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SHKUROPADSKA Diana,
PhD (Economics),
Senior Lecturer of the Department of Economics
and Competition Policy
State University of Trade and Economics

19, Kyoto St., Kyiv, 02156, Ukraine
ORCID: 0000-0002-6883-711X
diana.shkuropadska2016@knute.edu.ua

LEBEDEVA Larysa,
PhD (Economics), Associate Professor,
Associate Professor of the Department
of Economics and Competition Policy
State University of Trade and Economics

19, Kyoto St., Kyiv, 02156, Ukraine
ORCID: 0000-0001-8632-5460
l.lebedeva@knute.edu.ua

OZHELEVSKAYA Tatyana,
PhD (Economics), Associate Professor,
Associate Professor of the Department
of Economics and Competition Policy
State University of Trade and Economics

19, Kyoto St., Kyiv, 02156, Ukraine
ORCID: 0000-0002-8985-5149
t.ozhelevska@knute.edu.ua

RESILIENCE OF THE EU AND UKRAINE ECONOMIES IN THE CONDITIONS OF RUSSIAN AGGRESSION

The brutal and inexplicable military aggression of Russia against Ukraine has caused the disruption of macroeconomic stability in our country. The war has led to immense human casualties and the loss of means of livelihood, placing a heavy burden on the economy and forcing millions of people to leave their homes. The longer the armed conflict is persisting, the more severe the consequences are becoming, not only for Ukraine but also for its partners, with the European Union being a key one. The functioning of the economy during wartime exacerbates the question of ensuring its resilience. The aim of this article is to identify macroeconomic shocks in the context of war, analyse the level of economic resilience in the EU and Ukraine, and justify directions for supporting the Ukrainian economy. General scientific methods were used, including theoretical generalization, comparative systemic analysis, systematization, statistical analysis, grouping, and

ШКУРОПАДСЬКА Діана,
доктор філософії за спеціальністю "Економіка",
старший викладач кафедри економічної
теорії та конкурентної політики
Державного торговельно-економічного
університету

вул. Кіото, 19, м. Київ, 02156, Україна
ORCID: 0000-0002-6883-711X
diana.shkuropadska2016@knute.edu.ua

ЛЕБЕДЕВА Лариса,
к. е. н., доцент, доцент кафедри економічної
теорії та конкурентної політики
Державного торговельно-економічного
університету

вул. Кіото, 19, м. Київ, 02156, Україна
ORCID: 0000-0001-8632-5460
l.lebedeva@knute.edu.ua

ОЖЕЛЕВСЬКА Тетяна,
к. е. н., доцент, доцент кафедри економічної
теорії та конкурентної політики
Державного торговельно-економічного
університету

вул. Кіото, 19, м. Київ, 02156, Україна
ORCID: 0000-0002-8985-5149
t.ozhelevska@knute.edu.ua

СТІЙКІСТЬ ЕКОНОМІК ЄС ТА УКРАЇНИ В УМОВАХ РОСІЙСЬКОЇ АГРЕСІЇ

Жорстока, нічим не обумовлена військова агресія росії проти України, зумовила руйнування макроекономічної стабільності у нашій державі. Війна призвела до величезних людських жертв і втрати засобів до існування, спричинила навантаження на економіку та змусила мільйони людей покинути свої домівки. Що довше тривають бойові дії, то гіршими стають наслідки війни не лише для України, а й для її партнерів, ключовим з яких є Європейський Союз. Функціонування економіки в умовах війни загострює питання забезпечення її стійкості. Метою статті є ідентифікація макроекономічних шоків в умовах війни, аналіз рівня стійкості економік ЄС та України, що надає можливість обґрунтувати напрями підтримки української економіки. Використано загальнонаукові методи: теоретичного узагальнення, порівняння, системного аналізу, систематизації, статистичний, групування та



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scientific abstraction. In this research, the properties of economic resilience are described, specifically its capacity to avoid, withstand, and recover from the impact of shocks. Existing macroeconomic shocks of the war are identified, which have determined the trajectory of economic development for both Ukraine and the EU and influenced the level of resilience in their economies. Using approaches from the European Commission and the international company FM Global, the current level of economic resilience in the EU and Ukraine was determined. The war exhausts the resources of the national economy, making Ukraine incapable of independently and sufficiently mobilizing financial resources to counteract shock impacts. Conversely, the EU possesses significant resources, allowing it not only to maintain a sufficient level of economic resilience but also to assist Ukraine. Financial assistance from the EU remains a key source of ensuring the resilience of Ukraine's economy, enabling the implementation of measures to counter the current crisis and the shock impacts associated with it.

Keywords: resilience of the economy, development, European Union, shock effects, war.

JEL Classification: E69, F22, O52.

наукової абстракції. У дослідженні описано властивості стійкості економіки, зокрема її здатність уникнути, витримати та відновитись від дії шоківих впливів. Ідентифіковано наявні макроекономічні шоки війни, які визначили траєкторію економічного розвитку України та ЄС, а також вплинули на рівень стійкості їх економік. Використовуючи підходи Європейської комісії та міжнародної компанії FM Global, визначено поточний рівень стійкості економік ЄС та України. Війна виснажує ресурси національної економіки, тому Україна не здатна самостійно та в достатній кількості мобілізувати фінансові ресурси для протидії шоківим впливам. Натомість ЄС має значну кількість ресурсів, щоб не лише підтримувати достатній рівень стійкості своєї економіки, а й допомогти Україні. Фінансова допомога з боку ЄС є одним з ключових джерел забезпечення стійкості економіки України, що дає змогу реалізовувати напрями протидії наявній кризі та пов'язаних з нею шоківим впливам.

Ключові слова: стійкість економіки, розвиток, Європейський Союз, шоківі впливи, війна.

Introduction

The rapid dynamics of modern life give rise to new challenges, intensify methodological searches, and shape new paradigms for researching economic processes. Among the numerous issues, the problem of ensuring the resilience of contemporary economic systems stands out. Resilience is not only a security concept; it also manifests itself in the economic realm. The ability to maintain economic resilience depends on a country's resource and financial capabilities to withstand shock impacts and recover from them. In the context of the Russian-Ukrainian war, studying aspects of resilience becomes particularly relevant, as this period serves as a stress test for the national economy's resilience to shock impacts.

The war in Ukraine has also affected the economic development of the European Union (EU), which had to respond to new crises such as: security, humanitarian, energy-related, and inflationary. Despite this, the EU remains one of Ukraine's major financial donors during the war and its primary trading partner. Researching the issues of economic resilience for both the EU and Ukraine will allow the identification of a range of shock impacts arising from Russian aggression and determine the prospects for our country's economic recovery.

The problem of ensuring the resilience of economic systems is actively studied by Ukrainian and foreign researchers, as well as economic practitioners. Boiko A. states that compensatory measures play a key role in ensuring economic resilience to shock effects, which can be categorized into fiscal, macroprudential, microprudential, and monetary policies (Boiko et al., 2022).

The publication by Bruneckiene J. (Bruneckiene, 2019) is dedicated to the study of the resilience of socio-economic systems to economic shock impacts. The researcher notes that the influence of economic shocks on the development of socio-economic systems can be twofold: either negative (causing harm to the economy) or positive (economic disruptions can create new opportunities for the development of the socio-economic system).

Adaptation of the economy to macroeconomic shocks is determined by effective and rational management of resources in the country states Lagutin V. In the process of managing resources, the government must take into account the key institutional conditions that contribute to ensuring the resilience of the economy. That include protection of property rights, increasing the financial power of the insurance market, fighting corruption, and supporting economic activity (Lagutin et al., 2020).

The European Commission (Economic resilience in EMU, 2017) researches directions for ensuring economic resilience. Among the key directions, it includes: maintaining employment levels, ensuring financial resilience, supporting regional policies to reduce disparities in the development of depressed regions, and providing financial assistance to countries facing budgetary challenges.

The research on sectoral aspects of economic resilience was conducted by us previously (Lebedeva, 2019). Estimation of the resilience level of industry to external and internal shocks was made using such indicators as: ability of industry to self balance, labour productivity, labour intensity, profit ability of operational activity, level of technological support of industry.

The interrelation between industrial network characteristics and economic resilience is also demonstrated by Wenqi Duan (Wenqi, 2022). The study revealed that industrial network characteristics can enhance resilience and circumvent economic collapse. Namely, upsurges in FDI and the degree of interaction strength can enhance economic resilience as well as exchange rate volatility can impede industrial growth and suppress system resilience.

The relationship between employment protection and economic resilience has been studied by Nadav Ben Zeev (Zeev, 2022). The study shows that strict firing restrictions are associated with a weaker initial response of the labour market, which is followed by a stronger and more persistent decline in real output as well as a slower return of real activity to pre-shock levels.

The dependency between digitalization in finance and economic resilience is demonstrated by Yanan Du (Du, 2023). The study shows that improving the level of digital inclusive finance has a positive impact on economic resilience, which mainly stems from the deepening of the coverage breadth and use depth of digital inclusive finance and gradually increases over time. The better the financial market environment and

business environment are, the stronger the role of digital inclusion finance in promoting economic resilience.

Therefore, in the economic literature, aspects of resilience have been analysed extensively and thoroughly. However, the analysis of the shock impacts of war and associated threats still lacks sufficient attention, especially with regard to assessing their influence on the economic resilience of both EU countries and Ukraine.

The research aims to identify macroeconomic shocks in the context of war, analyse the level of economic resilience of the EU and Ukraine, and to substantiate the directions of support for the Ukrainian economy. The research employed methods of theoretical synthesis and comparison to elucidate the concept of economic resilience. System analysis was utilized to identify key macroeconomic shocks arising from the Russian-Ukrainian war. Statistical analysis and grouping methods were used to analyse the resilience levels of the EU and Ukrainian economies. The method of scientific abstraction was applied in drawing conclusions from the conducted research.

The article's structure is as follows: it begins with an examination of the concept of economic resilience, approaches to its definition, and its core components. The next sections analyse the primary macroeconomic shocks resulting from the war, both for the EU economies and Ukraine. Subsequently, the article delves into the analysis of the economic resilience of the EU and Ukraine based on statistical data. Finally, directions for ensuring the resilience of the Ukrainian economy during and after the war are highlighted.

1. Concept of Economic Resilience

The study and exploration of the concept of resilience in economics began in the early 20th century. In 1997, economics professor Michael Retch defined resilience as the structure of connections between macroeconomic variables that persist over a certain period of time, with this structure being influenced by economic, political, social, and institutional factors (Retch, 1997). In 2008, in order to provide a quantitative assessment of resilience, it was defined as the ability of an economy that has experienced a shock to return to its previous level or rate of production and employment growth.

Starting from 2009, the concept of resilience encompassed not only an economy's ability to return to its previous level of development after a shock impact but also its capacity to avoid or withstand such an impact altogether. It was at this time that the role of policy in strengthening resilience began to be studied, as it can mitigate risks and consequences of financial and economic crises (Briguglio, 2009).

There exists a diverse range of approaches to defining the concept of "economic resilience" in scientific literature. However, up to the present time, there hasn't been a unified theory that comprehensively addresses the manifestations of economic resilience. Effective functioning and development of the economy are primarily ensured by high-quality state governance decisions. In practice, issues related to ensuring economic resilience are addressed by both government authorities and international organizations, each of which has its own approaches to understanding the concept of economic resilience (*Table 1*).

Table 1

Key Approaches to Understanding the Concept of Economic Resilience

Organisation	Year	Study name	Concept of economic resilience understanding
Economic Development Administration (EDA) (an agency of the U.S. Department of Commerce)	2019	"Comprehensive Economic Development Strategy"	The ability of a region to withstand and quickly recover from a shock impact, or even to avoid it altogether (Economic Development Administration, 2019)
European Commission	2017	"Economic Resilience in an Economic and Monetary Union"	Resilience is the ability of an economy to prevent or withstand a shock impact and swiftly recover, increasing the gross domestic product (GDP) to its potential pre-crisis level (Economic resilience in EMU, 2017)
The National Association of Counties (NACo).	2017	"What is Economic Resilience?"	The ability of an economic system to anticipate, adapt to, and leverage changing conditions in its own interest (The Center for Economic Development Research, 2017)
Organisation for Economic Co-operation and Development (OECD)	2016	"Strengthening economic resilience: insights from the post-1970 record of severe recessions and financial crises"	The ability of an economic system to reduce vulnerability to shock impacts, resist them, and recover rapidly (Caldera-Sanchez, 2016)
World Bank Group	2014	"Economic resilience: definition and measurement"	The ability of a country to adapt to difficulties, adverse influences, or external shocks, as well as to respond to and overcome them (Hallegatte, 2014)

Source: compiled by the authors.

The analysis of the approaches mentioned above shows that, in a general sense, economic resilience is most often considered from the standpoint of the economy's resistance to changes in its internal and external environment and the preservation of its parameters. In our view, economic resilience is not simply about preserving its properties and parameters,

but about their stable development. The level of economic resilience depends on the extent to which it can overcome adverse shock impacts.

Therefore, based on the analysis of approaches to understanding the concept of economic resilience and considering the essential characteristics of the economy, it is appropriate to view economic resilience as a property of an economic system to avoid, withstand, and recover from the effects of internal and external shock impacts while maintaining its parameters, properties, and functions.

2. Macroeconomic Shocks of War

The resilience of an economy is influenced by shock impacts, which have significant characteristics: firstly, an extraordinary stimulus manifested by sudden changes in economic conditions that lead to fluctuations in the dynamics of one or multiple economic indicators; secondly, these impacts should induce destabilization in the development of a specific economic object (enterprise, market, individual region, sector, or the entire economic system) (Shynkorenko, 2010, p. 45).

Economic resilience in the context of war is a complex and multifaceted issue. War always has a profound impact on a country's economy, destabilizing processes in production, consumption, employment, and other spheres. Destabilizing factors influencing economic resilience in times of war include:

Reduction in production levels: military actions lead to the halt or restriction of production due to infrastructure destruction, unstable raw material supplies, high risks to the workforce, etc., all of which contribute to a decrease in the country's GDP.

Changes in expenditures: the state is compelled to allocate significant resources for military needs, such as weapons, ammunition, military infrastructure, and support for servicemen, which reduces spending in other sectors.

Alterations in external economic relations: war leads to limited external trade due to blockades, sanctions, and loss of markets. This directly impacts export-import operations and currency exchange.

Decline in investments: war creates uncertainty and risk, resulting in reduced investments from both domestic and foreign investors. Investment decreases due to the uncertain political and economic situation.

Inflation: ongoing funding for military operations can increase the money supply in circulation, potentially leading to inflation.

Changes in employment: in a war environment, a significant number of people lose their jobs due to enterprise destruction and evacuation from combat zones.

Social and psychological aspects: military actions influence the psychology of the population, leading to reduced consumer activity, increased stress, anxiety, and other health-related issues. This can negatively impact the overall state of the economy.

Table 2 presents key macroeconomic shocks in the context of the Russian-Ukrainian war that directly affected the macroeconomic development of both Ukraine and the EU.

Table 2

Macroeconomic Shocks in the Context of the Russian-Ukrainian War

Shocks	Effects on economy
Commodity	According to the World Bank, the war in Ukraine will cause the "largest commodity shock" since the 1970s. Failures caused by the conflict will lead to a significant increase in prices for commodities, ranging from natural gas to wheat and cotton
Economic	Trade disruptions and rising inflation levels in Ukraine are putting pressure on companies and households, also posing a threat to economic growth in the EU
Migration	The war has deepened the demographic crisis in Ukraine. It has intensified migration processes and contributed to a decline in the birth rate. Nearly seven million Ukrainians have left the country after the full-scale Russian invasion
Balance of Payments	This shock affects the country's economy primarily through reduced foreign currency inflows, capital flight, and divestment – the withdrawal of investments from the country
Fiscal	The budget deficit started to increase due to increased military funding and the liberalization of import controls; tax revenues sharply declined
Devaluation	One of the powerful factors of systemic risk for the economy is a devaluation shock, or a sharp depreciation of the local currency against the US dollar. This has led to a significant decrease in the purchasing power of the currency, an increase in the debt burden, and the exacerbation of problems in the credit portfolios of Ukrainian banks
Infrastructure	Destruction of critical infrastructure in Ukraine as a result of deliberate actions by Russia
Energy	Changes in prices and availability of energy resources

Source: compiled by the authors.

The Commodity Shock is one of the fundamental shocks, as with the onset of full-scale military actions in Ukraine in the spring of 2022, the planting campaign was under threat, and also due to the lack of access to ports for the export of agricultural products, the average food price in 2022 increased by 14 % compared to 2021. The FAO Food Price Index averaged 143.7 points in 2022, that is all times high indicator. The FAO Food Price Index increased for the first time in three months to 123.9 in July 2023 from an upwardly revised 122.4 in June which was the lowest since April 2021 (Trading economics, 2023) that is the result of instabilities in the markets due to the halt of the Black Sea Grain Initiative in July of 2023.

War triggers an increase in prices for goods and fuel worldwide. In response to the commodity shock, the USA and Europe raise interest rates to curb inflation. Consequently, loans become more expensive for developing countries that accumulated debts during the COVID-19 pandemic.

The Economic Shock entails a decrease in consumer demand due to the aftermath of the COVID-19 crisis and high inflation. This leads to reduced trade volumes and overall GDP both in the EU and Ukraine.

The Migration Shock involves labour force losses in Ukraine due to significant population migration. Various estimates suggest that around 7 million Ukrainians are currently abroad. According to the Center for Economic Strategy, post-war migration may result in 860 thousand to 2.7 million Ukrainian refugees abroad, potentially causing a GDP drop in Ukraine ranging from 2.55 % to 7.71 % annually (Vyshlinsky et al., 2023). The European Union could potentially boost its GDP by effectively integrating migrants into its economy. Furthermore, the migration crisis threatens a demographic crisis that has worsened due to declining birth rates in Ukraine. In the first half of 2023, Ukraine's birth rate decreased by 28 % compared to the corresponding period of pre-war 2021, marking the most significant birth rate crisis during the period of independence (Birth Rate in Ukraine, 2023).

Balance of Payments Shock involves the outflow of investments and capital from Ukraine, including both businesses and individuals transferring funds abroad. According to the data from the National Bank of Ukraine, the outflow of currency was associated with this shock, leading the National Bank to utilize over USD 28 billion from its gold and currency reserves in 2022, which was largely equivalent to the financial assistance provided by international partners (National Bank of Ukraine, 2023).

Fiscal Shock entails a reduction in tax revenues to the budget due to decreased business activity on one hand, and increased government expenditures for military and social payments on the other. Defence spending during the first five months of 2023 amounted to UAH 745 billion, accounting for 56 % of total expenditures, with UAH 174 billion allocated for law enforcement and security (Ukraine War Economy Tracker, 2023). In this context, the support of the EU, USA, and other partners is crucial to maintain the functioning of Ukraine's economy.

Devaluation Shock involves the depreciation of the hryvnia against major international currencies. In 2022, the hryvnia depreciated by 34 % against the dollar, resulting in a significant contraction of Ukraine's GDP by 29.2 % and an inflation rate increase of 26.6 % in 2022 (Website of "Minfin Media" LLC, 2023).

Infrastructure Shock refers to the destruction of critical infrastructure in Ukraine. Since the beginning of the full-scale invasion, Russian forces have targeted critical infrastructure such as airports, railways, oil depots, bridges, dams, and power plants. According to Yasno company data, by the end of February 2023, Ukraine experienced more than 250 attacks on energy infrastructure facilities, with estimated damages reaching USD 6.8 billion (Official Yasno website, 2023).

Energy Shock involves the rise in prices for key energy resources in the EU due to the cessation of their purchase (gas, coal, oil, and petroleum products) from russia. This led to price increases, subsequently driving the inflation rate to 11 % in the fall of 2022. European countries were

forced to temporarily deviate from parts of their environmental plans and revert to using coal as a fuel source.

3. Analysis of Economic Resilience level

According to the approach of the European Commission, economic resilience is defined as the ability of an economy to avoid or withstand shock impacts and quickly recovers, increasing the gross domestic product (GDP) to its pre-crisis potential level. Analysing the dynamics of GDP is one of the key indicators for assessing economic resilience. The GDP dynamics can provide crucial insights into the state of the economy and its capacity to recover from shock impacts. *Figures 1 and 2* are shown the dynamics of GDP per capita at purchasing power parity (PPP) for Ukraine and the European Union from 2013 to 2022.

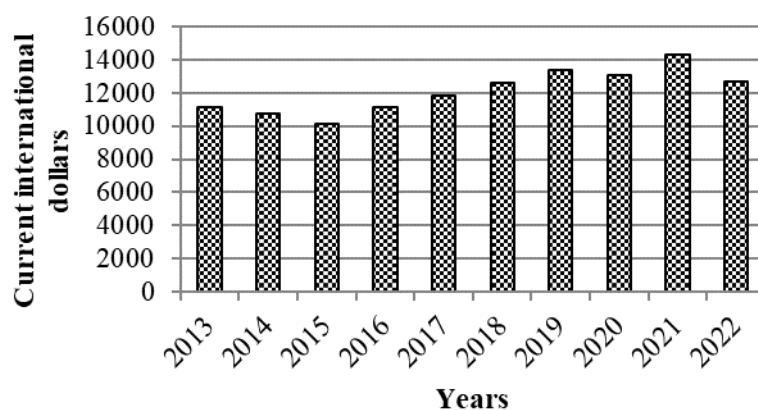


Figure 1. The dynamics of GDP per capita at PPP for Ukraine from 2013 to 2022

Source: compiled by the authors according to (The World Bank, 2023).

Since the beginning of the Russian invasion, the Ukrainian economy has suffered significant losses. In 2022, GDP per capita at PPP decreased by 11.32 % compared to 2021. For comparison, in 2015, the indicator decreased by 5.39 % following the annexation of Crimea and the occupation of parts of the Luhansk and Donetsk regions. After 2015, the Ukrainian economy started recovering until 2019, but it couldn't maintain a positive trajectory during the COVID-19 crisis, resulting in a 2 % decline in 2020. Thus, the Ukrainian economy demonstrates high sensitivity to shock impacts, which inevitably reduce its production level.

The key reasons for the GDP decline in the context of the Russian-Ukrainian war include decreased private consumption, reduced levels of capital investment, and a contraction in exports. To prevent a financial collapse, the government introduced restrictive monetary policies (capital controls, limitations on the banking sector) and supportive fiscal policies (tax deferrals, subsidies, and other measures to support businesses and the financial sector).

The war has not only devastated the Ukrainian economy but also created problems for other countries, particularly within the EU. Eastern European countries, in particular, feel the weight of the war more heavily than Western EU countries (Petryk, 2022).

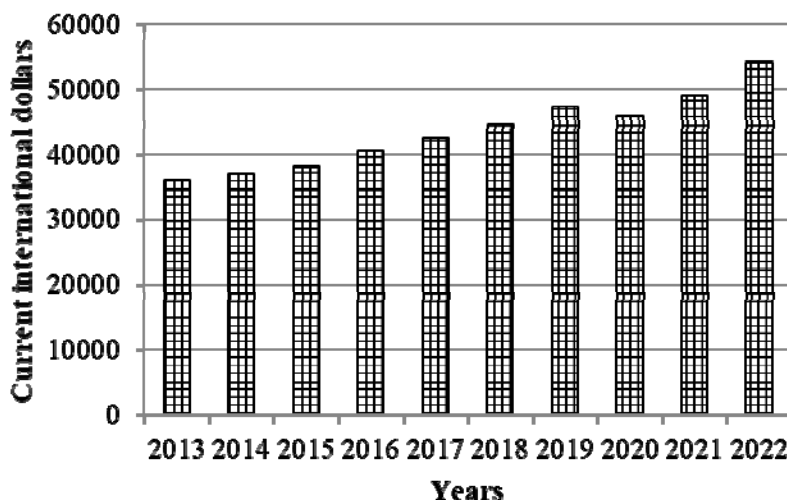


Figure 2. The dynamics of GDP per capita at PPP in the European Union from 2013 to 2022

Source: compiled by the authors according to (The World Bank, 2023).

The GDP per capita at PPP in the European Union was last recorded at USD 54 248.6 in 2022, which is 9.6 % higher than in 2021. Amid the COVID-19 pandemic, this indicator contracted by 3.34 % in 2020, and it rebounded by 6.36 % in 2021. In essence, the EU’s economy is capable of promptly and substantially mobilizing its financial resources to counteract shock impacts.

As the highest executive authority of the EU, the European Commission addresses various aspects of ensuring the resilience of the EU economy. Here are some of the key methods by which the European Commission ensures economic resilience:

Economic analysis and forecasting: the European Commission conducts economic analysis and forecasting to assess the current state of the EU economy and predict its development. It publishes regular reports and forecasts on economic growth, employment, inflation, deficits, and other economic indicators.

Financial stability: the European Commission prioritizes financial stability within the EU. It regulates financial markets, proposes legislative acts to ensure stability of banks, financial institutions, and investment activities.

Resilience and growth policy: the European Commission develops and implements resilience and growth policies, including through the Stability and Growth Pact, which establishes rules for ensuring stable fiscal policies among member countries.

Financial support: the European Commission devises and coordinates financial support for member countries facing financial difficulties or crises through mechanisms such as the European Stability Mechanism, European Globalization Adjustment Fund, and European Regional Development Fund etc.

Green development and digital transformation: the European Commission actively supports the "Green New Deal" strategy and the EU's Digital Programme, aimed at creating resilient and innovative economic sectors.

Coordination and cooperation: the European Commission collaborates with other EU bodies, member states, international organizations, and other stakeholders to address economic challenges and support resilience.

These measures and initiatives aim to ensure the resilience of the EU economy, enhance its competitiveness, and promote sustainable economic growth and well-being for all citizens of EU member states. Resilience is a dynamic category that evolves over time. The level of economic resilience represents the degree of prevention, overcoming, and recovery of the economic system from the impact of shock events, characterized by quantitative and qualitative indicators.

The international insurance company FM Global compiles a ranking of countries based on the results of calculating the Global Resilience Index. The company assesses 130 countries using 12 factors grouped into three categories: economic potential, risk quality and supply chain. *Table 3* presents the data of the Global Resilience Index for EU member countries and Ukraine in 2022–2023.

Table 3

Global Resilience Index for EU member countries and Ukraine in 2022–2023

Country	2022		Level	Country	2023		Level
	Place (130 countries)	Points (100 points)			Place (130 countries)	Points (100 points)	
Denmark	1	100	sufficient	Denmark	1	100	sufficient
Luxembourg	3	97.5		Luxembourg	3	97.3	
Germany	5	96.5		Germany	4	96.8	
Sweden	7	94.2		Sweden	8	93.8	
Austria	9	93.8		Finland	9	93.6	
Belgium	10	93.4		Austria	10	93.3	
Finland	12	92.7		Belgium	11	93.2	
Netherlands	15	89.8		Netherlands	15	90.0	
France	16	89.4		France	16	89.7	
Spain	17	87.4		Spain	17	87.9	
Ireland	18	87.1		Ireland	18	87.6	
Czech Republic	23	82.9		Czech Republic	23	83.7	
Poland	25	80.3		Poland	25	80.3	
Portugal	27	79.5		Portugal	26	79.1	
Estonia	28	77.2		Estonia	29	77.2	
Italy	29	76.7		Italy	30	76.7	
Lithuania	31	74.9		Lithuania	31	75.2	
Hungary	33	72.9	Hungary	33	73.0		

End of table 3

Country	2022		Level	Country	2023		Level
	Place (130 countries)	Points (100 points)			Place (130 countries)	Points (100 points)	
Slovakia	35	69.4	medium	Cyprus	35	69.8	medium
Cyprus	36	69.2		Malta	36	69.3	
Malta	37	68.4		Slovakia	37	68.9	
Romania	38	68.1		Romania	38	68.4	
Slovenia	39	67.4		Slovenia	39	67.7	
Croatia	41	66.6		Latvia	40	67.6	
Latvia	42	66.5		Croatia	42	66.8	
Greece	45	62.3		Greece	45	63.1	
Bulgaria	47	60.8		Bulgaria	46	61.2	
EU		80.4	sufficient	EU		80.6	sufficient
Ukraine	75	46.8	medium	Ukraine	74	47.1	medium

Note: low level (1–29 points), moderate level (30–44 points), medium level (45–69 points), sufficient level (70–100 points).

Source: compiled by the authors according to (FM Global Resilience Index, 2023).

According to the data from Table 3, out of the 27 EU member countries, 18 countries have a sufficient level of resilience (70–100 points), while 9 others have medium level (45–69 points). The overall Global Resilience Index value for the EU in 2022 was 80.4 points, and in 2023 it was 80.6 points, which indicates a sufficient level. Denmark has the highest global resilience value (100 points), while Bulgaria has the lowest. Ukraine’s Global Resilience Index in 2022 was 46.8 points, and in 2023 it was 47.1 points, which is an medium level and the lowest among EU member countries.

The European Commission believes that the Ukrainian economy has maintained its resilience despite the war. According to the forecasts of the European Commission, the country’s recovery process will begin from mid-2024, accompanied by a gradual decrease in the inflation rate, which is expected to be around 20 % this year. The unemployment rate will also decrease (currently at 15 %). "Huge" efforts will be needed to attract investments and initiate a comprehensive reconstruction, the cost of which is currently estimated at USD 411 billion (Spring 2023, Economic Forecast).

4. Directions for Ensuring the Resilience of the Ukrainian Economy

The full-scale war in Ukraine necessitates a reconsideration of approaches to formulating economic management strategies and developing new, more effective methods of state regulation. Among the key issues facing the Ukrainian economy are decreased production levels, increased unemployment, weakened stability of public finances, and threats to currency stability.

To restore Ukraine after the war, substantial global financial efforts will be required. The EU is already making a significant contribution to

enhancing the current resilience of the Ukrainian economy, but in the medium and long term, greater support will be needed for the restoration of a free and prosperous country firmly oriented towards European values and securely integrated into the European and global economies, as well as for supporting its European path.

Since the start of the aggressive war by Russia, the EU, member states, and European financial institutions, guided by the "Team Europe" approach, have allocated around EUR 53 billion in financial, humanitarian, emergency, budgetary, and military support (EU Solidarity with Ukraine, 2023). While the Russian aggressive war continues, the overall needs for Ukraine's recovery are not yet known. Nevertheless, it is important to project the main constructive directions of these international efforts already.

On June 20, 2023, the European Commission proposed the establishment of a mechanism to support the recovery, reconstruction, and modernization of Ukraine. The Ukraine Support Mechanism will be a special financial instrument that will provide consistent and predictable support to Ukraine for the years 2024–2027 (Figure 3).

Directions		
<p>Support for the "Ukraine Recovery Plan"</p> <ul style="list-style-type: none"> • Support from the EU "Recovery Plan for Ukraine" through Grants and Budgetary Credits. • Support in Addressing Urgent Financial Needs of the Country to Maintain Macroeconomic Stability. • Investment Support to Facilitate Recovery, Reconstruction, and Modernization. • Support for Reforms Necessary for EU Accession 	<p>Investment Framework for Ukraine</p> <ul style="list-style-type: none"> • Risk Mitigation Mechanism Accessible to Investors through International Financial Institutions to Facilitate Investment Deployment and Attraction of New Investors. • Support for the Ukrainian Private Sector 	<p>Support programs</p> <ul style="list-style-type: none"> • Government Technical Assistance (EU Acquis, Structural Reforms). • Enhancement of Capacity of State Authorities at National, Regional, and Local Levels. • Civil Society Support

Figure 3. Directions for Supporting the Ukrainian Economy by the EU

Source: compiled by the authors according to (EU Solidarity with Ukraine, 2023).

The Mechanism for Supporting Ukraine, with a budget of up to 50 billion euros in the form of grants and credits, will bolster Ukraine's efforts to maintain macrofinancial stability and promote the country's reconstruction and modernization, while simultaneously implementing key reforms on the path towards EU accession (EU Solidarity with Ukraine, 2023).

International support plays a pivotal role in ensuring the resilience of Ukraine's economy, particularly within the context of complex political, economic, and geopolitical circumstances. During the 2023 London Conference on the Reconstruction of Ukraine, the European Commission, the European Investment Bank (EIB), the European Bank for Reconstruction and Development (EBRD), and the International Finance Corporation (IFC) signed agreements totalling over EUR 800 million to mobilize private investments for Ukraine's economic recovery and reconstruction (Ukraine Recovery Conference, 2023). These mentioned agreements, supported by the European Fund for Sustainable Development Plus (EFSD+) (a financial branch of the Neighborhood, Development, and International Cooperation Instrument "Global Europe"), signify the shared international effort to mobilize the private sector for Ukraine's recovery and reconstruction.

Conclusions

Research into the issues of economic resilience indicates that the transformation of approaches to its understanding is influenced by macroeconomic policies, which can either mitigate or exacerbate the consequences of macroeconomic shocks. The concept of economic resilience encompasses three key components: the ability of the economy to avoid, withstand, or recover from the impact of shock events. The degree of resilience to shock impacts depends on the economy's adaptive potential.

The onset of a full-scale war became a unifying experience for both Ukraine and the EU in terms of ensuring the resilience of their economies. Military actions led to the emergence of commodity, economic, migration, fiscal, devaluation, infrastructural shocks, and balance of payments shock. Some of these macroeconomic shocks uncontrollably spilled over to the EU, particularly in terms of commodity, economic, and migration shocks.

An analysis of the GDP per capita based on PPP allowed us to determine that the EU possesses sufficient adaptive potential to restore its economy and counteract shock impacts. Conversely, the Ukrainian economy is highly sensitive to the impact of shock events and is unable to avoid their effects. An examination of the resilience level according to the FM Global methodology indicates that not all EU countries possess sufficient level of resilience. In 2023, the medium resilience level was observed in 9 EU countries: Cyprus (69.8 points), Malta (69.3 points), Slovakia (68.9 points), Romania (68.4 points), Slovenia (67.7 points), Latvia (67.6 points), Croatia (66.8 points), Greece (63.1 points), and Bulgaria (61.2 points). In Ukraine, the level of economic resilience stands at 47.1 points, which is 14.1 points lower than that of Bulgaria.

In the context of the Russian-Ukrainian war, the economy of the EU demonstrated not only a sufficient level of resilience to new challenges but also mobilized significant financial resources to support Ukraine. International financial assistance remains a key direction and source of ensuring

the resilience of the Ukrainian economy, without which other directions would be impossible to implement, in particular:

- stable inflow of investments into the economy to fund infrastructure projects (reconstruction of energy systems, roads and bridges, demining of territories, restoration of cities and villages);
- reconstruction of the industrial sector on an innovative basis;
- stable functioning of the financial system;
- balanced state finances (social expenditures and tax revenues);
- support for civil society and social structure.

The prospects for further scientific research in this direction are related to justifying mechanisms for ensuring the resilience of Ukraine's economy in the context of demographic changes.

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