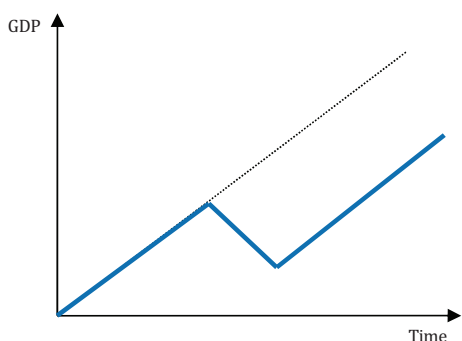
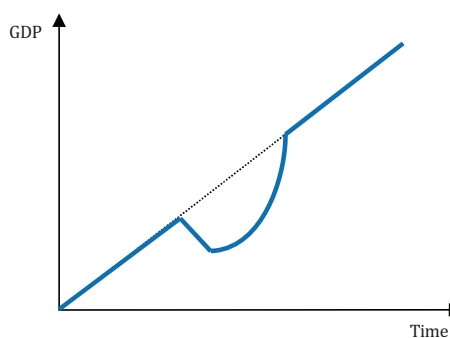
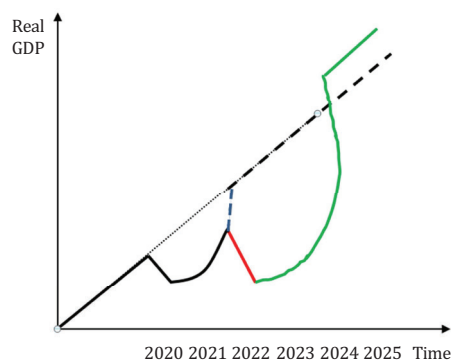


Figure 2. U-shape economic recovery as a preliminary scenario for Ukraine after the pandemic



Source: Ghosh 2020.

On the contrary, in accordance with Ukraine's economic recovery algorithm, taking into account international support and the regular payment of reparations by Russia in the medium term, Ukraine's economy will probably recover on the W trajectory, with repeated deeper subsidence (Fig. 3). How long will it take? According to optimistic forecasts, the reconstruction of Ukraine, and hence economic recovery, will take three years. Of course, this will depend on a combination of factors: the duration of the war, the extent of the destruction of civilian and military infrastructure, the number of casualties among the military and civilian population, the number of those who went abroad for temporary asylum and/or refugee status; support and speed of its provision for the recovery of the country and its economy, the restoration and creation of new jobs, the restoration of economic spheres and more. Reparations from Russia will have to wait for decades for international trials on Russia's military aggression against Ukraine (King 2022).

Figure 3. W-shape of economic recovery as a scenario for Ukraine after the war

Source: author's interpretation by I. Ghosh (2020).

The development of economic policy that will contribute to the recovery of Ukraine's economy also depends on the adequacy of the forecast.

3. Business cycle of recovery of the post-war economy of Ukraine: economic policy decisions

Fluctuations around the upward trend will occur in a new round of the business cycle, which will consist of the following phases:

I – the fall (in war – this is the phase of survival);

II – bottom (lowest point);

III – recovery (recovery phase, growth);

IV – peak (reaching the pre-war level or exceeding the pre-war level).

The main socio-economic characteristics of these phases, according to experts, may be as follows.

3.1. Survival phase

Civilian citizens of Ukraine of different age groups and, social statuses, spheres of employment are trying to save their lives and the lives of their families. They become temporarily internally displaced persons. In the first days of the war, in areas where active hostilities are taking place, economic activity is significantly reduced, sometimes up to 25%. This is accompanied by the cessation of production,

all commercial activities, the cessation of pre-school education, schools, and higher education, and, consequently, the freezing of jobs in the public sector and/or their loss in the private sector (Sochinskyi 2022).

There is a huge reduction in revenues to state and local budgets in the form of taxes and fees and other mandatory payments because of the decline in business activity to 75% in Ukraine. It also taught due to the nation's struggle for territorial integrity and independence. The war led to the complete closure of 50% (*Experts estimate previous infrastructure...*) of Ukrainian enterprises, while the other half were forced to work well below their capacities. However, some enterprises, trade-in food and hygiene products, pharmacies, medical institutions, urban transport, utilities operate to some extent, as these are institutions of critical infrastructure that ensure the functioning of large and small cities, towns, and villages.

At one point, the tax base was reduced, normal business activity declined sharply, but the need to finance the army, support the survival of the rear and its humanitarian needs – to ensure the livelihood of civilians, created a wave of non-refundable material and financial assistance, both domestic and international. At the same time, some businesses have shifted to military production, where output is transferred free of charge and irrevocably, and the jobs that arise are mostly voluntary or low-paid. The volunteer movement is becoming an influential humanitarian and financial donor to Ukraine's economy. Thus, it can be stated that the economy of Ukraine is currently co-financed by a non-refundable and gratuitous flow of goods and services. Thus, business activity is partially moved to the sphere of transfers: voluntary contributions free assistance. There is a new format of the economy and funding sources for its needs and demands – military economy, military-civil economy.

3.1.1. Losses in the economy of Ukraine from the war

The war in Ukraine has led to the tragic consequences of casualties and human suffering. The critical infrastructure in Ukraine has been extensively destroyed. Although the prospects are highly uncertain, the economic consequences are already severe and will be felt for a long time. As of the third decade of March, Ukraine has 3 million refugees abroad, 10 million of whom have left their homes and evacuated to other relatively safe regions. International financial assistance, including Rapid Financing Instrument (RFI) disbursements from the IMF, the World Bank, and the European Union, will help meet the urgent needs of the balance of payments during the ongoing war and provide essential support in the short term by acting as a catalyst for funding from other partners. It will also support needs and services for the population and finance the army.

Ukraine's economy is in shock, and the international markets will feel the consequences of the war. Currently, Ukrainian authorities record all the damage

caused by Russia's military aggression. According to the KSE Institute think-tank, as of March 17, 2022, the damage caused to Ukrainian infrastructure by a full-scale war waged by Russia has risen to \$ 62.6 billion. The amount of damage is volatile, given the further escalation and such previous losses are based on data analysis of the project "Russia will pay" – a portal for collecting information on destroyed facilities due to Russia's full-scale war against Ukraine, a joint project KSE Institute with the Office of the President and Ministry of economy of Ukraine (*Experts estimate previous infrastructure...*).

Thus, since the beginning of Russia's military invasion of Ukraine, at least 411 educational institutions, 36 health care facilities, 1,600 residential buildings, 26 factories and warehouses, 15 airports, six thermal power plants, etc., have been damaged destroyed, or seized. In addition, according to experts, more than 15,000 kilometres of highways, 5,000 kilometres of railways were destroyed, 15 airports, 350 bridges, and overpasses were destroyed or decommissioned, etc. The destruction of critical infrastructure, housing, and transport infrastructure severely impact Ukraine's economy. In addition, the aggressor is blocking foreign ships in the ports of the Black and Azov Seas. Criminal crimes are being committed that have severe negative economic consequences for Ukraine. In particular, on March 20, 2022, the Russian army stole five ships with Ukrainian grain in Berdyansk (*The Russians took five ships...*).

Today it is becoming clear that Ukraine and Russia have two different economic and political futures.

3.1.2. International financial, technical and humanitarian support to Ukraine during the war

According to the head of the NBU, the total international financial, technical and humanitarian support for Ukraine reaches more than 15 billion US dollars in equivalent, of which more than 5 billion – directly to the budget. Ukraine's public finance system is running smoothly thanks to significant funding to strengthen its defense capabilities, support Ukraine's economy, and address humanitarian issues from international organizations and partner countries. An additional source of funding for the needs of the Ukrainian army was the funds collected by organizations and citizens of Ukraine and other countries on the accounts of the NBU.

In terms of donors, international assistance to Ukraine is presented in Table 4.

Table 4. International assistance to Ukraine from international donors during the war

The donor of international financial assistance	Support form / date	Purposes	Total sum
<i>International Monetary Fund</i>	under the Rapid Financing Instrument (RFI) / March 9, 2022	to help meet urgent funding needs and mitigate the economic consequences of the war	\$ 1.4 billion (SDR 1,005.9 million)
<i>European Union</i>	macro-financial assistance	economic support	€ 1,2 billion
<i>World Bank Group</i>	The World Bank is preparing a package of assistance to Ukraine / the coming months	different goals	\$ 3 billion
<i>United Nations Development Program (UNDP)</i>	this assistance includes, in particular, assisting the government in maintaining the most critical governance structures and public services that are fundamental to every society	UNDP makes it a top priority to help Ukraine maintain its hard-earned development achievements	-
<i>United States of America</i>	military aid	assistance is the direct transfer of weapons and equipment from the US Department of Defense to the Ukrainian military. Part of this aid will go to civilians defending their towns and villages	two tranches: \$ 200 million and \$ 800 million
<i>Different donors</i>	international financial, technical and humanitarian assistance / as of March 3, 2022	supporting the economy and the vital needs of the people	\$ 15 billion

Source: *Ukraine received \$ 15 billion in aid during the war - NBU*, <https://www.slovoidilo.ua/2022/03/03/novyna/finansy/ukrayina-vijny-otrymala-dopomohy-15-mlrd-dolariv-ekvivalenti-nbu>; *NBU: international financial, technical, humanitarian support for Ukraine – more than \$ 15 billion*, *Finbalance: Finance and Economics*, <https://finbalance.com.ua/news/nbu-mizhnarodna-finansova-tekhnichna-humanitarna-pidtrimka-dlya-ukrani---ponad-15-mlrd>; *The World Bank is preparing \$ 3 billion in aid to Ukraine*, *Finbalance: Finance and Economics*, <https://finbalance.com.ua/news/svitoviy-bank-hotu-3-mlrd-dopomohi-ukrani>; *The United States is providing \$ 800 million in military aid to Ukraine*, details, 16 March 2022, Voice of America (Ukr.)

The provision of international assistance to Ukraine is dynamic. Sources of funding are expanding, as is the amount of aid between international donors. International partners are also considering establishing a Solidarity Fund for Ukraine; this stems from negotiations between the President of the European Council, Charles Michel, and the President of Ukraine, Volodymyr Zelensky. They will establish the Solidarity Fund to provide essential services and meet the urgent needs of Ukrainian citizens. The fund should provide liquidity to support the government further and, in the long run, serve as a basis for restoring a free and democratic Ukraine after the cessation of hostilities. The International Donors' Conference will provide a mechanism for contributing to the fund. The Kyiv School of Economics reported that the losses from Russian aggression in Ukraine had risen to \$ 62.6 billion. Earlier, the government called even higher figures (*Experts estimate previous infrastructure...*).

3.2. Bottom phase

Notwithstanding as fighting intensifies in areas where the aggressor is trying to gain access to the Ukrainian capital through the cities, heroically defending themselves from the aggressor and occupier, along with massive losses among civilians, there is a humanitarian crisis in many cities, and the small towns and villages is a humanitarian catastrophe. So we are talking about economic collapse in a large part of the country. Nevertheless, above all, the country is suffering casualties among the civilian population due to Russian war crimes in Ukraine, which are caused by unprecedented violations of international humanitarian law and international rules of warfare by the aggressor (*Ukraine war... 2022*). These human losses further heighten the mood for the evacuation of Ukrainians abroad in search of security and protection. According to UN forecasts, about five million citizens will leave Ukraine due to hostilities.

From the economic point of view, the bottom phase is characterized by a fall in actual output, inflation of more than 10% (*The IMF estimates...*) up to 20%, a fall in real incomes. What is expected? According to expert estimates of the International Monetary Fund, Ukraine's actual GDP losses in 2022 will be 10%. However, this is an optimistic scenario. According to the pessimistic forecast, if one considers similar international precedents during the war, for example, in Syria, Iraq, Lebanon, the IMF estimates that such losses of real GDP could be 25–35% (*The Ukrainian economy... 2022*).

In Ukraine, there are already significant economic losses in addition to human casualties. Seaports and airports have been closed and damaged, and many roads and bridges have been damaged or destroyed. It is already clear that Ukraine will have to bear significant economic recovery and reconstruction costs. In conjunction with some companies are refocusing on the needs of war and begin to produce products for the front (bulletproof vests, tourniquets). A large-scale volunteer movement is flaring up.

Working-age people are forced to leave their jobs. Men between 18 and 60 join the Armed Forces of Ukraine, the Territorial Defense, or the volunteer movement. Women of working age are partially working or looking for work abroad. The challenge for the economy and society is the transformation of a large number of people of working age into internally temporarily displaced persons or forced emigrants. Most have ceased all types of business, including production, logistics, service, import, and export. In the private sector, businesses that ceased or significantly reduced began to send workers on leave at their own expense during the first week of the war or offered manual labour instead of intellectual, lower-wage, piece-rate work. From an economic point of view, this is the deterioration of working conditions, lower living standards, and disqualification.

Imports stopped. Business activity is observed only in critical sectors – medicine, fuel, transportation. Imports from other sectors are frozen, disrupting production chains and international supply chains.

In the bottom phase, the government continues to guarantee Ukrainians the payment of salaries to state employees, pensions, scholarships for students and graduate students, and other social benefits. It becomes partly possible due to international support and additional issuance of money. The NBU has already opened a channel for refinancing banks without a limit of up to 1 year. 51 billion UAH was issued in the first few days, and the discount rate will remain unchanged at 10% (*Address of the Chairman...*). This approach closes out potential liquidity problems. There is a high risk that businesses will stop servicing loans, and bank depositors and customers will withdraw the hryvnia. As of now, 3 million Ukrainians who have already left the country pay with their hryvnia cards. Another channel of financing they need for liquidity is the purchase of military Internal Government Loan Bonds (IGLBs) by the Ministry of Finance directly at auctions. The first 20 billion UAH was issued in the first decade of March. The government has voiced a potential need for the hryvnia shortly about 400 billion UAH (*Government plans...* 2022).

The crisis funding of liquidity needs, i.e., the expansion of the money supply in the face of a colossal downturn in the economy and real GDP, could lead to a sharp rise in prices and the devaluation of the hryvnia, and hyperinflation. To prevent this, the NBU has introduced regulation of the national currency, a hybrid exchange rate regime, which plans to abandon after the war. The NBU has fine gold and foreign exchange reserves to maintain the hryvnia exchange rate at UAH 29.25 per dollar (*Official exchange rate of hryvnia...*). The pre-war level was 7–10% lower in the floating exchange rate regime. At the same time, international macro-financial assistance from international donors will play a significant role in maintaining the hryvnia exchange rate. As a result, real incomes will not grow, and many employees may lose their sources of income due to job cuts and losses, lower demand for services for the self-employed and individual entrepreneurs.

The demographic factor will also be a problem in the medium term. Women and children are forced to leave the country to save their lives. Moreover, this is a threat of loss of future population and labour. The question arises: under what conditions

will they be able or willing to return? Positive natural population growth is always a source of economic growth. Ukraine's economy will face the problem of declining birth rates due to uncertainty about the future, declining real incomes, loss of property or its depreciation, pessimistic inflation expectations, unemployment, and more.

The economy in the bottom phase will face a decline in actual output, under-employment, the outflow of labour, growth of the GDP gap due to rising actual unemployment, a significant excess over the natural rate of unemployment. According to Oaken's formula, a 1% excess of actual unemployment over its natural level leads to a loss of 2.5% in actual GDP. That is, according to rough estimates, without the use of econometric models of the sensitivity of GDP to the dynamics of cyclical unemployment, if actual unemployment is 12%, the loss of actual GDP of Ukraine will be 15%. Furthermore, if the actual unemployment rate reaches 18%, the loss of the actual GDP of Ukraine will be 30%.

According to a preliminary forecast published on March 16, 2022, by the United Nations Development Program (UNDP), if the protracted war in Ukraine continues, 18 years of socio-economic achievement could be lost, with almost a third of the population living below the poverty line and 62% will face a high risk of impoverishment over the next twelve months (*Every day without the restoration...* 2022).

The socio-economic consequences of the war in Ukraine will lead to "incredible human suffering due to the tragic death and forced displacement of millions of people" (Steiner 2022). There is an evident economic downturn, socio-economic difficulties, and human suffering for the already psychologically traumatized population. With the joint efforts of the Ukrainian authorities and the international community, the anti-Russian coalition must overcome this alarming trend.

3.3. Recovery phase

After the victory, Ukraine will return to its territories, including Crimea. At least, that is what the people of Ukraine are counting on. Ukraine needs a similar "Marshall Plan" for recovery. It is necessary to do:

1. Assess the scale of losses – infrastructure, production, business, housing.
2. Identify the source/resources of recovery. It is expected that international funds and grants will be created. The best solution is to accept Ukraine into the EU.
3. International institutional investors will be reluctant to come to Ukraine for some time before stabilizing the military and international political situation. Direct and portfolio investments will be limited. The decision is the complete capitulation of the Russian Federation, the international tribunal against war criminals, and the demilitarization of the Russian Federation.

4. Internal resources for recovery are also limited. Small businesses will be able to recover quickly. The government is working ahead and offering unprecedented conditions for business development. In particular, the program of available loans has been adopted, which includes the following opportunities: any business can take a loan at 0%; the maximum loan amount has been increased to 60 million UAH; the government will pay all interest to the bank; restrictions on the issuance of loans related to the business plan, jobs or any other are removed; after the end of martial law the interest rate on loans will be no more than 5%; simplifies the design of humanitarian aid; the government finances the creation of a job at the level of the minimum wage on January 1, 2022, which is 6500 UAH. The government reimburses communal services for 450 UAH per person per month to the population that has received internally displaced persons. Amendments were also made to the Tax Code during martial law and one year after its completion. The Parliament of Ukraine adopted the Law of Ukraine of 15.03.2022 № 2120-IX "On Amendments to the Tax Code of Ukraine and Other Legislative Acts of Ukraine Concerning the Validity of Norms for the Period of Martial Law."¹

The medium-sized businesses will need more resources. The government's program is open to relocating production from regions where active hostilities are taking place to relatively safe regions. Government funds/programs that will redistribute funds from international donors can also help.

According to the similar "Marshall Plan", recovery of the economy will lead to an increase in the state's share in the economy (temporary and forced). Big business will try to hold on to its monopoly position. This recovery phase can take 3–5 years.

In terms of human resources, after the victory, the government must ensure the security of citizens and maintain law and order. After restoring Ukraine's sovereignty and territorial integrity, the process of returning the population to

¹ During the war and the post-war state of development of the country, a new tax model was needed, and the President of Ukraine signed the Law of Ukraine dated 15.03.2022 № 2120-IX (Bill 7137-D) to support Ukrainian business in wartime. The Law contains drastic changes to the single tax, reduction of VAT and excise duty on fuel, tax incentives for big businesses and charities.

The first thing that has been adopted by the Law and applies to everyone, both citizens and the military – is the benefits of the sale of fuel.

In particular, in order to stabilize fuel prices, benefits are provided; namely, the VAT rate on fuel was reduced from 20% to 7%, and the excise tax was abolished.

Second, the simplified taxation system has been updated, and tax benefits have been provided.

Not only natural persons-entrepreneurs (NPE) on the simplified tax payment system will be able to pay the single tax, but also large enterprises at the new rates.

To this end, the Law on Martial Law for taxpayers in the 3rd group of the single tax increased the annual income limit from 7 million 600 thousand hryvnias to 10 billion hryvnias, and there are no restrictions the number of employees. The rate will be 2% of turnover regardless of activity (except for activities related to excisable goods, gambling, currency exchange and mining and mining, banks, insurance companies, private individual pawnshops, non-resident legal entities, so on). The reporting period is a quarter; the monthly payment is until the 15th. VAT will not be charged or paid for this period. NPE of first and second groups have the right not to pay a single tax. This norm is voluntary.

Ukraine may begin. It will be necessary to provide citizens with a resource for recovery – compensation for damaged or destroyed property and real estate, low mortgage rates for all.

After Ukraine accedes to the EU, the country gains enormous mobility – free movement of capital and labour and an efficient legal/judicial system.

3.4. Peak

After the recovery phase, Ukraine's economy will be able to peak in the medium term in 3–5 years above the level it was before the war. Economic policy should be aimed at achieving full employment and non-inflationary potential GDP. Inflation will be moderate up to 5%. The discount rate will be 7–10% to ensure the availability of loans for business development and mortgages for the population. With the entry into the EU, the Ukrainian economy would quickly establish supply chains, develop business, and attract foreign capital. Rebuilding critical infrastructure, production, and housing will require resources, including reparations by the aggressor country. In the years of restoration, the sphere of construction, medicine, the sphere of social assistance, and the sphere of education will acquire critical development. In general, the IT sphere and digital economy development will continue (*Ukraine 2030E is a country with...* 2020). Economic growth rates will be more than 4–7%, starting in 2025.

4. The war in Ukraine as a challenge for the global economy

The war in Ukraine overshadowed the end of the COVID-19 pandemic. According to the IMF, although the situation in Ukraine remains very volatile, the prospects are highly uncertain. The economic consequences of the war are already dire and tangible in many countries worldwide that have been importers of foodstuffs, such as grain or high-tech substances. Prices for energy and commodities, including wheat and other grains, have risen, exacerbating inflationary pressures due to supply chain disruptions. Price shocks will impact the world, especially on poor households, for which food and fuel account for a larger share of spending. Thus, poverty and economic inequality will increase in countries that depend on food imports from Ukraine. If the conflict escalates, the economic damage will be even more devastating. Economic sanctions against Russia will also significantly impact the world economy. Financial markets with significant influence on other countries are also affected.

In many countries, the crisis creates an adverse shock for both inflation and business activity amid rising price pressures. Russia's invasion of Ukraine in 2022 has led to higher oil and gas prices, which will lead to higher world fuel prices. As Russia is

a significant supplier of oil and gas, economic sanctions against Russia in response to the invasion will reduce supply and pressure to raise gas prices.

The turmoil for the global economy will lead to crises and difficult political compromises. According to the IMF's recommendations, the monetary authorities will need to closely monitor the shift in international prices to domestic inflation to calibrate the response. Fiscal policy will need to support the most vulnerable households to help offset the rising cost of living. The political landscape will become even more complicated as the world economy recovers from the pandemic crisis.

5. Concluding Remarks

At the moment, the society of Ukraine defends the values of civilized society – democratic values, the right to sovereignty, protection of human rights, the right to freedom, and expression of will. All this determines the formats of development of the civilized world and protection of the established democratic world order.

Ukraine will need at least 3–5 years to rebuild its economy after the war. According to IMF estimates, the decline will be from 10% to 25–35% of actual output. The Government of Ukraine must work ahead, supporting business development. Ukraine's economic recovery is possible with international donor assistance based on the similar Marshall Plan for Ukraine and accession to the European Union.

The International Solidarity Fund with Ukraine will be established to provide essential services and meet the urgent needs of Ukrainian citizens. The fund should provide liquidity to support the government further and, in the long run, serve as a basis for restoring a free and democratic Ukraine after the cessation of hostilities. The role of Ukrainian society will be vital in building the post-war economy. The economy will be transformed towards developing the military sector to protect the territorial integrity of countries and the state system, political stabilization, and create favourable investment conditions for foreign capital. Recovery will occur according to the business cycle's W-form.

People will play a key role in economic recovery. The state of Ukraine must create all conditions to encourage the return to Ukraine of its citizens who were forced to leave it and overcome the negative trend in demography.

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