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Integration of Sustainable Development into International Marketing: Developing a Mechanism for Enhancing Enterprise Economic Potential in Wartime Conditions

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ABSTRACT:
Secondary processes in hospitals are causing a major part of hospitals' carbon footprint. At the same time, initiating change towards sustainability is more difficult in secondary processes than in other processes: Often, they are not under the complete control of hospitals and involve other actors, such as service providers or purchasing companies.
The current research aims to shed light on factors influencing change in secondary processes at the example of hospitals in Germany. Building on a framework that distinguishes change factors on a micro-, meso- and macro-level, it is analysed which aspects are positively or negatively influencing change towards more sustainability.
To this end, qualitative interviews with eleven experts from hospitals and service providers have been conducted and results have been assigned to the three levels of change. Results underline the importance of inter-organisational collaboration and the design of structures and processes to establish regular cooperation and coordination. They also show that business relationships between hospitals and service providers are rather cost-related than transformational. Sustainability offers the opportunity to modify existing roles and develop future-proof businesses.
The paper contributes to existing research by focusing on multi-organisational perspectives. On a practical level, it supports hospitals in designing their change strategies and processes jointly and in collaboration with other parties that are part of secondary processes.
This study addresses the integration of sustainable development principles into international marketing with the aim of creating a mechanism for enhancing the economic potential of enterprises under wartime conditions. The relevance of the topic stems from the profound barriers and challenges caused by the full-scale war in Ukraine, which has significantly impacted business operations. The paper examines how enterprises are adapting to the new environment, particularly through the implementation of sustainability strategies, ecological responsibility, and social orientation in their international marketing activities. An analysis of export dynamics among Ukrainian enterprises from 2020 to 2024 across product groups is presented, highlighting key trends and priority development

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directions. The study explores the impact of geopolitical transformations on commodity markets, especially in the mining and mineral processing sectors, and identifies promising product subgroups for restoring economic potential. Emphasis is placed on the importance of comprehensively assessing the social and environmental impact of business activities in the development of international strategies, underscoring that sustainability integration is a critical condition for enterprise resilience and competitiveness, even in times of war.

The findings have practical value for Ukrainian companies engaged in the extraction and export of ores, slag, and ash. The results facilitate the establishment of clear priorities for market selection, the development of more effective market entry strategies under wartime risk, and the mitigation of adverse effects from global economic and political shifts.

Special attention is given to the importance of strategic partnerships with key importers, the development of specialized logistics infrastructure, active participation in international trade fairs and forums, and the integration of sustainability principles into operational processes. It is recommended that companies develop tailored market entry strategies for each target country, considering economic dynamics, political stability, trade openness, corruption risk, and logistical capacity.

Under wartime conditions, it is crucial for Ukrainian producers not only to adapt to the new realities of international trade but also to proactively establish new distribution channels. The integration of sustainability into international marketing will strengthen the global reputation of Ukrainian enterprises, attract investment, and enhance the country's overall economic security.

The results of this research confirm that the Netherlands, South Korea, Japan, and the United States represent the most promising export markets for the product subgroup "26 Ores, Slag and Ash" in the medium term, provided effective adaptation to the new conditions of the global economy and implementation of a sustainable international development strategy.

Keywords: sustainable development integration, international marketing, economic potential of enterprises, sustainability strategies, export activity dynamics, geopolitical changes, economic recovery, enterprise competitiveness, wartime risks, logistics infrastructure, economic dynamics, trade freedom, logistics capacity, economic security

1. Introduction

Sustainable development has become increasingly significant in the context of modern geopolitical and economic transformations, including its growing importance in international marketing. Today, many companies and brands are shifting their focus beyond profit generation to include social responsibility, rational use of natural resources, and environmental protection. In international marketing, sustainable development can influence consumer behavior, particularly among those who are more aware and loyal to brands committed to sustainability. Furthermore, the long-term economic resilience of companies may increasingly depend on their alignment with sustainability principles. As such, sustainable development in international marketing not only contributes to preserving natural resources and safeguarding the environment but also serves as a critical factor in shaping competitive advantage.

Amid the ongoing war and global instability, both Ukrainian and international markets are experiencing significant pressure, presenting serious challenges to the economic potential of enterprises. Businesses face rising costs associated with ensuring safety, along with risks of losing production capacity. One of the most urgent priorities is the preservation of economic potential, which is essential for the sustainable operation of enterprises under wartime conditions. This involves not only maintaining financial stability

but also developing the agility to respond to abrupt changes in the political and military landscape. Enterprises must identify their core priorities, optimize internal processes, and respond swiftly and effectively to emerging security threats. Additional wartime challenges include reduced demand for goods, infrastructure destruction, increased security expenditures, and risks to human capital. To function successfully under such circumstances, businesses must employ flexible management strategies, continuously monitor markets, and actively explore new growth opportunities. Consequently, recognizing the relevance of economic potential maintenance under wartime conditions is critical to preserving national economic stability and competitiveness in the face of adversity.

The integration of sustainable development into international marketing and the formation of mechanisms for strengthening enterprise economic potential during wartime have become especially urgent. This urgency is driven by the numerous barriers and disruptions caused by the war in Ukraine, which have severely impacted business operations. Effective resolution of these issues, combined with the implementation of sustainability strategies and international marketing approaches, can contribute significantly to rebuilding Ukraine's economy and ensuring the long-term development of enterprises.

Markets for essential goods — such as food, medical supplies, and hygiene products — tend to demonstrate the highest resilience to geopolitical and economic disruptions triggered by armed conflict. These products remain in constant demand even during wartime. In contrast, markets for non-essential goods, such as luxury items, entertainment, and high-tech products, have experienced a decline in demand due to increased security costs and operational threats.

According to global experience, the sectors most capable of supporting economic recovery during and after conflict include construction and infrastructure projects, the restoration of agriculture and manufacturing, as well as the energy and resource sectors. Reviving these industries will play a vital role in rebuilding the national economy and enhancing economic potential in the post-war period.

The IT and education sectors are relatively resilient to wartime challenges, as they rely not on physical infrastructure but on human capital and digital tools. Supporting these sectors can become a key strategy for preserving the country's intellectual potential, enhancing its competitiveness, and laying the groundwork for post-war recovery.

2. Theoretical Background

Various aspects of sustainable development issues have been explored in the works of Khanov O. (2017), Skibin S. (2017), Omarov Sh. (2014), Stelmashchuk A. (2017), Stelmashchuk Y. (2017), Buriak Y. (2022), Redko K. (2022), Chornovol A. (2022), Orlenko O. (2022), Krykavskyi Y. (2018), Mashchak N. (2018), Khaled R. (2017), and Mohamed E. (2017), among others. While recognizing the significance of these contributions and the value of their findings, it is necessary to emphasize that both the theoretical foundations of sustainable development and its applied aspects, particularly concerning tools and mechanisms for its implementation under geopolitical and economic disruptions, require further elaboration.

We also acknowledge scholars who have focused on the integration of sustainable development in international marketing, including Honchar M. (2025), Zelenevych V. (2025), Vikarchuk O. (2016), Kotler P. (2016), Keller K. (2016), Hrod M. (2023), Sadchenko O. (2025), Haivoronska I. (2025), and Shmahina V. (2025), among others.

Theoretical and methodological foundations for studying the management of economic potential, including in commercial enterprises, have been developed by both domestic and international scholars, such as Kozachenko S. (2020), Krasnokutska N. (2010), Vaskivska K. (2020), Lozinska L. (2020), Halimuk Y. (2020), and Loi A. (2023).

In comparison with existing approaches to post-crisis economic recovery, which predominantly focus on the restoration of production, financial stabilization, or infrastructure projects (Kozachenko, 2020; Lozinska, 2020), the findings of this study highlight the potential of sustainable marketing as a key component of business resilience during wartime. Specifically, we emphasize that brands integrating sustainability values into their international marketing strategies are better positioned to retain consumer trust, maintain export capabilities, and adapt to new cultural and regulatory environments.

The issue of integrating sustainable development into international marketing and designing mechanisms for developing enterprise economic potential in wartime involves the creation of sustainable development concepts, advertising, and sales strategies at the global level, while accounting for cultural, economic, and political differences across countries. A well-formulated mechanism for developing economic potential enables enterprises to enhance efficiency and resilience in wartime, improve economic stability, and establish productive international business relations. To conduct such research, it is crucial to consider the impact of war on the opportunities and strategies of domestic enterprises in terms of sustainable development integration and the growth of economic potential under such challenging conditions.

This perspective broadens the traditional understanding of post-crisis recovery by adding a marketing dimension. Thus, the theoretical contribution of this study lies in connecting concepts of sustainable development, international marketing, and adaptation strategies to external shocks. In our view, this opens up new avenues for researching enterprise resilience in volatile conditions.

3. Results of the Study

The integration of sustainable development principles into international marketing strategies represents a critical process that contributes to economic growth, social responsibility, and environmental protection, while also promoting the development of successful and ethical business practices. This integration involves several key stages: assessing the environmental and societal impact of business operations, defining goals and objectives aligned with sustainable development, incorporating these into marketing strategies, monitoring progress toward sustainability goals, and ensuring responsible business conduct in line with sustainability principles. Embedding sustainability into international marketing enables companies to attract more consumers, secure long-term profitability, and enhance their competitiveness in the global marketplace (Figure 1).

Figure 1. The process of integrating sustainable development principles into international marketing strategies

The mechanism for assessing the impact of business activities on the environment and society, as part of the integration of sustainability into international marketing, includes evaluating the environmental and social footprint of corporate operations in accordance with sustainability criteria. This approach extends beyond economic benefit and encompasses ecological balance and corporate social responsibility. Enterprises are expected to continuously evaluate the consequences of their actions and implement mitigation strategies to reduce negative impacts. Furthermore, incorporating sustainability into international marketing requires that firms account for environmental and social factors when designing and promoting their goods and services abroad. This fosters long-term business growth while contributing to environmental conservation and the overall improvement of societal well-being.

The identification of goals and objectives for advancing sustainable development within international marketing strategies is a fundamental step in supporting the economic potential of enterprises. This process begins with prioritizing key sustainability goals, such as environmental protection, social equity, and economic resilience. Companies must then translate these goals into specific, actionable objectives tailored to their strategic priorities, the structure of the international market, and the characteristics of their target audiences. For example, this may include developing products and services that meet the highest sustainability standards or promoting ecological awareness through marketing campaigns. The integration of sustainability principles into marketing strategies enables businesses not only to retain competitiveness but also to generate positive social and environmental impact and contribute to long-term transformative change.

Integrating sustainability into international marketing strategies occurs through the fusion of conventional marketing approaches with sustainable development principles. This hybrid model aims to establish an effective business framework that not only boosts export performance but also safeguards the environment and improves consumer well-being in international markets. The process requires the implementation of innovative approaches to sales and value delivery that support sustainable development. Furthermore,

it demands continuous improvement and adaptation of marketing practices to evolving consumer expectations and global market standards. This enhances firms' competitiveness in new international markets, facilitates customer acquisition, and positively shapes corporate reputation among stakeholders and investors.

Finally, monitoring progress toward sustainability goals and promoting responsible business practices on global markets involves the systematic assessment of performance against defined sustainability indicators and the consistent incorporation of ethical standards into decision-making processes. Effective integration requires businesses to balance economic, environmental, and social considerations in their operations. Companies must evaluate their ecological impact, contribute to consumer and partner well-being, and ensure financial viability. Additionally, fostering transparency, accountability, and ethical conduct is essential for building successful international marketing strategies rooted in sustainable development principles.

Summarizing the stages of integrating sustainable development principles into international marketing strategies, it can be concluded that the success of such integration significantly contributes to the development of a mechanism for enhancing a company's economic potential, even under conflict conditions. The implementation of sustainability principles, such as balanced resource use, reduction of environmental impact, and the promotion of social responsibility, enables enterprises to maintain operational stability and continue functioning effectively despite external disruptions. Embedding sustainable development into marketing strategies also strengthens a company's international image, potentially increasing its competitiveness and attracting new customers.

Moreover, consideration of sustainability criteria allows businesses to reduce operational costs, optimize production processes, and improve overall profitability. Therefore, the integration of sustainable development principles into international marketing strategies is a critical component in building a resilient and adaptive economic potential development mechanism, capable of withstanding external environmental fluctuations, including wartime conditions.

A dynamic analysis of Ukraine's export activity over the 2020–2024 period was conducted to assess the development of business economic potential, accounting for market fluctuations caused by the full-scale invasion of Ukraine and disaggregated by commodity structure (Table 1, Figure 1).

Table 1. Dynamics of exports from Ukraine, 2020–2024, thousand USD

	Export Volume from Ukraine					Absolute Deviation, thousand USD		
Commodity Groups/	2020	2021	2022	2023	2024	2022/ 2021	2023/ 2022	2024/ 2023
1	2	3	4	5	6	7	8	9
II. Products of plant origin	11883238,0	15538028,4	13472682,9	11716693,9	13527637,7	-2065345,4	-1755989,0	1810943,8
III. 15 Animal or vegetable fats and oils	5746921,7	7037234,2	5948570,7	5649063,6	5756425,8	-1088663,5	-299507,2	107362,2
XV. Base metals and articles thereof	9029989,2	15990999,1	6003461,6	3916297,7	4456346,9	-9987537,5	-2087163,9	540049,2
IV. Prepared foodstuffs	3361028,2	3788474,9	2496887,0	3271695,0	3755722,9	-1291588,0	774808,1	484027,9

V. Mineral products	5331642,8	8414372,7	4322523,1	2415050,9	3432356,1	-4091849,6	-1907472,2	1017305,2
XVI. Machinery, equipment and mechanical appliances; electrical equipment	4486636,6	5260165,9	3732260,2	2621475,5	3142905,5	-1527905,7	-1110784,6	521429,9
I. Live animals; animal products	1188164,7	1345194,8	1471818,7	1363232,6	1643521,5	126623,8	-108586,1	280288,9
IX. Wood and articles of wood	1411557,3	2005802,9	1884876,0	1493430,7	1465659,5	-120927,0	-391445,2	-27771,3
XX. Miscellaneous manufactured articles	1000840,1	1249974,3	972420,0	934797,0	1061082,4	-277554,3	-37622,9	126285,4
VI. Products of the chemical industry and related sectors	2020105,1	2815603,7	1286753,2	888199,3	973130,1	-1528850,5	-398553,9	84930,8
XI. Textile materials and textile products	778247,7	864984,6	671517,5	354321,8	610921,2	-193467,1	-317195,7	256599,4
XVII. Vehicles, aircraft, vessels	756556,0	676435,9	360503,0	343320,9	431747,3	-315932,9	-17182,0	88426,4
VII. Plastics and articles thereof; polymeric materials	682674,9	1104189,8	470143,6	323433,2	348751,1	-634046,2	-146710,4	25317,9
XIII. Articles of stone, plaster, cement	443248,6	568403,9	300608,7	295920,6	326033,2	-267795,1	-4688,2	30112,6
X. Pulp of wood or other fibrous cellulosic material	403041,5	534033,5	277513,2	229582,4	239829,2	-256520,3	-47930,7	10246,8
XII. Footwear, headgear, umbrellas	165474,4	189860,9	175073,1	66867,5	145120,2	-14787,8	-108205,6	78252,7
VIII. Raw hides and skins, leather	134656,7	165539,7	104483,1	78118,9	105532,1	-61056,6	-26364,2	27413,1
XVIII. Optical, photographic instruments and apparatus	162611,6	170955,1	121031,3	103993,7	104139,8	-49923,8	-17037,5	146,0
XIV. 71 Natural or cultured pearls, precious or semi-precious stones	114389,0	128546,7	40987,8	14489,2	43411,8	-87558,9	-26498,6	28922,6
XXI. 97 Works of art	558,0	2671,4	1113,3	1115,9	15155,0	-1558,1	2,5	14039,1
XIX. 93 Arms and ammunition; parts and accessories thereof				2785,1	1833,0	0,0	2785,1	-952,1
Total	49191824,5	68072328,8	44135592,5	36182902,9	41733116,1			

Source: generated based on State Statistics Service of Ukraine [2025]

The analysis of Ukraine's exports over 2020–2024 reveals that export volumes peaked in 2021, reaching USD 68.1 billion. The most challenging period was 2023, when

exports dropped to USD 36.2 billion, likely due to war-related disruptions, including logistics issues and trade restrictions. However, in 2024, export activity demonstrated signs of recovery, with export volumes increasing by USD 5.5 billion compared to 2023, confirming a partial rebound of Ukraine's business sector.

It is worth noting that the analysis of the economic potential of Ukrainian enterprises is largely based on export data. This approach allows for the identification of macroeconomic trends and dynamics of changes during wartime conditions, but it has limitations in terms of representativeness for enterprises operating exclusively in the domestic market. In future studies, we will provide a more comprehensive assessment of the integration of sustainable development and economic resilience of Ukrainian businesses in times of war.

Agro-export continues to keep Ukraine among global leaders, while metallurgy and minerals remain the most severely affected sectors. The year 2024 demonstrates signs of recovery in the economic potential of Ukrainian enterprises, although the pre-war levels of 2021 have not yet been fully restored (Figure 2). Sharp fluctuations observed in niche categories (such as works of art or arms) are likely to be isolated cases or driven by political and economic factors. Export diversification is essential to restoring the economic resilience of Ukrainian enterprises under crisis conditions.

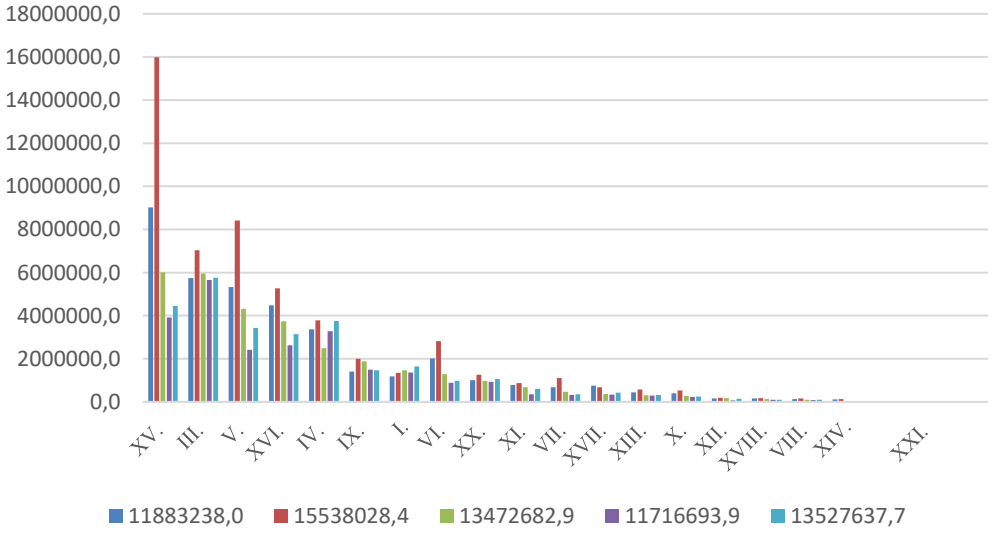

Figure 2. Dynamics of Ukraine's export activity by product structure, 2020–2024.

An analysis of absolute export deviations by product category from 2021 to 2024 reveals trends in changes in export volumes in monetary terms (USD thousands).

The product group **"II. Products of plant origin" showed** two consecutive years of decline, likely due to the war, disruptions in logistics, and lower crop yields. In 2024, a revival of export activity in this category is observed, suggesting partial stabilization in the agricultural sector and logistics.

The product group **"III. Animal or vegetable fats and oils" indicates** a slowdown in the rate of decline, with positive growth recorded in 2024. This may be attributed to the recovery of oil exports, particularly sunflower oil.

The product group **"XV. Base metals and articles thereof"** experienced a dramatic decline in export volumes in 2022, likely due to the destruction of industrial facilities in Eastern Ukraine and the disruption of supply chains. In 2024, a modest recovery in export activity was recorded for this group, although still far below pre-war levels.

The group **"IV. Prepared foodstuffs"** has demonstrated positive export dynamics for two consecutive years following a decline in 2022. This may be linked to the expansion of domestic food processing and increased demand for packaged food abroad.

The product group "V. Mineral products" experienced a significant decline in export volumes during 2022–2023 due to the impact of military actions, particularly in the Donbas region, which is home to a large number of industrial enterprises. In 2021, as Ukrainian enterprises began to recover their economic potential following the COVID-19 crisis, this product group ranked third in terms of total export volume from Ukraine. Although 2024 shows signs of export recovery for Ukrainian industrial enterprises, the "V. Mineral products" group has not returned to the top three among national exporters.

Similarly, the product group "XVI. Machinery, equipment, and electrical engineering" exhibited a decline in export volumes throughout 2022–2023. A revival of export activity was recorded only in 2024, potentially as a result of partial relocation or reactivation of production facilities.

The product group "I. Live animals and animal products" exhibited unstable export dynamics between 2022 and 2023. In 2024, however, export activity among Ukrainian producers in this category increased, likely due to improved conditions for the export of dairy and meat products.

The product group **"IX. Wood and wood products"** has demonstrated a three-year decline in export volumes. This may be the result of restrictions or bans on roundwood exports or a decrease in logging volumes.

The results of the export activity analysis of Ukrainian enterprises by product groups revealed that **producers of non-precious metals and mineral products suffered the most**. However, most product categories showed positive deviations in 2024, indicating a recovery in the economic potential of Ukrainian enterprises. Manufacturers of processed food products have demonstrated two consecutive years of export growth, suggesting a sustained recovery of economic capacity, as evidenced by the positive export trends in 2023 and 2024. The situation with wood and wood products remains challenging; it is the only product category showing a consistent decline in export volumes, which complicates any assertion of recovery in the economic potential of Ukrainian enterprises operating in this sector.

Using the product group "V. Mineral products" as a case study, we assess the performance of enterprises involved in the extraction and processing of mineral resources. This evaluation includes indicators such as production volume, product quality, technological efficiency, and the enterprises' environmental performance. Only through a comprehensive assessment of these factors can an objective conclusion be drawn regarding the operations of enterprises in the "Mineral products" sector, identifying their

strengths and weaknesses. Furthermore, it enables the analysis of their impact on the environment and society in accordance with the principles of sustainable development, and facilitates the formation of a mechanism for enhancing their economic potential and strategies to increase export activity in new international markets.

Table 2. Export dynamics of Ukraine in the "V. Mineral Products" category, by subgroup, 2020–2024 and January–February 2025, USD million, %

	2020		2021		2022		2023		2024		1-2 міс. 2025	
	Export Volume, thousand USD	% of Total Exports of Ukraine	Export Volume, thousand USD	% of Total Exports of Ukraine	Export Volume, thousand USD	% of Total Exports of Ukraine	Export Volume, thousand USD	% of Total Exports of Ukraine	Export Volume, thousand USD	% of Total Exports of Ukraine	Export Volume, thousand USD	% of Total Exports of Ukraine
Total exports of Ukraine	**49191,8**		**68072,3**		**44135,5**		**36182,9**		**41733,1**		**6288,1**	
V. Mineral products	5331,6	10,84	8414,3	12,36	4322,5	9,79	2415,1	6,67	3432,4	8,22	536,2	8,53
25 Salt; sulfur; earths and stone	355,7	0,72	510,5	0,75	202,7	0,46	152,7	0,42	290	0,69	38,2	0,61
26 Ores, slag and ash	4420,7	8,99	7119,6	10,46	3079,7	6,98	1870	5,17	2940,8	7,05	461,7	7,34
27 Mineral fuels; oils and products of their distillation	555,1	1,13	784,3	1,15	1040,1	2,36	392,3	1,08	201,5	0,48	36,3	0,58

Source: generated based on TRADE MAP [2025]

An analysis of the export dynamics of Ukraine in the commodity group "V. Mineral products" for the period 2020–2024 and January–February 2025 by subgroups indicates that the export peak was recorded in 2021 — USD 8,414.3 million (12.36% of total Ukrainian exports). The lowest export volume was in 2023 — USD 2,415.1 million (6.67%). Some recovery was observed in 2024, with exports rising to USD 3,432.4 million (8.22%), although this remained significantly below the peak level. In January–February 2025, Ukrainian businesses demonstrated renewed export activity: exports of "V. Mineral products" reached USD 536.2 million (8.53%), which is a relatively high share and may indicate the potential for export growth in 2025.

The subgroup dynamics reveal that subgroup 25 "Salt, sulfur, earths and stone" made the smallest contribution to Ukraine's total exports among the mineral subgroups. Export volumes fluctuated between USD 152.7 and 510.5 million, with a slight increase to USD 290 million in 2024. The export share remained stable but low, around 0.4–0.7%.

Subgroup 26 "Ores, slag and ash" is the core component of Ukraine's mineral product exports. The peak in 2021 reached USD 7,119.6 million (10.46% of total exports). A sharp decline followed in 2022–2023, likely due to the war and related logistical disruptions. Export activity began to recover in 2024, reaching USD 2,940.8 million

(7.05%). In January–February 2025, exports continued to rise, totaling USD 461.7 million (7.34%).

Subgroup 27 "Mineral fuels, oils and products of their distillation" is the most volatile commodity category. In 2022, exports rose to USD 1,040.1 million (2.36% of Ukraine's total exports), followed by a sharp decline. In 2024, Ukrainian exports of this subgroup amounted to only USD 201.5 million (0.48%). However, during the first two months of 2025, its relative share increased slightly to 0.58%.

In summary, the analysis of export volumes in the "V. Mineral Products" group reveals a significant decline after 2021, reflecting the impact of full-scale war and logistical disruptions (particularly the blockade of seaports). The partial recovery observed in 2024 and early 2025 indicates market adaptation, likely through the development of alternative logistical routes. Subgroup 26 ("Ores, slag and ash") remains the core driver of the overall dynamics within Group V, determining both export volume and strategic relevance. Subgroups 25 and 27 have a comparatively lower economic impact but may still contribute to export diversification.

Ukraine's exports in the "26. Ores, slag and ash" subgroup account for 0.6% of global exports in this category, placing the country 26th in the world. The average distance to importing countries is 1,472 km, with an export concentration index of 0.18.

The export dynamics of Ukraine for the commodity subgroup "26 Ores, slag and ash" during 2020–2024 are analyzed by subcategories (Table 3).

Table 3. Export dynamics of Ukraine for the commodity subgroup "26 Ores, slag and ash" by subcategories, 2020–2024, USD thousand

Code	Commodity subgroup name	Export volume, thousand USD					Recovery deviation, %			
		2020	2021	2022	2023	2024	2021/ 2020	2022/ 2021	2023/ 2022	2024/ 2023
2601	Iron ores and concentrates, including roasted iron pyrites	4239,3	6899,8	2913,6	1766,9	2803,2	38,6	-136,8	-64,9	37,0
2614	Titanium ores and concentrates	138,3	161,9	131,8	82,1	82,5	14,6	-22,8	-60,7	0,6
2618	Granulated slag ("slag sand") from the manufacture of iron or steel	2,5	2,3	6,5	9,6	23,1	-11,5	64,9	32,7	58,3
2615	Niobium, tantalum, vanadium or zirconium ores and concentrates	20,6	41,5	21,1	5,2	14,2	50,5	-96,7	-302,9	63,2
2602	Manganese ores and concentrates, including ferruginous manganese	10,8	89,0	0,0	0,0	6,6	87,8	-	-	100,0

	ores and concentrates with a manganese content of 20% or more, calculated on the dry weight									
2620	Slag, ash and residues (other than those from the manufacture of iron or steel) containing metals, arsenic or their compounds	7,1	10,2	8,7	5,1	6,4	30,8	-17,8	-71,4	20,5
2619	Slag, scalings and other waste from the manufacture of iron or steel (excluding granulated)	332,0	1,9	753,0	115,0	2,9	-17845,9	99,8	-554,8	-3907,0
2616	Ores and concentrates of precious metals	0,0	0,0	94,0	0,0	1,2	-	100,0	-	100,0
2617	Ores and concentrates (excluding those of iron, manganese, copper, nickel, cobalt, aluminium, lead, zinc, ...)	1,1	1,3	1,3	624,0	616,0	18,5	-1,9	99,8	-1,3
2621	Slag and ash, including kelp ash (Laminaria); ash and residues from the incineration of municipal waste	379,0	386,0	155,0	403,0	199,0	1,8	-149,0	61,5	-102,5
2603	Copper ores and concentrates	0,0	0,0	0,0	0,0	0,0	-	-	-	-
2604	Nickel ores and concentrates	0,0	0,0	0,0	0,0	0,0	-	-	-	-
2605	Cobalt ores and concentrates	0,0	0,0	0,0	0,0	0,0	-	-	-	-
2606	Aluminium ores and concentrates	41,0	70,0	0,0	0,0	0,0	41,4	-	-	-

2607	Lead ores and concentrates	0,0	0,0	0,0	0,0	0,0	-	-	-	-
2608	Zinc ores and concentrates	0,0	0,0	0,0	0,0	0,0	-	-	-	-
2610	Chromium ores and concentrates	275,0	122,0	10,0	0,0	0,0	-125,4	-1120,0	-	-
2611	Tungsten ores and concentrates	0,0	0,0	56,0	0,0	0,0	-	100,0	-	-
2613	Molybdenum ores and concentrates	7,0	19,0	13,0	6,0	0,0	63,2	-46,2	-116,7	-

Source: generated based on TRADE MAP [2025]

This section presents an analysis of Table 3, focusing on the dynamics of Ukraine's exports of ores and slags, disaggregated by commodity subgroups, export volumes, and annual changes. The primary export product is iron ore (2601), which significantly exceeds other subgroups in terms of export volume, although it experienced a sharp decline in 2022–2023, followed by partial recovery in 2024. Most subgroups demonstrate high year-to-year volatility, with fluctuations sometimes reaching from -300% to over +100%.

Many commodity subgroups within section "26 Ores, Slag and Ash" show zero or near-zero exports for several consecutive years, indicating either low global demand or unstable production and availability. Subgroups that suffered sharp declines include: "2601 Iron Ore," "2615 Niobium, Tantalum, Zirconium," "2610 Chromium Ores," and "2619 Slag and Waste from Steel Production." A positive trend was recorded in subgroup "2618 Granulated Slag," which increased from USD 2.5 thousand in 2020 to USD 23.1 thousand in 2024, demonstrating consistent export growth from Ukraine, with a 58.3% year-on-year increase in 2024 compared to 2023.

Commodity groups related to copper, nickel, cobalt, lead, and zinc show zero export volumes throughout the entire study period. This may indicate a lack of extraction activity. In contrast, Ukraine possesses 53 deposits of iron ore, of which 30 are currently being exploited, accounting for 58.6% of proven reserves. Rich iron ores and ferruginous quartzites are extracted from deposits located in the Kryvyi Rih, Kremenchuk, and Bilozirsk ore basins — all situated in front-line regions of Ukraine, which pose significant safety risks for mining operations during wartime

An exceptional surge in 2022 was observed in the commodity subgroup "2616 Precious Metals," with exports reaching USD 94 thousand, followed by another sharp decline.

Export dynamics are heavily influenced by external market conditions, infrastructure accessibility, and geopolitical factors. Time-series analysis of Ukrainian business export activity suggests several commodity subgroups with the highest potential for contributing to the restoration of economic capacity, even in wartime conditions. These include "2601 Iron Ore," "2618 Granulated Slag," and "2617 Other Ores."

In 2024, Ukrainian mining enterprises primarily concentrated their exports on iron ores, which accounted for the dominant share (Figure 3). Other categories lagged significantly behind, although non-ferrous metal ores (such as titanium and others) also

held a modest share. Despite their potentially high market value, precious and rare earth metals were exported in very limited quantities.

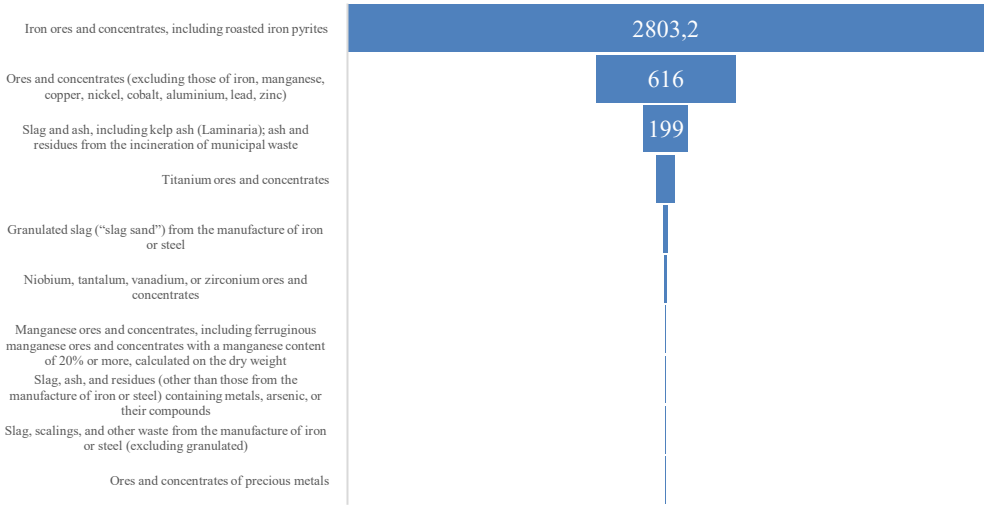

Figure 3. Structure of Ukraine's exports by commodity subgroup "26 Ores, Slag and Ash" in 2024, thousand USD

The top export positions were taken by iron ores and concentrates, including roasted pyrites, 2,803.2 thousand USD. This is the largest item in Ukraine's export structure within the "26 Ores, Slag and Ash" subgroup, with a significant margin. It accounts for the dominant share of exports in this segment.

The export volume of "Ores and concentrates (excluding iron, titanium, uranium, and thorium, etc.)" amounted to 616 thousand USD. This is also a notable item, although several times smaller than iron ore exports. The export volume for the "Slag and ash" subgroup was 199 thousand USD. This is also a significant position, used in construction or as a secondary raw material.

The data clearly confirms the trends: the "2601 Iron ore" subgroup maintains a key role in restoring the economic potential of Ukrainian enterprises that lost business activity in domestic and international markets due to the full-scale invasion of Ukraine by the aggressor.

The TOP-10 importer markets for the "2601 Iron ore" subgroup from Ukraine are presented below, along with an analysis of the import volume dynamics of Ukrainian iron ore over the period 2020–2024 (see Table 4)

Table 4. Dynamics of imports for the commodity subgroup "26 Ores, Slag and Ash", TOP-10 import partners of Ukraine, 2020–2024, thousand USD

Import Partner Markets	Export Volume from Ukraine, thousand USD					Relative Deviation, %			
	2020	2021	2022	2023	2024	2021/ 2020	2022/ 2021	2023/ 2022	2024/ 2023
World	4239318	6899810	2913579	1766906	2803206	62,8	-57,8	-39,4	58,7
China	2487189	2891184	379462	87512	1022259	16,2	-86,9	-76,9	1068,1

Poland	372653	551479	480228	345684	483989	48,0	-12,9	-28,0	40,0
Slovakia	86775	476330	560074	501604	480636	448,9	17,6	-10,4	-4,2
Czech Republic	299826	665794	504313	348703	221178	122,1	-24,3	-30,9	-36,6
Austria	294777	537558	410183	231808	216513	82,4	-23,7	-43,5	-6,6
Turkey	75256	227718	25567	289	95150	202,6	-88,8	-98,9	32823,9
Germany	117493	280450	25697	11	64088	138,7	-90,8	-100,0	582518,2
Serbia	56392	96131	75006	71205	61446	70,5	-22,0	-5,1	-13,7
Romania	86185	204424	200587	154398	55831	137,2	-1,9	-23,0	-63,8
Italy	21072	68602	7254	7601	53674	225,6	-89,4	4,8	606,1

Source: generated based on TRADE MAP [2025]

The global export volume of the "26 Ores, Slag and Ash" commodity subgroup from Ukraine increased sharply in 2021 (+62.8%), followed by a decline in 2022–2023 (especially in 2022: -57.8%), and growth again in 2024 (+58.7%).

The primary cause of such fluctuations is the impact of the 2022 war, as well as changes in logistics and the economy.

China's market saw only a +16.2% growth in 2021, then suffered a catastrophic drop in 2022 (-86.9%), and a further -76.9% in 2023. In 2024, there was a sharp recovery (+1068.1%), likely indicating restored trade channels or increased demand.

Poland's market showed relative stability. After an import increase of +48.0% in 2021, there was a slight decline in 2022 (-12.9%) and again in 2023 (-28.0%). However, 2024 saw a positive trend (+40.0%), confirming Poland's role as a reliable and resilient import partner.

Slovakia experienced a major surge in imports from Ukraine in 2021 (+448.9%), followed by a modest +17.6% in 2022 and a slight decline in 2023–2024 (-10%).

Czechia and Austria demonstrated significant growth in 2021 (over 80–120%) but have shown a consistent decline through to 2024. There is a clear downward trend in trade with these markets.

Turkey's market responded noticeably to changes in Ukraine's economic environment: exports tripled in 2021, then nearly vanished in 2022–2023. In 2024, the import volume of this subgroup from Ukraine surged dramatically (+32,823.9%) after nearly zero activity, suggesting a strong demand rebound.

Germany experienced a similar trend: imports dropped to near zero in 2022–2023, but in 2024, there was a spike of +582,518.2% — a leap from minimal to substantial volumes.

Serbia showed minor fluctuations in import volumes, with overall stable trade in the "26 Ores, Slag and Ash" subgroup from Ukraine, without dramatic changes.

The import volumes of the "26 Ores, slag and ash" commodity subgroup from Ukraine to the Romanian market initially grew in 2021 (+137.2%), stabilized in 2022, followed by a significant decline in 2023 and a sharp drop in 2024 (-63.8%).

The Italian market showed a dramatic increase in the import volume of this commodity subgroup from Ukraine in 2021 (+225.6%), a sharp drop in 2022 (-89.4%),

stabilization in 2023 (+4.8%), and a substantial recovery in 2024 (+606.1%), indicating renewed import activity by Italy as a trade partner of Ukraine.

The war in Ukraine (2022) led to a sharp decline in exports of the "26 Ores, slag and ash" subgroup across nearly all international markets. However, 2024 reveals signs of recovery in foreign trade, particularly with Turkey, China, Germany, and Italy. The Polish and Slovak markets remain the most stable and important export destinations for Ukrainian businesses. Major fluctuations in other markets indicate adjustments in logistics routes and shifts in import policy.

Under these circumstances, a deeper analysis of global trends becomes necessary. For effective planning of further export development in the "26 Ores, slag and ash" subgroup, it is important to study global import volumes of this commodity group (Table 5). This will help identify the most promising international markets for Ukrainian producers, assess demand trends, adapt market entry strategies, and minimize risks associated with changes in the external economic environment.

Table 5. Dynamics of global imports of commodity subgroup "26 Ores, Slag, and Ash", TOP-15 global importers, 2020–2024, thousand USD

Global importer markets	Import volume, thousand USD					Relative change, %			
	2020	2021	2022	2023	2024	2021/2020	2022/2021	2023/2022	2024/2023
World	164519,2	260478,7	186668,0	185621,1	-	58,3	-28,3	-0,6	
China	123732,4	182641,6	128096,6	133756,3	133226,6	47,6	-29,9	4,4	-0,4
Japan	9623,5	17855,0	13825,9	11595,6	11269,5	85,5	-22,6	-16,1	-2,8
Korea	6931,1	12078,9	8920,5	8081,9	8255,8	74,3	-26,1	-9,4	2,2
Germany	3675,6	6970,9	4998,4	4338,0	4204,1	89,7	-28,3	-13,2	-3,1
Taipei	2173,5	4152,9	2851,5	2245,6	2290,1	91,1	-31,3	-21,2	2,0
Vietnam	1495,3	3242,2	1943,7	1862,7	-	116,8	-40,0	-4,2	-
Egypt	916,5	1620,1	1565,9	1627,3	-	76,8	-3,3	3,9	-
Bahrain	783,8	2267,5	1856,6	1600,9	-	189,3	-18,1	-13,8	-
Malaysia	1164,1	1599,0	1702,7	1473,7	1597,4	37,4	6,5	-13,4	8,4
Oman	993,8	1875,6	1552,8	1403,7		88,7	-17,2	-9,6	-
Indonesia	681,9	1543,9	1223,8	1329,9	1519,8	126,4	-20,7	8,7	14,3
France	1234,6	2389,8	1646,9	1130,9	1148,8	93,6	-31,1	-31,3	1,6
Turkey	1051,1	2046,1	1386,1	1110,8	1207,5	94,7	-32,3	-19,9	8,7
United Arab Emirates	678,8	1307,6	1259,4	996,1	-	92,6	-3,7	-20,9	-
Netherlands	832,3	1498,1	1196,4	954,1	1047,7	80,0	-20,1	-20,3	9,8
United States	675,7	1191,6	1046,1	892,7	834,2	76,4	-12,2	-14,7	-6,6

Others	7875, 2	16197, 6	11594, 6	11220, 7		105,7	-28,4	-3,2	0,0

Source: generated based on TRADE MAP [2025]

Analyzing the global import volume of commodity subgroup "26 Ores, Slag, and Ash" among the TOP-15 global importers from 2020 to 2024, we can observe a significant increase in 2021 (+58.3% compared to 2020). In 2022, there was a sharp decline (-28.3%), and 2023 showed a continued downward trend (-0.6%). As of the time of analysis, global data for 2024 were not available.

The largest global importer of the "26 Ores, Slag, and Ash" subgroup is China. The dynamics there mirror the global trend: growth in 2021 (+47.6%), followed by a decline in 2022 (-29.9%), a slight recovery in 2023 (+4.4%), and nearly stable levels in 2024 (-0.4%).

Japan, South Korea, and Germany saw growth in 2021 but experienced steady declines in import volumes in subsequent years. The Taipei market showed a sharp increase in 2021 (+91.1%), followed by a strong decrease in 2022 (-31.3%) and 2023 (-21.2%). In 2024, imports of the "26 Ores, Slag, and Ash" subgroup in Taipei grew by +2%.

Markets such as Vietnam, Bahrain, France, Turkey, the UAE, the Netherlands, and the United States showed increased import volumes in 2021, followed by a decline.

In the Malaysian market, a unique trend was observed: following an increase in imports in 2021, growth continued into 2022 (+6.5%). Although there was a decline in 2023 (-13.4%), imports rose again in 2024 (+8.4%).

In the Indonesian market, there was a noticeable increase in import volumes of the "26 Ores, Slag, and Ash" subgroup in 2021 (+126.4%), followed by a drop in 2022, and then stable growth in both 2023 and 2024.

Thus, we can draw general conclusions about the global import volume of the "26 Ores, Slag, and Ash" subgroup: 2021 saw a sharp global increase in imports across nearly all international markets, likely due to the post-COVID recovery from 2020 restrictions. In 2022, a significant decline occurred, possibly due to economic crises and geopolitical factors (wars, energy crisis). In 2023–2024, the global market for this subgroup stabilized: import volumes either declined slightly or began to recover. The most stable global importers are the markets of China, the United States, and Malaysia.

The war in Ukraine, launched by the Russian Federation in 2022, likely had an impact on global imports of the "26 Ores, Slag, and Ash" commodity group, as Ukraine is a leading exporter in the ores and metals market.

Before the war, Ukraine was one of the world's largest exporters of iron ore, particularly to Europe, China, and other countries. Military actions, destruction of infrastructure (especially Black Sea ports like Mariupol and Odesa), port blockades, and logistical disruptions sharply reduced Ukraine's export capacity. Sanctions on trade with Russia forced many countries to seek new suppliers or cut import volumes of such products from Russia. The war triggered overall instability in global trade, which also impacted raw materials markets. Cargo insurance, shipping costs, and new logistics routes have all increased import expenses, forcing many importers to reduce their purchase volumes. The energy crisis caused by the war (especially due to restricted gas supplies from

Russia) led many industrial enterprises in Europe to scale down or halt operations, which automatically decreased demand for ores and other raw materials.

Thus, the decline in global imports of ores, slag, and ash in 2022 coincides with the start of the full-scale war and reflects its indirect impact on the global economy.

Ukrainian businesses have significant potential for recovery through diversification of export directions, particularly in light of positive trends in markets such as Turkey, China, Germany, and Italy, and stable positions in Poland and Slovakia. It is crucial to adapt strategies to global import trends, which may include expanding into new promising markets such as Japan, South Korea, Vietnam, Egypt, Malaysia, Indonesia, France, the Netherlands, and the United States.

We will now analyze the convergence indicators of the markets of Japan, South Korea, Egypt, Malaysia, Indonesia, France, the Netherlands, and the United States (see Table 6).

Table 6. Evaluation indicators of market convergence for new prospective markets for Ukrainian exporters of commodity group "26 Ores, Slag and Ash"

Indicator / international market	Japan	South Korea	Egypt	Malaysia	Indonesia	France	Netherlands	USA
Economic growth: real GDP growth rate, 2023	1.68	1.36	3.76	3.56	5.05	0,94	0,07	5
Industrial production index compared to the same quarter of the previous year, 2024/2025	0,31	7.00		1.55	4.01	-0,30	2.10	1.34
Household consumption index compared to the same quarter of the previous year, 2023/2024	3.10	2.69	55,73	6.55	6.80	1.76	4.14	5.66
Index of economic freedom	68	73	50	66	64	63	77	70
Availability of seaports or direct logistic routes	5.8	5.5	4.8	5.2	4.3	5.2	6.4	5.6
Political stability/risk	0,95	0,61	-0,87	0,17	-0,4	0,34	0,66	0,03
Freedom from corruption index	83	69	26	48	39	74	88	76
Distance from Ukraine (average: 1299 km)	11929	7543	2396	8243	9533	2692,4	2138,3	9456

Source: generated based on Global Economy [2025]

According to the indicator "Economic growth (real GDP growth rate, 2023)", the best results were shown by the markets of Indonesia (5.05%), the USA (5.0%), and Egypt (3.76%). The lowest growth rates were observed in France (0.94%) and the Netherlands (0.07%). High growth rates serve as a positive signal for Ukrainian exports in the "26 Ores, Slag and Ash" group: it indicates increased construction, manufacturing, and consumption.

According to the "Industrial Production Index (2024/2025)", the highest dynamics were recorded in South Korea (7.00%) and Indonesia (4.01%), while France saw a decline (-0.30%). This is a critical indicator for industrial raw materials, as demand for inputs increases where industry grows.

The "Household Consumption Index (2023/2024)" showed significant growth in Egypt (55.73%). Although more relevant for consumer goods, this also indicates general economic activity. Moderate growth was observed in Malaysia (6.55%), Indonesia (6.80%), and the USA (5.66%).

For the "Economic Freedom Index", leading markets include the Netherlands (77), South Korea (73), and the USA (70), while Egypt scored the lowest (50). Higher economic freedom implies fewer barriers for business and trade.

The "Availability of Seaports/Logistics Routes" indicator highlights excellent logistics in the Netherlands (6.4) and Japan (5.8), while Indonesia scored the lowest (4.3).

In terms of "Political Stability/Risk", high stability was noted in Japan (0.95), South Korea (0.61), and the Netherlands (0.66). Egypt (-0.87) and Indonesia (-0.4) had the lowest scores. Politically unstable markets may introduce additional costs or unforeseen obstacles.

Finally, based on the "Freedom from Corruption Index", the cleanest markets are the Netherlands (88), Japan (83), the USA (76), and France (74). High corruption was reported in Egypt (26) and Indonesia (39).

According to the "Distance from Ukraine" indicator, the nearest markets are the Netherlands (2,138 km), Egypt (2,396 km), and France (2,692 km). The most distant markets include Japan (11,929 km), Indonesia (9,533 km), and the United States (9,456 km). Distance directly affects logistics costs.

Therefore, based on the convergence analysis of new promising markets for Ukrainian exporters in product group "26 Ores, Slag and Ash," it can be concluded that the Dutch market offers an ideal combination of political stability, economic freedom, low corruption, efficient logistics, and geographic proximity. South Korea has a strong economy and industrial base, along with good economic and political stability. Indonesia demonstrates high economic growth and industrial dynamics, although there are risks associated with corruption and instability. Egypt is relatively close and sufficiently developed as a consumer market, but it presents high risks and corruption levels. The U.S. market is economically efficient and stable, but it is geographically distant.

To facilitate a comparative analysis of these markets for Ukrainian exporters in the product group "26 Ores, Slag and Ash," all indicator values are transformed into a unified scoring system (see Table 7).

Table 7. Data normalization and comparison of new international markets for Ukrainian producers of product group "26 Ores, Slag and Ash" using a scoring system

Indicator / international market	Japan	South Korea	Egypt	Malaysia	Indonesia	France	Netherlands	USA
Economic growth: real GDP growth rate, 2023	3	3	5	4	5	2	2	5

Industrial production index compared to the same quarter of the previous year, 2024/2025	3	5	2	2	5	1	2	1
Household consumption index compared to the same quarter of the previous year, 2023/2024	3	2	5	4	4	1	2	4
Index of economic freedom	4	5	3	4	4	4	5	5
Availability of seaports or direct logistics routes	5	4	4	4	3	4	5	4
Political stability/risk	5	5	1	2	1	3	5	3
Freedom from corruption index	5	4	2	3	2	5	5	5
Distance from Ukraine	1	2	5	2	1	5	5	1
Total	29	30	27	25	25	25	31	28

The recovery of international activity among Ukrainian exporters of goods from product group "26 Ores, slag and ash" is possible in markets that received the highest convergence scores: the Netherlands (31 points), South Korea (30 points), Japan (29 points), and the USA (28 points).

The Netherlands scored the highest due to a high level of economic freedom, freedom from corruption, and availability of seaports. Despite the long distance, the Netherlands boasts first-class logistics and is a very favorable market for the reactivation of trade by Ukrainian enterprises.

The South Korean market is characterized by high industrial output, strong economic growth, exceptional political stability, and direct interest in raw materials for metallurgy. The distance is shorter than to Western Europe, but logistics is more complicated due to maritime routing specifics.

The Japanese market is notable for its high freedom index, low corruption, stability, and a powerful industrial base in need of raw material imports. Although logistics may be more challenging, Japan actively engages with external suppliers.

The U.S. market shows high demand for resources driven by a growing metallurgy sector. Although the distance is considerable, the country has a very strong port and international trade infrastructure. Political and economic stability make it a favorable market for concluding long-term contracts.

Ukrainian producers of the "26 Ores, Slag and Ash" commodity group should primarily focus on the markets of the Netherlands, South Korea, Japan, and the USA when developing mechanisms for restoring enterprise economic potential during wartime. These markets offer the most favorable combination of economic, political, and logistical conditions for Ukrainian exports.

Incorporating sustainable development into international marketing and restoring economic activity in a country that has been at war for four years requires significant attention to the development of specialized logistics routes that take into account security

and transportation costs. Priority should be given to long-term contracts and cooperation with major importers and processors of the "26 Ores, Slag and Ash" commodity group, as well as participation in trade fairs and forums to strengthen partnerships in the markets of the Netherlands, Korea, Japan, and the USA.

4. Conclusion

Modern businesses in Ukraine and around the world face wartime pressure driven by geopolitical and economic shifts. Therefore, companies need support in maintaining their economic potential during the war. One of the key aspects is preserving economic capacity that ensures sustainable operations under wartime conditions. This includes maintaining financial stability, the ability to quickly adapt to changes in the political and military landscape. To operate successfully under such conditions, businesses should implement management strategies, continuously monitor the market, and actively seek new growth opportunities. It is essential to assess the importance of a company's economic potential during wartime and identify ways to maintain competitiveness in international markets.

It is substantiated that integrating sustainable development into international marketing and building mechanisms for restoring enterprise economic potential in wartime is a critical priority for Ukraine's economy under such challenging circumstances. However, when implementing these strategies, it is crucial to consider geopolitical risks that can significantly impact logistics, contracts, and the stability of partnerships. Enterprises should develop response scenarios for emergencies such as port blockades, sanctions, sudden changes in currency policies or regulations. Crisis planning, the creation of flexible supply chains, diversification of export channels, and risk insurance can enhance business resilience and ensure supply stability.

An environmental and social impact assessment of enterprise activities was carried out, taking into account the principles of sustainable development. It was determined that integration into international marketing strategies occurs through a combination of traditional marketing approaches and sustainability principles aimed at creating an effective business model that not only boosts export volumes but also contributes to environmental preservation and improves the quality of life for consumers in international markets. This process involves the implementation of innovative approaches to selling goods and services in selected potential new international markets.

As a result, an assessment of opportunities for Ukrainian producers in the "26 Ores, Slag and Ash" commodity group was conducted, and it is recommended that they primarily focus on the markets of the Netherlands, South Korea, Japan, and the USA for developing mechanisms to enhance enterprise economic potential under wartime conditions. These markets offer the most favorable combination of economic, political, and logistical conditions for Ukrainian exports.

The Dutch market is considered highly promising due to its high level of economic freedom, low corruption, and access to seaports. Although geographically distant, the Netherlands boasts first-class logistics and represents a highly favorable market for the resumption of active trade by Ukrainian enterprises.

The South Korean market is characterized by high industrial output, strong economic growth, top-level political stability, and direct interest in raw materials for metallurgy. The distance is shorter than to Western Europe, but logistics is more complex due to the specifics of maritime routes.

The Japanese market is defined by a high level of freedom, low corruption, stability, and a powerful industrial base that requires imported raw materials. Logistics may be more complicated, but Japan actively cooperates with external suppliers.

The U.S. market shows strong demand for resources due to a growing metallurgy sector. Although the distance is relatively long, the country has a highly developed port and international trade infrastructure, as well as political and economic stability conducive to long-term contracts.

As sustainable development is integrated into international marketing and the economic activity of Ukrainian enterprises is being restored during the fourth year of full-scale war, it is crucial to focus on developing specialized logistics routes that consider safety and transportation costs. Emphasis should be placed on long-term contracts and cooperation with major importers/processors of commodity group "26 Ores, slag and ash," as well as participation in exhibitions and forums to strengthen partnerships in the markets of the Netherlands, South Korea, Japan, and the United States. Moreover, a promising direction for further research is the study of the actual effectiveness of Ukrainian enterprises operating in these target markets after entering them. Analyzing the actual growth in trade volumes, contract sustainability, and market position retention will allow for empirical validation or adjustment of the strategic approaches outlined in this study and improve recommendations for other Ukrainian exporters.

References

Hanova, O. V., & Skibina, S. O. (2017). Sustainable development of EU countries: Methodology and assessment indicators. *Problems of Economy*, (3), 20–32.

Omarov, S. A. (2014). Theoretical foundations for forming a strategy of sustainable development of Ukraine's regions. *Bulletin of Chernihiv State Technological University*, (3[75]), 149–157.

Stelmaschuk, A., & Stelmaschuk, Y. (2017). Sustainable development of the national economy based on optimal interaction between society and nature. *Sustainable Development of Economy*, (4[37]), 5–13. Retrieved from https://www.economdevelopment.in.ua/index.php/journal/article/view/211

Ministry of Economic Development and Trade of Ukraine. (2022). Sustainable Development Goals: Ukraine. Retrieved from https://mepr.gov.ua/files/docs

United Nations Ukraine. (2021). Monitoring report on the achievement of Sustainable Development Goals 2020. Retrieved from https://ukraine.un.org/uk/151095-monitorynhovyy-zvit-shchodo-dosyahnennyatsiley-staloho-rozvytku-2020

Buryak, Y. V., Redko, K. Y., Chornovol, A. O., & Orlenko, O. V. (2022). Socio-economic aspects of sustainable development of Ukraine under wartime conditions (European integration aspects). *Scientific Notes of Lviv University of Business and Law. Economic Series. Legal Series*, (34), 135–143. https://doi.org/10.5281/zenodo.7221052

Krykavskyi, Y. V., & Mashchak, N. M. (2018). Prospects for implementing corporate social responsibility in the transport industry. *ScienceRise*, (11), 18–24. Retrieved from http://nbuv.gov.ua/UJRN/texc_2018_1

Khaled, R., Ali, H., & Mohamed, E. K. A. (2021). The sustainable development goals and corporate sustainability performance: Mapping, extent and determinants. *Journal of Cleaner Production*, 311, 127599. Retrieved from https://doi.org/10.1016/j.jclepro.2021.127599

Honchar, M., & Zelenevych, V. (2025). Integration of sustainable development principles into marketing strategies of IT companies. *Herald of Khmelnytskyi National University. Economic Sciences*, 338(1), 505–513. https://doi.org/10.31891/2307-5740-2025-338-75

Vikarchuk, O. (2016). Problems and prospects of international marketing development under integration conditions. *Sustainable Development of Economy*, (1[30]), 61–66. Retrieved from https://economdevelopment.in.ua/index.php/journal/article/view/438

Kotler P., Keller K. L. *Marketing Management*, Global Edition. Boston: Pearson Education Limited, 2016. URL: https://www.aca-demia.edu/43169301/Marketing_Management_Kotler

Hrod, M. I., & Cherednichenko, V. V. (2023). Circular strategies and circular business models: Digitization as a key factor in scaling the circular economy. *Effective Economy*, (2). https://doi.org/10.32702/2307-2105.2023.2.61

Sadchenko, O., Haivoronska, I., & Shmahina, V. (2025). Integration of ESG principles in production: Opportunities for sustainable development, circular economy, and marketing. *Sustainable Development of Economy*, (1[52]), 262–268. https://doi.org/10.32782/2308-1988/2025-52-36

Sadchenko, O. (2024). Convergence of marketing in sustainable development conditions on the example of organic fertilizer entrepreneurship. *Sustainable Development of Economy*, (3[50]), 87–93.

Krasnokutska, N. S. (2010). *Potential of a trading enterprise: Theory and research methodology* (Monograph). Kharkiv: Kharkiv State University of Food and Trade.

Kozachenko, S. V. (2019). Assessment of enterprise potential: An intellectual approach. *Scientific Works of the National University of Food Technologies*, 38(1), 76–82.

Vaskivska, K. V., Lozinska, L. D., & Halimuk, Y. O. (2020). Economic potential of an enterprise under changing conditions: Essence and characteristic features. *Effective Economy*, (5). Retrieved from http://www.economy.nayka.com.ua/pdf/5_2020/9.pdf

Loy, A. V. (2023). Identification of risks in forming the economic potential of a trading enterprise. *Actual Problems of Economy*, (7[265]), 47–56. Retrieved from https://eco-science.net/wp-content/uploads/2023/07/06.23._topic_Anna-V.-Loi47-56.pdf

Tanasiichuk, A., Dybchuk, L., Shevchuk, A., Hromova, O., Mykhailo, H., Zakharchuk, I., & Ulianych, Y. (2025). International Marketing Diversification: A Path to Sustainable Enterprise Development. *European Journal of Sustainable Development*, *14*(1), 266. https://doi.org/10.14207/ejsd.2025.v14n1p266

Global economy. URL: https://www.theglobaleconomy.com/Ukraine/gdp_current_local_currency/[Last accesed 28.03.2025].

State Statistics Service of Ukraine. URL: https://www.ukrstat.gov.ua/

Trade statistics for international business development. URL: http://www.trademap.org. [Last accesed 28.03.2025].

Zamkova, N.L., Tanasiichuk, A.M., Polishchuk, I.I., Gromova, O.E., & Dovgan Y.V. (2024). *International marketing.* Vinnytsia: RVV VITE SUTE.

Global economy. URL: https://www.theglobaleconomy.com/Ukraine/gdp_current_local_currency/[Last accesed 28.03.2025].

Kovinko O. M. (2017) Marketing in the conditions of international diversification of business activity: monograph. K.: KNEU, 423 p.

Tanasiichuk A., Kovalchuk S., Hromova O., Hryhorenko I., Fedortsova O. «Evaluation of the Convergence of International Markets for Agricultural Enterprises of Ukraine under International Diversification Conditions», European Journal of Sustainable Development. Italy. 2020. Vol 9, No 2. p. 467-487 DOI: https://doi.org/10.14207/ejsd.2020.v9n2p467

Official website of the State Statistics Service of Ukraine, 1998-2016. URL: http://www.ukrstat.gov.ua/ [Last accesed 28.03.2025].

Tanasiichuk, A., Tyukhtenko, N., Zaburmekha, Y., Sokoliuk, S., Prokopchuk, O., Krupskyi, A., & Tsurkanov, M. (2024). Sustainable Development Strategy of Enterprises in International Markets: Opportunities and Challenges. European Journal of Sustainable Development, 13(3), 311. https://doi.org/10.14207/ejsd.2024.v13n3p311