



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

Inclusive and Sustainable Industrial Development Working Paper Series

WP 2 | 2024

Analysis of industrial production and exports of goods from Ukraine and its regions, 2013-2022

**DIVISION OF CAPACITY DEVELOPMENT, INDUSTRIAL POLICY
ADVICE AND STATISTICS**

WORKING PAPER 2/2024

**Analysis of industrial production and exports of goods
from Ukraine and its regions, 2013-2022**

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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

Vienna, 2024

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Acknowledgments

This paper has been written by Viktoriia Khaustova (Research Center for Industrial Problems of Development of the National Academy of Sciences of Ukraine), Upalat Korwatanasakul (Faculty of Social Sciences, Waseda University) and Nicola Cantore (UNIDO). It is part of the background materials produced for the project "Green industrial recovery programme in Ukraine" funded by BMZ (Germany Federal Ministry of Economic Cooperation and Development) and in particular for the Ukraine industrial Country Diagnostics 2023 component implemented by UNIDO with the coordination of Nicola Cantore supported by Upalat Korwatanasakul. The design was done by Valeria Farinola (UNIDO).

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Abstract

The war in Ukraine has dramatically impacted the country's economic growth and industrialization objectives. The substantive drop in economic indicators in 2022 follows shocks that have affected Ukraine's economy over the last decade and have triggered a premature de-industrialization path of the country. The study analyzes the path of key performance indicators of the Ukrainian economy over the period 2013 – 2022 at national, region and industry sectorial levels. It offers an overview of Ukraine's industrial structure performance using a privileged data set and statistics derived from the Ukraine Statistics Office. Whereas the recovery effort that policymakers are called to tackle is challenging as the great performance heterogeneity across regions, relevant niches of resilience pose the basis for a future economic recovery for a renaissance of industrial policy and manufacturing development.

JEL codes: F01; F13; H12

1. Introduction

Ukraine is experiencing a conflict that significantly impacts economic growth and the industrial system. Despite the dramatic impact, the literature offering an overview of Ukraine's economic impact is still scant. World Bank (2024) estimates that as of 31 December 2023, the total cost of reconstruction and recovery in Ukraine will be \$486 billion over the next decade, up from \$411 billion estimated one year ago. Haddad et al. (2023) point out that the damage to physical infrastructure and supply chain disruption will likely propagate to other parts of the country through economic interlinkages represented by a regional input-output model. Landesmann et al. (2023) point out that for Ukraine, “it is reasonable to assume that the costs of economic recovery will be dramatic” and that “Ukraine will need assistance in the forms of grants from the West.”

This analytical note offers an original contribution to the debate in three directions: 1) it offers a description of the Ukraine economy through original data from the Ukraine Statistics Agency 2) it provides an overview of the economic impact for Ukraine by considering not only the 2022 full-scale invasion but a broader overview on multiple shocks that happened over time 3) it analyzes specifically industry related matters.

Section 2 provides a methodology; section 3 describes results; and section 4 concludes. The appendix sections offer a valuable source of information on Ukraine's manufacturing sector and economy.

2. Methodology

The industrial production and exports of goods from Ukraine and its regions were analyzed for 2010-2022, following the methodological approach presented in Figure 1 that organizes the descriptive statistics work in five distinct sections:

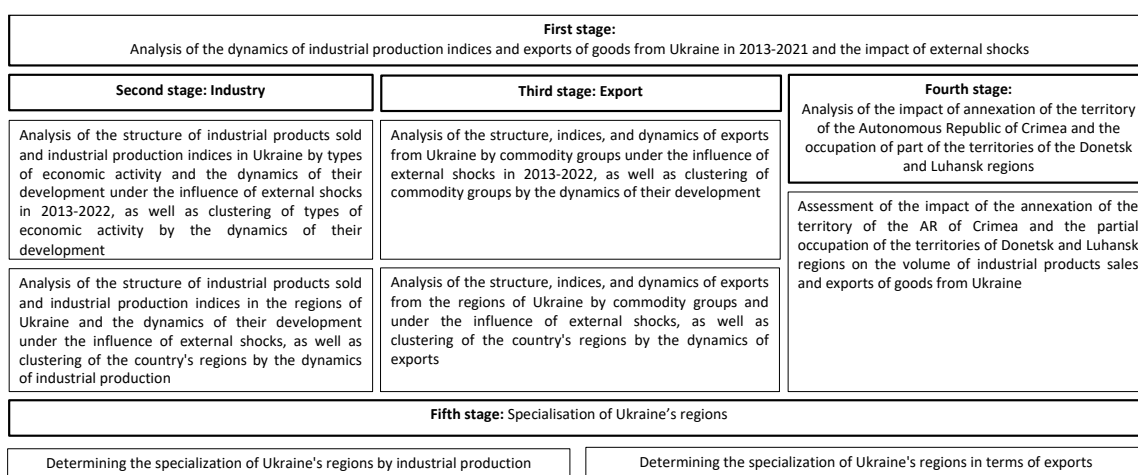
- First stage: Analysis of industrial production indices and exports across shocks
- Second stage: Analysis of industry
- Third stage: Analysis of exports
- Fourth stage: Impact of the Crimea Annexation
- Fifth stage: Specializations across regions

Over 2013 - 2022, Ukraine experienced three major external shocks: 1) the annexation of the territory of the Autonomous Republic of Crimea and the outbreak of war with Russia in eastern Ukraine with the occupation of part of the territories of Donetsk and Luhansk regions (2014); 2) the global COVID-

19 pandemic, which spread to Ukraine (2020-2021); and 3) the full-scale war with Russia on the territory of Ukraine (2022 - present). Industries are analyzed by using the ISIC Rev. 3 classification. Regions are analyzed using existing statistical information. Data are analyzed only to provide an exploratory, descriptive overview of Ukraine's industrial performance. Further research will be needed to use existing data by appropriate modeling tools.

The industrial production and exports of goods from Ukraine and its regions were analyzed for 2013-2022, following the methodological approach presented in Figure 1. Not for all the indicators, it is possible to provide data and information from the full-scale invasion in 2022. Nonetheless, it is still possible to extrapolate useful messages from previous multiple crises.

Figure 1: The methodological approach to the analysis of industrial production and exports from Ukraine and its regions under the influence of external shocks

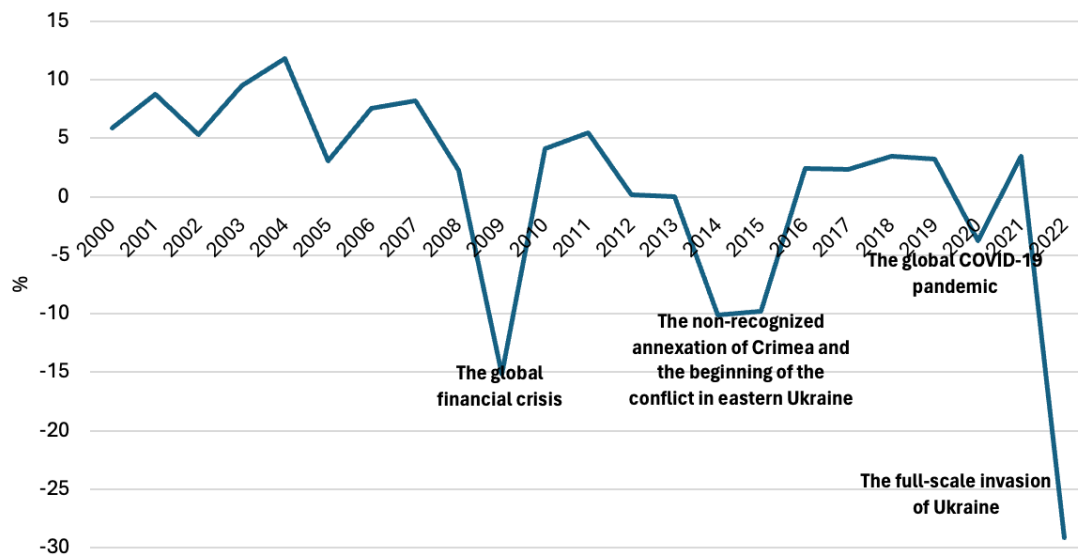


Data source: UNIDO elaboration.

2.1 First stage

The analysis of the evolution of Ukraine's industrial production indices and exports can be embedded in the more general context of Ukraine's GDP growth in the last decade. As shown in Figure 2, Ukraine's economic growth has been volatile over time as it was affected by different local or global shocks. The recent war deriving from the full-scale invasion is the shock that has generated the most significant impact.

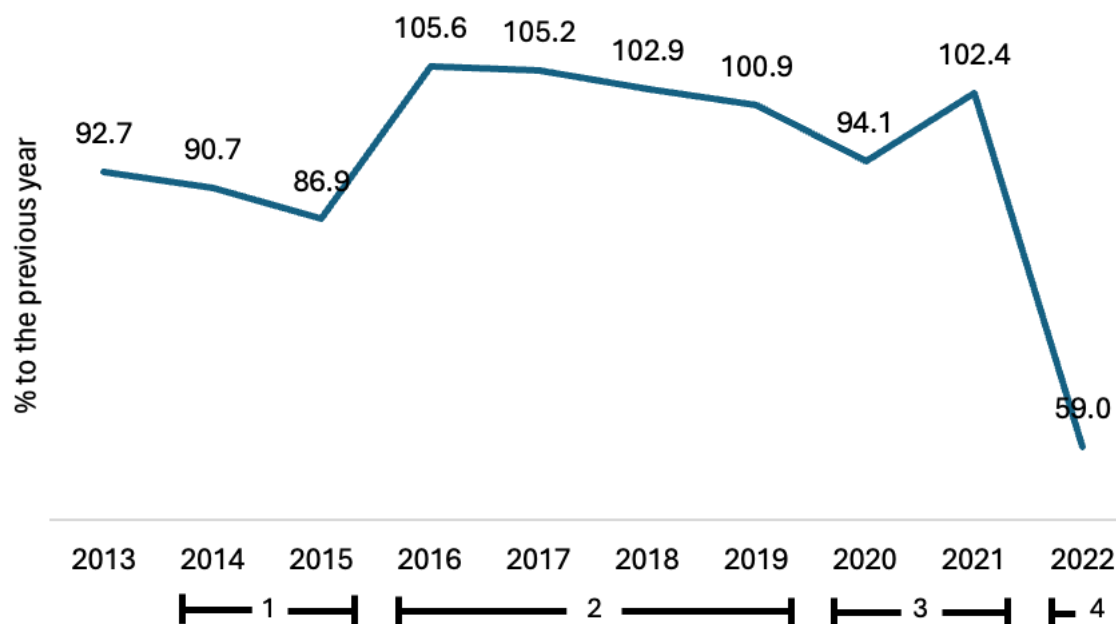
Figure 2: Dynamics of Ukraine's GDP growth, 2000-2022



Data source: World Development Indicators, World Bank.

This section also analyzes the indices of industrial production and exports of goods from Ukraine to assess their dynamics under the influence of external shocks. Figure 3 and Figure 4 reveal that external shocks significantly impacted the volume of industrial output and exports of goods from Ukraine. Ukraine's industrial output in 2014-2015 decreased by 21.2% compared to 2013, and exports of goods by 38.8% because of the non-recognized annexation of Crimea and the beginning of the conflict in eastern Ukraine. In 2016-2019, there was a slight increase in the country's industrial output by 6.2% and in exports of goods by 12.1%. The second external shock related to the global COVID-19 pandemic led to a slight drop in industrial output in 2020 by 3.8% and exports of goods from the country by 1.3%. However, in 2021, there were gradual increases in industrial output by 1.5% and in exports by 30.3%. The last external shock that had the greatest impact on industrial output and exports from the country was Russia's full-scale invasion of Ukraine in February 2022. During that year, industrial output in Ukraine declined by 30.3% and exports of goods by 38.5%. Thus, the analysis shows that the growth rate of industrial production in Ukraine in 2021 could not recover to the level of 2013. As for exports, there has been a gradual increase since 2016, with a sharp rise in 2021, but this growth has been disproportionate to the dynamics of industrial production. These dynamics indicate the presence of cyclicity in the production of industrial goods and exports of goods from Ukraine under the influence of external shocks.

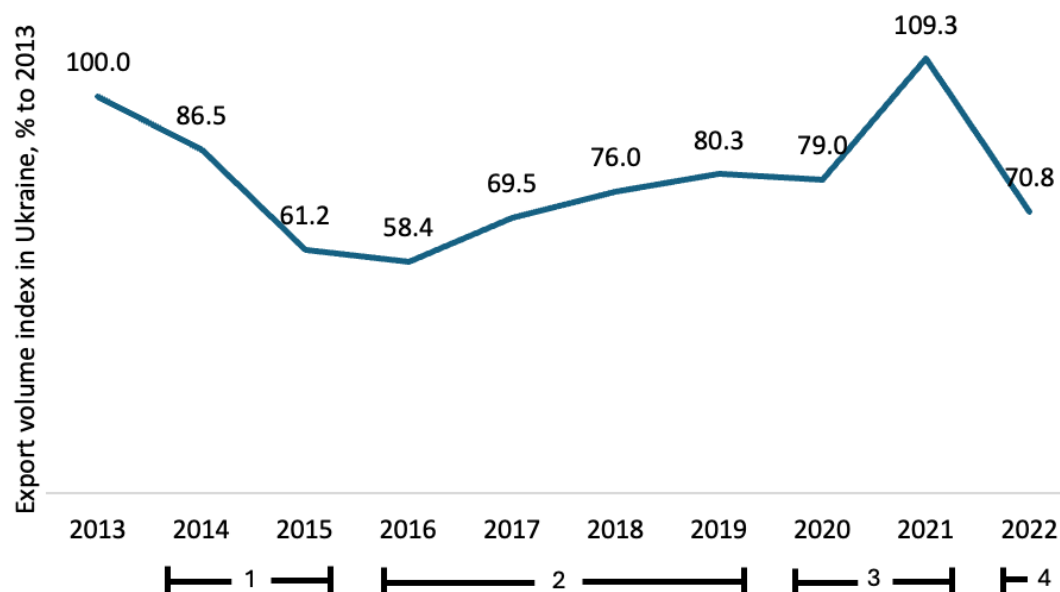
Figure 3: Ukraine's manufacturing industrial production index, 2013-2022



Note: I – non-recognized annexation of Crimea and the beginning of the conflict in eastern Ukraine; II – continuation of the conflict in eastern Ukraine; III – continuation of the conflict in eastern Ukraine and the spread of the COVID-19 pandemic; IV – full-scale invasion of Ukraine.

Data source: State Statistics Service of Ukraine [1].

Figure 4: Index of exports of goods from Ukraine in 2013-2022



Note: I – non-recognized annexation of Crimea and the beginning of the conflict in eastern Ukraine; II – continuation of the conflict in eastern Ukraine; III – continuation of the conflict in eastern Ukraine and the spread of the COVID-19 pandemic; IV – full-scale invasion of Ukraine.

Data source: State Statistics Service of Ukraine [2].

2.2 Second stage

The following analyses were carried out:

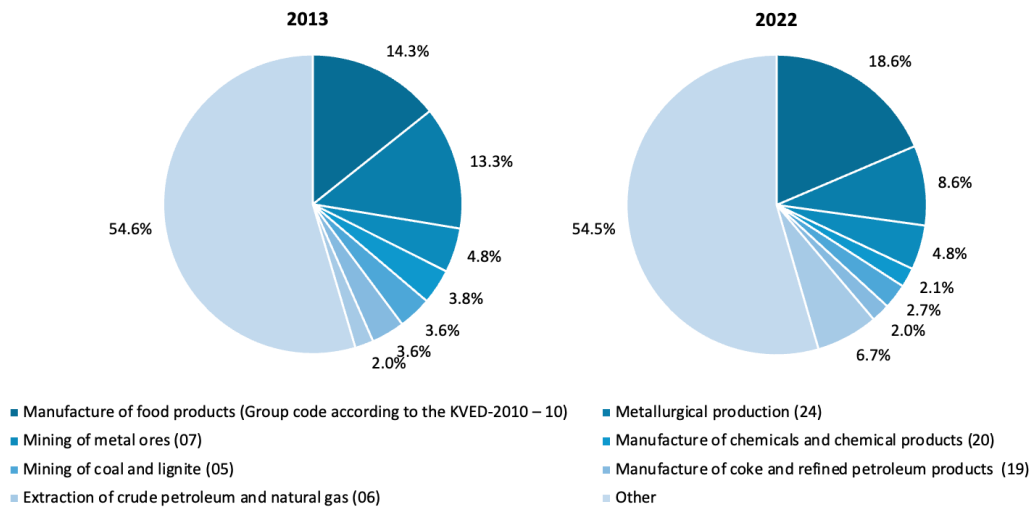
- Analysis of the structure of industrial products sold and industrial production indices in Ukraine by types of economic activity and the dynamics of their development under the influence of external shocks in 2013-2022, as well as clustering of the kinds of economic activity by the dynamics of their development.
- Analysis of the structure of industrial products sold and industrial production indices in the regions of Ukraine and the dynamics of their development under the influence of external shocks, as well as clustering of the country's regions by the dynamics of industrial production.

Clusters by economic activity¹

Figure 5 illustrates the structure of industrial products sold by economic activity in Ukraine in 2013 and 2022, while Figure 6 exhibits the dynamics of sales of industrial products by the top 10 economic activity for this period. The statistical data for the analysis are compiled by type of economic activity in Ukraine according to the KVED-2010 classification. This classification is aligned with the statistical classification of economic activities in the European Community (NACE), which aligns with the International Standard Industrial Classification (ISIC). The KVED-2010 is harmonized with NACE (Rev. 2) at the class level.

¹ Appendix A shows the indices of industrial production, by type of activity and main industrial groupings for 2013-2022.

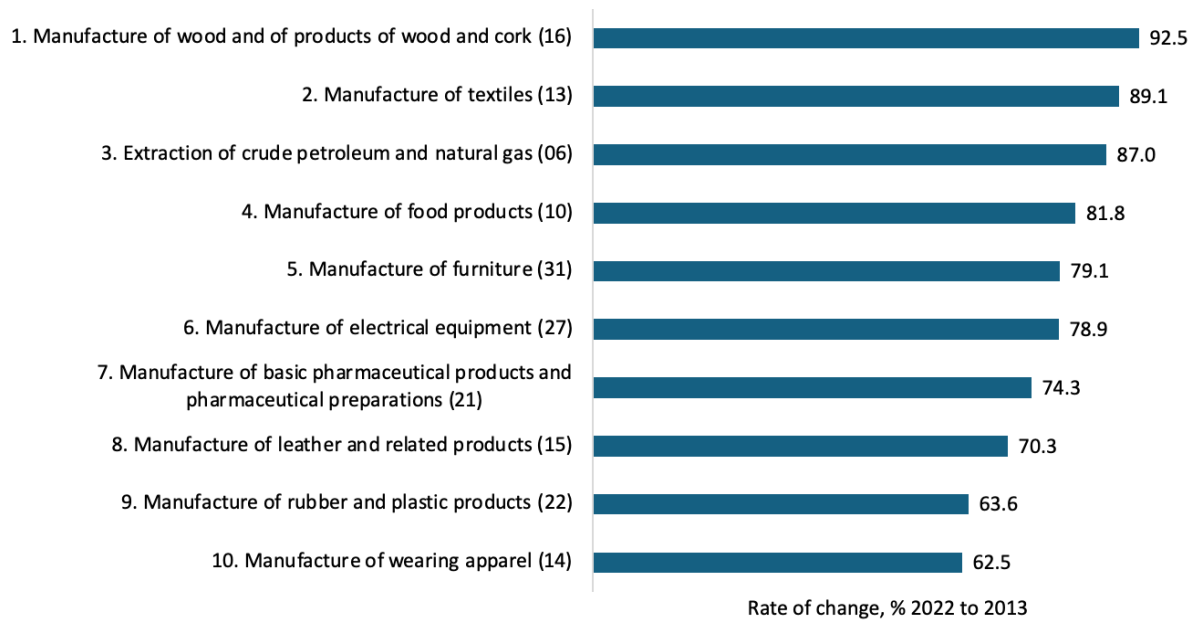
Figure 5: Structure of industrial products sold by economic activity in Ukraine in 2013 and 2022



Note: Percentages may not total 100 due to rounding.

Data source: State Statistics Service of Ukraine [1, 3].

Figure 6: Dynamics of volumes of industrial products sold by TOP-10 types of economic activity in Ukraine



Data source: State Statistics Service of Ukraine [1, 3].

Similar to 2013, in 2022, the leading types of economic activity in Ukraine were manufacture of food products (10), manufacture of basic metals (24), and mining of metal ores (07) (Figure 5). In 2022, only the extraction of crude petroleum and natural gas (06) was added to the top 10 economic activities in Ukraine.

The lowest rates of decline in sales of industrial products in Ukraine were observed in the following types of economic activity (Figure 6): manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (16) – 92.5%; manufacture of textiles (13) – 89.1%; extraction of crude petroleum and natural gas (06) – 87.0%; manufacture of food products (10) – 81.8%.

Table 1 shows the conditional division of the types of economic activities in Ukraine into clusters according to the dynamics of their development in 2013-2022 under the influence of external shocks. The first cluster includes 13 types of economic activity. Production in 2022 under the influence of external shocks declined by approximately 50% compared to 2013. The second cluster contains ten types of economic activity whose production decreased by more than 50% but less than 75%. The third cluster includes two types of economic activity that are declining by more than 75%. Thus, three clusters of economic activities in industrial production experienced a decline under the influence of external shocks.

Table 1: Clustering of the types of economic activity in the field of industrial production by the dynamics of their development in Ukraine in 2013-2022.

Cluster	Code of KVED -2010	Commodity group	Indices of industrial production						
			2013, specific weight, %	2015 in % to 2013	2019 in % to 2015	2021 in % to 2019	2022 in % to 2021	2022 in % to 2013	2022, specific weight, %
I	06	Extraction of crude petroleum and natural gas	2.0	95.3	103.7	92.3	91.8	87.0	6.7
	10	Manufacture of food products	14.3	92.7	119.4	93.6	79.0	81.8	18.6
	11	Manufacture of beverages	3.0	82.8	97.6	96.4	76.2	59.4	2.2
	13	Manufacture of textiles	0.3	103.6	111.2	111.9	69.1	89.1	0.4
	14	Manufacture of wearing apparel	0.3	97.1	99.2	81.0	80.1	62.5	0.4
	15	Manufacture of leather and related products	0.2	81.6	113.6	106.6	71.1	70.3	0.3
	16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	0.8	104.3	118.8	105.1	71.0	92.5	1.9
	21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	0.9	93.6	105.5	106.3	70.2	74.3	1.5

	22	Manufacture of rubber and plastic products	1.6	83.6	126.5	102.1	58.9	63.6	2.0
	25	Manufacture of fabricated metal products, except machinery and equipment	2.0	72.0	134.3	93.9	59.0	53.6	1.8
	27	Manufacture of electrical equipment	1.7	83.7	121.2	118.2	65.8	78.9	1.0
	29	Manufacture of motor vehicles, trailers and semi-trailers	0.8	85.2	80.8	105.5	72.7	52.8	1.3
	31	Manufacture of furniture	0.5	87.3	139.7	111.2	58.3	79.1	0.8
II	05	Mining of coal and lignite	3.6	44.3	90.3	92.3	92.3	34.1	2.7
	07	Mining of metal ores	4.8	86.4	93.9	100.0	38.3	31.1	4.1
	08	Other mining and quarrying	0.8	82.7	115.7	125.0	25.1	30.0	0.4
	12	Manufacture of tobacco products	2.0	113.1	78.0	89.0	42.0	39.0	0.4
	17	Manufacture of paper and paper products	1.3	66.5	94.1	105.1	62.5	41.1	1.5
	18	Printing and reproduction of recorded media	0.6	69.7	123.9	89.2	54.9	42.3	0.3
	20	Manufacture of chemicals and chemical products	3.8	69.9	137.4	105.0	38.2	38.5	2.1
	26	Manufacture of computer, electronic and optical products	0.6	55.3	147.0	82.7	58.9	39.6	0.4
	28	Manufacture of machinery and equipment n.e.c.	2.7	80.8	118.5	86.6	40.6	33.7	1.3
	30	Manufacture of other transport equipment	3.0	48.8	145.1	74.9	65.4	34.7	1.5
III	19	Manufacture of coke and refined petroleum products	3.6	65.1	109.8	103.3	33.4	24.7	2.0
	24	Manufacture of basic metals	13.3	74.1	97.1	97.2	33.5	23.4	8.6
Ukraine			68.5	78.8	107.8	97.3	63.3	52.3	64.6

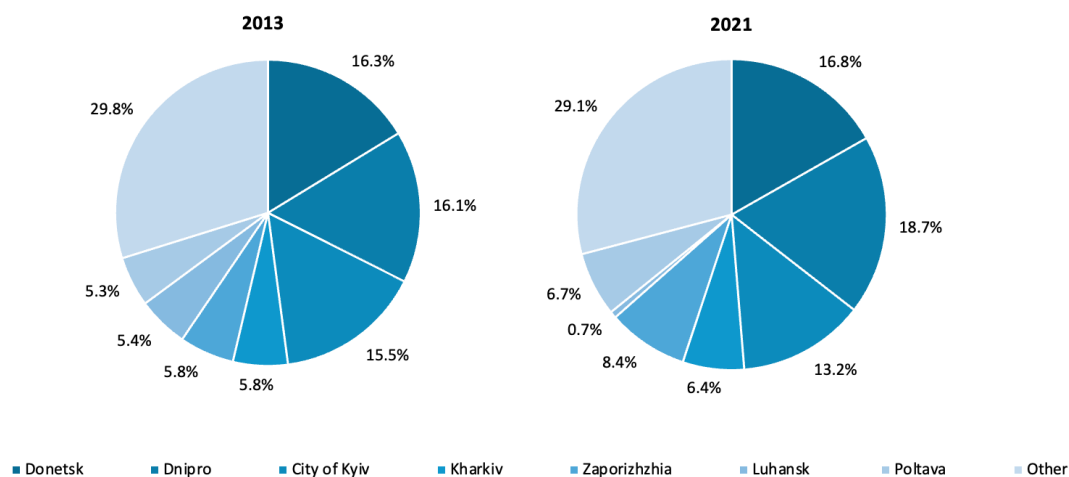
Data source: State Statistics Service of Ukraine [1, 3]. Note: chain index, base year = 2013.

Clusters by region

Figure 7 shows the structure of the volume of industrial products sold by regions of Ukraine in 2013 and 2022. In contrast, Figure 8 shows the dynamics of the top 10 regions of Ukraine by this indicator. Similar to 2013, in 2021, the leading regions of Ukraine in terms of volumes of industrial products sold were the Dnipro, Donetsk, Kharkiv and Zaporizhzhia regions and the City of Kyiv. Regarding 2021 sales, compared to 2013, the share of Donetsk and the city of Kyiv decreased by 7.5% and 2.3%, respectively. In contrast, the share of the Dnipro region and the Zaporizhzhia increased by 2.6%. The most dynamic growth in sales volumes was in the Vinnytsia region (135.4%), the Zhytomyr region

(131.0%), the Odesa region (125.5%), the Ternopil region (119.6%) and the Rivne region (119.9%) (Figure 8).

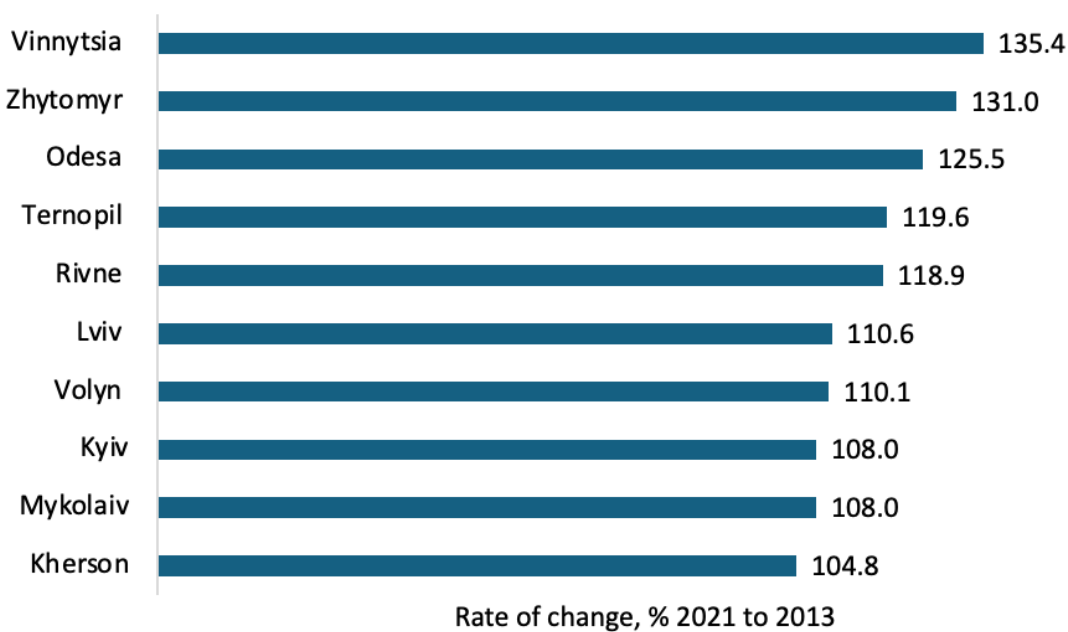
Figure 7: The structure of volumes of industrial products sold by regions of Ukraine in 2013 and 2021



Note: Percentages may not total 100 due to rounding.

Data source: State Statistics Service of Ukraine [1, 3].

Figure 8: Top 10 regions of Ukraine in terms of the dynamics of industrial products sold



Data source: State Statistics Service of Ukraine [1, 3].

Table 2 shows the conditional division of Ukraine's regions into clusters based on changes in the volumes of industrial products sold in 2013-2021 under the influence of external shocks. Due to the lack of official information, only two external shocks were considered: 1) the annexation of the territory of the Autonomous Republic of Crimea and the outbreak of the war in Donetsk and Luhansk regions in 2014-2021 and 2) the global COVID-19 pandemic, which spread to the territory of Ukraine (2020-2021).

Without considering the third external shock (the outbreak of the full-scale war on the territory of Ukraine), the most dynamic cluster is the one including Kherson, Kyiv, Mykolaiv, Volyn, Lviv, Rivne, Ternopil, Vinnytsia, Zhytomyr and Odesa. The cluster includes ten regions whose industrial output sales in 2021 exceeded those in 2013. The second cluster consists of 13 regions of Ukraine whose industrial sales decreased by less than 50%, i.e., Zaporizhzhia, Kharkiv, Sumy, Chernihiv, Zakarpattia, Ivano-Frankivsk, Khmelnytskyi, Chernivtsi, Dnipropetrovsk, Kirovohrad, Poltava, Cherkasy, city of Kyiv. Lastly, the third cluster consists of two regions of Ukraine, whose industrial output declined by more than 50%. Donetsk and Luhansk are the regions with the largest decline in this indicator, with a more than 75% decline in industrial sales. The last cluster has been experiencing military operations since 2014.

Table 2: Clustering of Ukrainian regions by the dynamics of industrial production in 2013-2021.

Cluster	Region	Index of industrial production by regions, %							
		2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %
I	Kherson	92.4	98.1	94.6	104.4	111.1	95.1	99.7	104.8
	Kyiv	99.1	93.0	94.5	99.7	119.1	97.5	96.0	108.0
	Mykolaiv	96.5	91.1	92.4	98.3	114.7	99.3	101.9	108.0
	Volyn	102.9	98.6	101.8	94.9	102.7	110.0	105.3	110.1
	Lviv	101.2	98.5	95.7	97.0	104.6	104.8	110.5	110.6
	Rivne	91.4	100.3	104.0	106.9	109.6	107.2	104.3	118.9
	Ternopil	99.5	92.1	107.3	98.3	115.5	105.2	96.5	119.6
	Vinnytsia	110.4	104.0	109.6	114.7	129.6	100.8	95.3	135.4
	Zhytomyr	113.4	110.0	117.8	94.3	106.4	107.1	104.5	131.0
	Odesa	100.6	96.1	95.8	107.4	121.6	107.0	107.7	125.5
II	Zaporizhzhia	97.1	95.3	92.3	95.5	101.8	106.4	98.8	92.8
	Kharkiv	94.5	88.2	83.6	96.7	111.7	93.5	89.6	83.7
	Sumy	107.0	98.4	86.7	98.3	100.6	105.2	96.5	84.2
	Chernihiv	89.6	91.2	88.6	89.9	91.1	97.6	91.0	73.5
	Zakarpattia	96.9	79.7	84.6	86.1	96.1	106.5	98.7	80.2

Cluster	Region	Index of industrial production by regions, %							
		2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %
	Ivano-Frankivsk	95.3	89.1	88.1	95.6	112.8	106.0	99.0	98.4
	Khmelnitskyi	97.6	95.7	93.6	85.5	86.7	106.4	104.3	84.6
	Chernivtsi	103.7	98.3	91.3	100.3	109.5	97.3	83.6	83.6
	Dnipropetrovsk	98.5	92.1	85.2	101.0	103.4	107.2	94.1	82.9
	Kirovohrad	106.6	82.9	83.6	103.6	134.4	81.7	83.5	93.8
	Poltava	94.7	96.2	89.4	98.8	99.3	101.2	101.0	89.7
	Cherkasy	95.2	90.8	86.0	101.3	109.2	98.3	95.2	89.4
	City of Kyiv	89.9	94.6	81.3	98.0	96.2	103.0	100.6	78.7
III	Donetsk	93.6	65.4	44.8	100.0	97.9	102.8	99.3	43.6
	Luhansk	91.1	34.0	19.7	96.0	76.4	90.6	84.6	12.7
Ukraine		95.7	87.7	78.8	99.5	107.8	101.9	97.3	82.7

Data source: State Statistics Service of Ukraine [1]. Note: chain index, base year = 2013.

2.3 Third stage

In the third stage, the following analyses were carried out:

- The analysis of the structure, indices and dynamics of exports from Ukraine by commodity groups under the influence of external shocks in 2013-2022, as well as the clustering of commodity groups by the dynamics of their development.
- The analysis of the structure, indices and dynamics of exports from the regions of Ukraine by commodity groups and under the influence of external shocks, as well as clustering of the country's regions by the dynamics of exports.

Clusters by commodity group ²

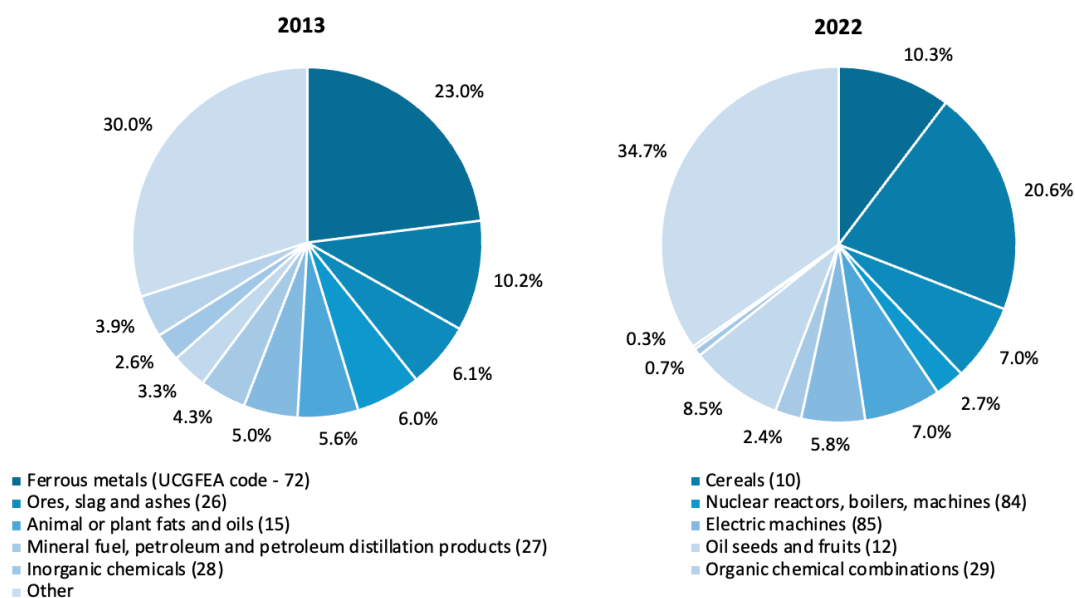
Figure 9 shows the structure of exports from Ukraine by commodity groups in 2013 and 2022, while Figure 10 reveals the dynamics of the top 10 commodity groups in export volumes. In 2022, Ukraine's leading export commodity groups were cereals (10) (20.6%), ferrous metals (72) (10.3%); ores, slag

² The collection of the Commodity groups data for the analysis follows the Ukrainian Classification of Goods for Foreign Economic Activity (UCGFEA), based on the Harmonized Commodity Description and Coding System of the World Customs Organisation. Appendix B shows the commodity structure of exports from Ukraine in 2013-2022.

and ashes (26) (7.0%) and animal or plant fats and oils (15) (7.0%). Compared to 2013, the share of ferrous metals exports (72) decreased by 12.7%, but the share of cereals (10) increased by 10.4%. The most dynamically growing exports during this period were oil seeds and fruits (12) (183.9%), animal or plant fats and oils (15) (170.1%) and cereals (10) (143.4%) (Figure 10).

Table 3 shows the breakdown of Ukraine’s leading export commodity groups by cluster and their development during 2014-2022 under the influence of external shocks. The first cluster includes ten commodity groups whose exports increased in 2022 by exceeding 2013 levels, representing the most dynamic and developed commodity group in 2013-2022. These commodity groups involved live animals, meat and meat preparations, edible fruits and nuts, cereals, oil seeds and fruits, animal or plant fats and oils, remains and wastes of food industry, wood and articles of wood, glass and preparations thereof and furniture. The second cluster contains nine commodity groups whose exports decreased by less than 50%, while the third cluster includes six commodity groups whose exports declined by 50 to 75%. Lastly, the fourth cluster includes six commodity groups whose exports decreased by more than 75% in 2022, i.e., the largest decline in exports. Inorganic chemicals, fertilizers, paper, paperboard, ceramic products, railway locomotives and aircrafts belong to this cluster.

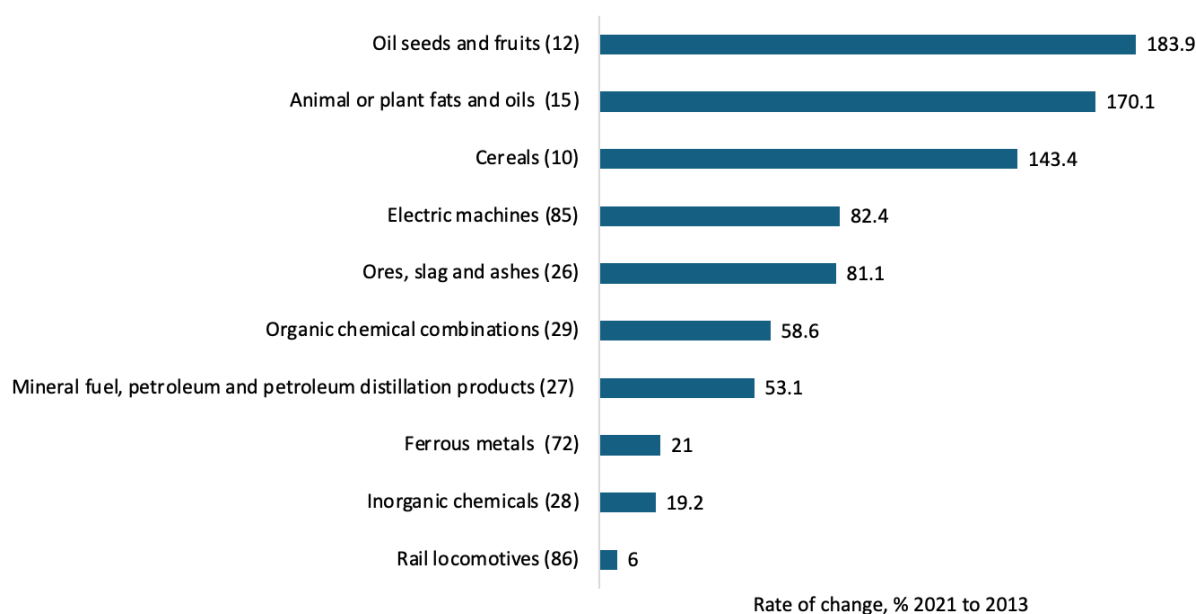
Figure 9: Structure of exports from Ukraine by commodity group in 2013 and 2022



Note: Percentages may not total 100 due to rounding.

Data source: State Statistics Service of Ukraine [4-6].

Figure 10: The top-ten commodity groups by export dynamics from Ukraine



Data source: State Statistics Service of Ukraine [4-6].

Table 3: Clustering of the commodity groups of industrial products in Ukraine by the dynamics of their exports in 2013-2022.

Cluster	Commodity groups	Industrial export indices						
		2013, specific weight, %	2015 in % to 2013	2019 in % to 2015	2021 in % to 2019	2022 in % to 2021	2022 in % to 2013	2022, specific weight, %
I.	01 live animals	0.02	198.4	244.1	65.4	95.4	302.2	0.09
	02 meat and meat preparations	0.6	108.4	185.5	118.8	109.3	265.3	2.1
	08 eatable fruits and nuts	0.2	111.7	168.8	141.6	85.0	226.9	0.7
	10 cereals	10.2	95.4	159.0	128.1	73.8	143.4	20.6
	12 oil seeds and fruits	3.3	72.2	173.7	95.0	154.3	183.8	8.5
	15 animal or plant fats and oils	5.6	94.4	143.4	148.7	84.5	170.1	13.5
	23 remains and wastes of food industry	1.5	108.1	149.2	116.2	62.4	117.4	2.5
	44 wood and articles of wood	1.8	96.8	120.5	143.2	94.0	164.8	4.3
	70 glass and preparations thereof	0.2	87.9	157.7	135.9	63.5	119.6	0.14
	94 furniture	0.9	71.6	169.8	155.2	77.0	145.3	1.8
II.	04 milk and milk products; eggs; honey	1.1	55.9	117.4	83.4	119.4	65.4	1.0
	22 alcoholic and non-alcoholic beverages, vinegar	0.6	50.7	114.8	147.2	66.0	56.6	0.5
	26 ores, slag and ashes	6.1	58.4	162.0	198.3	43.3	84.2	7.0
	29 organic chemical combinations	0.4	28.6	315.9	152.3	42.5	58.5	0.3
	30 pharmaceutical products	0.4	62.0	161.4	125.8	74.5	93.8	0.5

	61-62 knitted clothes and knitted articles of clothes, textile clothes and textile articles of clothes	0.9	75.8	120.6	90.5	87.6	72.5	1.0
	85 electric machines	5.0	64.0	140.1	113.3	81.5	82.8	5.8
III.	18 cocoa and cocoa preparations	0.9	33.7	109.2	109.5	65.6	26.4	0.33
	24 tobacco and industrial substitutes of tobacco	0.5	120.0	124.7	103.5	30.7	47.6	0.3
	72 ferrous metals	23.0	56.4	108.2	159.7	32.5	31.7	10.3
	73 preparations from ferrous metals	4.1	35.9	113.6	124.1	81.3	41.2	2.4
	84 nuclear reactors, boilers, machines	6.0	52.6	86.3	125.3	55.4	31.5	2.7
	87 ground transport facilities excluding railway	0.6	46.9	77.7	122.1	79.8	35.5	0.3
IV.	28 inorganic chemicals	2.6	58.8	82.3	123.0	32.2	19.2	0.7
	31 fertilizers	1.9	45.6	42.1	276.8	27.3	14.5	0.4
	48 paper, paperboard	1.7	49.5	69.6	125.6	54.2	23.5	0.6
	69 ceramic products	0.5	47.5	93.1	147.9	32.8	21.5	0.14
	86 railway locomotives	3.9	8.6	259.0	52.8	51.0	6.0	0.3
	88 aircrafts	0.5	61.1	36.8	94.3	42.3	9.0	0.05
Ukraine		87.6	61.2	131.3	136.0	64.8	69.7	87.9

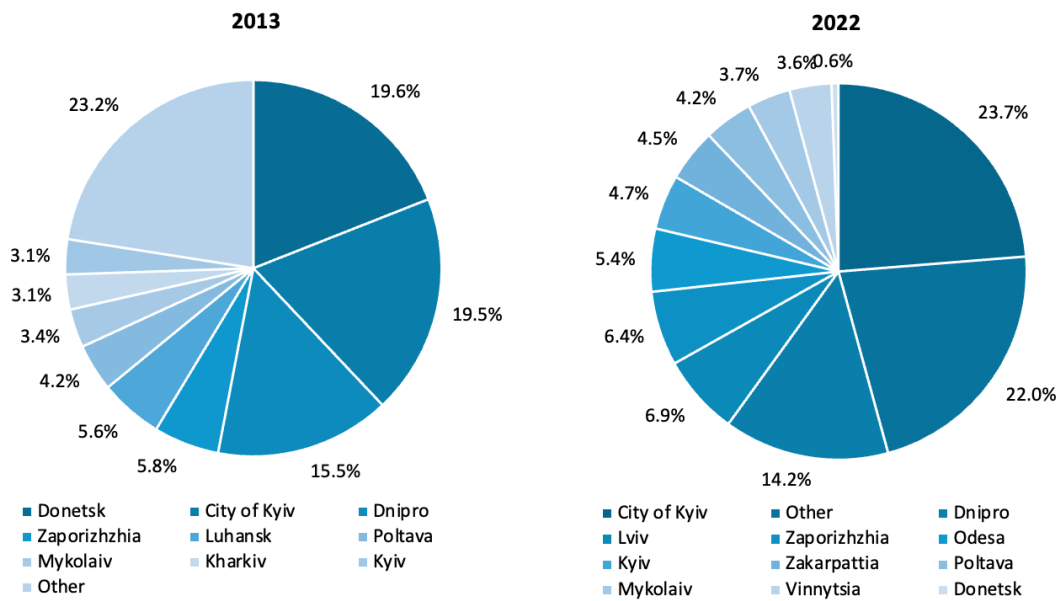
Data source: State Statistics Service of Ukraine [2, 4-6]. Note: chain index, base year = 2013.

Clusters by region

Figure 11 shows the structure of exports of goods from Ukraine by region in 2013 and 2022, and Figure 12 shows the dynamics of the top ten regions in terms of exports of goods. In 2022, the leading exporting regions of Ukraine were the Dnipro region, the City of Kyiv and the Lviv region, among others. In contrast, in 2013, the Donetsk region occupied the largest share of the country's export structure (19.6%). The exports from the Vinnytsia region (235.6%), the Lviv region (234.4%), the Chernivtsi region (228.8%) and the Ternopil region (213.7%) grew most dynamically during this period (Figure 12).

Table 4 shows the conditional division of regions into clusters based on the dynamics of commodity exports in 2013-2022 under the influence of external shocks. The first cluster includes four regions whose exports grew more than 200% between 2013 and 2022, i.e., Vinnytsia, Lviv, Chernivtsi and Ternopil, representing the leading regions in export dynamics. The second cluster comprises 11 regions whose exports of goods increased by between 100 and 200%, also showing positive export dynamics. On the other hand, the third cluster includes six regions and the city of Kyiv, whose exports decreased by less than 50%, while the fourth cluster consists of four regions whose exports declined by more than 50%; Exports of goods from Kharkiv, Kherson, Donetsk and Luhansk experienced the largest decline.

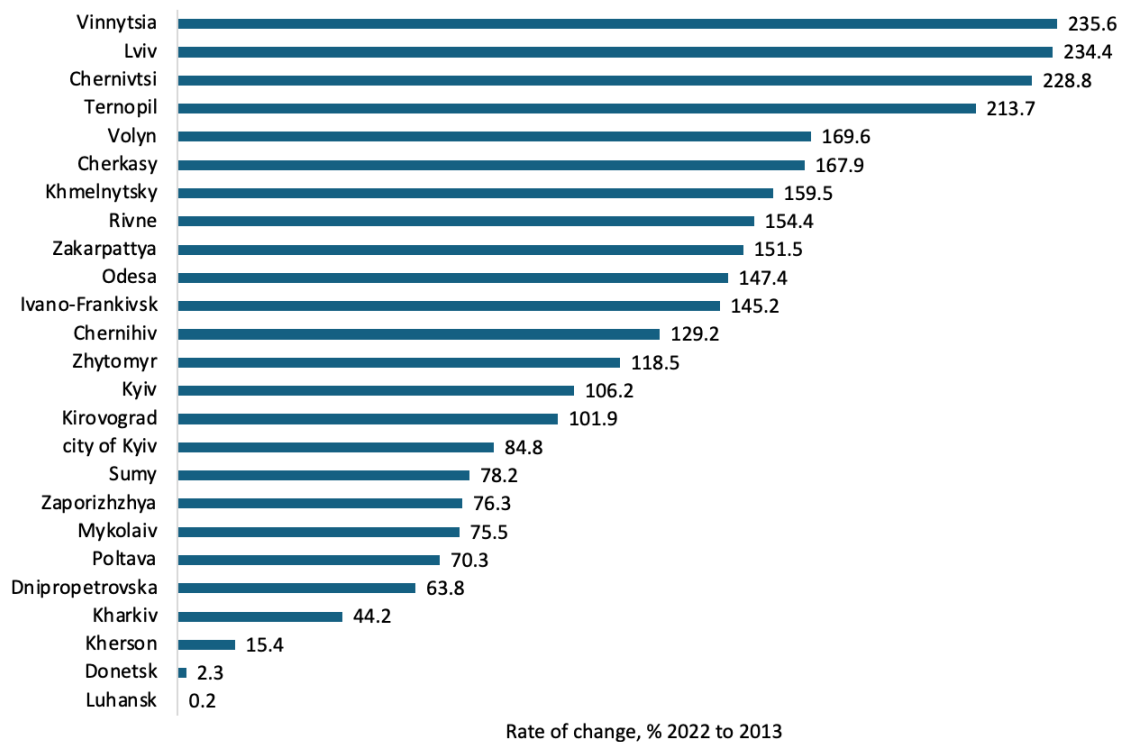
Figure 11: Structure of exports of goods from Ukraine by region in 2013 and 2022



Note: Percentages may not total 100 due to rounding.

Data source: State Statistics Service of Ukraine [7-10].

Figure 12: Dynamics of the top ten regions regarding exports of goods from Ukraine



Data source: State Statistics Service of Ukraine [7-10].

Table 4: Clustering of Ukraine's regions by the dynamics of goods exports in 2013-2022

Cluster	Regions	Exports of goods by regions of Ukraine						
		Specific weight in 2013, %	2015 to 2013, %	2019 to 2015, %	2021 to 2019, %	Specific weight in 2022, %	2022 to 2021, %	2022 to 2013, %
Ukraine (including unallocated volumes of goods by region)		100.0	60.2	131.3	136.0	100.0	64.8	69.7
I	Vinnitsia	1.1	124.7	171.8	90.0	3.6	122.2	235.6
	Lviv	2.0	93.4	182.5	133.2	6.9	103.1	234.4
	Chernivtsi	0.2	86.4	197.4	97.0	0.6	138.3	228.8
	Ternopil	0.6	79.7	149.2	156.3	1.8	115.0	213.7
II	Volyn	1.0	100.5	109.9	120.0	2.4	128.0	169.6
	Cherkasy	1.2	56.3	198.9	102.4	2.9	146.4	167.9
	Khmelnitsky	0.8	82.1	159.9	142.9	1.8	85.0	159.5
	Rivne	0.8	78.4	116.4	159.9	1.7	105.7	154.4
	Zakarpattia	2.1	84.2	136.1	113.1	4.5	117.0	151.5
	Odesa	2.6	106.1	80.1	122.7	5.4	141.4	147.4
	Ivano-Frankivsk	0.7	79.1	244.3	127.8	1.5	58.7	145.2
	Chernihiv	0.9	99.4	146.4	147.4	1.6	60.3	129.2
	Zhytomyr	1.1	72.8	162.9	107.3	1.6	93.1	118.5
	Kyiv	3.1	85.6	115.3	130.9	4.7	82.2	106.2
III	Kirovohrad	1.4	47.4	173.9	144.5	2.0	85.5	101.9
	City of Kyiv	19.5	70.9	142.9	122.7	23.7	68.3	84.8
	Sumy	1.5	65.6	145.6	120.1	1.6	68.2	78.2
	Zaporizhzhia	5.8	79.7	105.1	153.9	6.4	59.2	76.3
	Mykolaiv	3.4	73.7	134.3	160.6	3.7	47.5	75.5
	Poltava	4.2	55.8	141.9	151.7	4.2	58.5	70.3
IV	Dnipropetrovsk	15.5	65.3	123.6	153.8	14.2	51.4	63.8
	Kharkiv	3.1	66.0	107.9	127.3	2.0	48.8	44.2
	Kherson	0.6	64.6	112.5	154.0	0.1	13.8	15.4
	Donetsk	19.6	29.8	125.3	151.9	0.6	4.0	2.3
	Luhansk	5.6	7.3	59.3	109.8	0.02	5.2	0.2

Data source: State Statistics Service of Ukraine [7-10]. Note: comparisons across years are calculated by simple ratios.

2.4 Fourth stage

The fourth stage examines the impact of the annexation of the territory of the Autonomous Republic of Crimea and the partial occupation of the territory of the Donetsk and Luhansk regions on the sales of industrial products and their exports in 2014-2015. Table 5 shows the characteristics of Ukraine after the annexation of the territory of the Autonomous Republic of Crimea and the partial occupation of the territories of the Donetsk and Luhansk regions. As a result of the annexation of the territory of the Autonomous Republic of Crimea, Ukraine lost 27.0 thousand square kilometers of territory (4.5% of the total territory of the country), resulting in a reduction of 2.3 million people (5.2% of the total

population of Ukraine), UAH 30.6 billion in industrial products sales (1.7% of Ukraine's industrial products sales in 2015) and USD 1.02 billion in exports (2.7% of Ukraine's exports in 2015). In addition, according to the estimation from the data of State Statistics Service of Ukraine [7-10], Ukraine lost 16,300 square meters of territory (2.7% of the total territory of the country), yielding a reduction of 3.6 million people (8.1% of the total population of Ukraine), UAH 78.7 billion in industrial products sales (4.4% of Ukraine's industrial products sales in 2015) and USD 12 billion in exports (31.5% of Ukraine's exports in 2015).³

Table 5: Characteristics of Ukraine after the annexation of the territory of the Autonomous Republic of Crimea and partial occupation of the territories of Donetsk and Luhansk regions

Region	Area of the territory, thousands sq. km		Population, millions of people		Industrial products sold, UAH billion		Exports of goods, USD billion	
	2013	2014	2013	2014	2013	2015	2013	2015
Ukraine	603.5	560.2	45.3	39.3	1,354.8	1,776.6	63.3	38.1
Autonomous Republic of Crimea (including Sevastopol)	27.0	-	2.3	-	30.6	-	1.02	-
Donetsk region	26.5	0.019	4.3	2.1	220.6	190.7	12.4	3.7
Luhansk region	26.7	0.018	2.2	0.8	72.7	23.9	3.5	0.3

Data source: State Statistics Service of Ukraine [7-8].

2.5 Fifth stage

The fifth stage analyzes the specialization of Ukraine's regions in industrial production and exports in 2013-2021. Table D1 (Appendix D) shows the types of economic activity and industrial goods that developed most dynamically in 2013-2021. The vast majority of products were observed in the following types of economic activity: manufacture of food products (10) (8-20 regions specializing in this production), manufacture of textiles (13) (4-19 regions), manufacture of wearing apparel (14) (9-

³ Appendix C in the Tables C1 – C3 list the largest enterprises located in the annexed Autonomous Republic of Crimea and parts of the temporarily occupied territories of the Donetsk and Luhansk regions that have been lost and/or destroyed.

15 regions), manufacture of wood and products of wood and cork, except furniture (16) (1-21 regions), manufacture of rubber and plastic products (22) (5-22 regions), manufacture of machinery and equipment n.e.c. (28) (4-9 regions) and manufacture of furniture (31) (12- 24 regions).

Table D2 shows the characteristics of regional specialization in exports. Basic exported goods are defined as those goods that account for at least 10% of the region's total exports in 2021. The dynamic characteristic of exports of goods from the country's regions was assessed as the rate of change in 2021 compared to 2013. New products were among the top ten largest exports in 2021.

Table D3 shows the commodity groups that had the greatest impact on the regional export volume. Twenty one regions exported Cereals (10), while in 15 regions cereals accounted for more than 10% of the region's exports. Similarly, 13 regions exported animal or plant fats and oils (15), six of which classified this commodity group as a basic product. Moreover, nine regions exported wood and articles of wood (44); the commodity group is a basic product among five of the nine regions. Lastly, electric machines (85) were exported by eight regions and in five regions they were basic products.

New commodity groups that appeared in the top ten in 2021 compared to 2013 are plastics, polymeric materials and products made of them (39). Four regions specialized in this production. Moreover, new product groups that appeared in the top ten in 2021 compared to 2013 include milk and dairy products (04) (five regions specializing in this production), edible fruits and nuts (08) (three regions), clothing (61, 62) (three regions) and glass and glassware (70) (three regions).

3. Conclusions

Ukraine's full-scale invasion has generated an unprecedented impact on the Ukrainian economy, affecting the economy and manufacturing development of the whole country. However, this short note, including some simple and not exhaustive descriptive statistics, reveals that:

- Though with lower intensity, other shocks before 2022 affected Ukraine's economy.
- Not all the regions could react to these shocks uniformly, and not all the sectors were equally affected by the most recent low-scale invasion and, most importantly, by different shocks.

This simple overview shows that if manufacturing development is a crucial objective for Ukraine and industrial policy needs to regain a central role in the country's decision-making, measures must be designed and implemented by considering this heterogeneity. More vulnerable regions and weaker

groups of commodities will need special attention with additional ad hoc accompanying instruments that help the country to increase its resilience to different crises.

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Appendix A: Indices of industrial production by type of activity and main industrial groupings for 2013-2022

<i>percent to the previous year</i>											
	Code of CTEA-2010	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Industry	B+C+D	95.7	89.9	87.7	104	101.1	103	99.5	95.5	101.9	63.3
<i>Mining and manufacturing</i>	B+C	95.2	89.3	87.9	104.1	102.4	103	100.2	95	102.1	62.3
<i>Mining and quarrying</i>	B	100.8	86.3	89.8	101.1	96.5	103.4	98.4	97	101.4	70
<i>Mining of coal and lignite</i>	5	97.6	69.5	63.7	105.6	83.2	106.1	96.9	86.3	107	92.3
<i>Extraction of crude petroleum and natural gas</i>	6	96.3	98.3	96.9	99.1	101.8	102.5	100.3	98.1	97.8	91.8
<i>Mining of metal ores</i>	7	104.6	93.4	92.5	101.2	91.5	104.4	97.1	97.6	102.5	38.3
<i>Other mining and quarrying</i>	8	103	95.6	86.5	113.3	110.2	101.2	91.6	103.2	121.1	25.1
<i>Quarrying of stone, sand and clay</i>	8.1	100.4	100.4	86.6	116.9	110.2	100.6	91.6	107.5	118.5	24.9
<i>Mining and quarrying n.e.c.</i>	8.9	118	71.9	86.2	86.6	109.9	108.1	91.7	63.3	162.5	27.6
Manufacturing	C	92.7	90.7	86.9	105.6	105.2	102.9	100.9	94.1	102.4	59
<i>Production of foodstuffs, beverages and tobacco products</i>	10–12	95	102.5	89.1	107.4	106.3	98.7	103.3	99.2	94.6	78.4
<i>Manufacture of food products</i>	10	96.4	104.6	88.6	108.9	107.1	98.5	103.9	99.5	94.1	79
<i>Processing and preserving of meat and production of meat products</i>	10.1	110.5	100.5	100.2	104.1	104.3	99.9	102	100	103.9	89
<i>Processing and preserving of fish, crustaceans and molluscs</i>	10.2	105.1	98.7	78.5	128.4	109.2	114.1	104	97.4	112.1	60.3
<i>Processing and preserving of fruit and vegetables</i>	10.3	99.8	102.9	84.7	106	101.6	109.9	99.4	105.6	108.8	53.5

<i>Manufacture of vegetable and animal oils and fats</i>	10.4	92.6	121.5	85.9	118.4	117.5	97.9	113.7	104.8	80.4	75.3
<i>Manufacture of dairy products</i>	10.5	100.5	100.1	91.7	99.7	100.8	101.7	95.1	100.2	94.5	79.6
<i>Manufacture of grain mill products, starches and starch products</i>	10.6	96.7	100.6	101.1	103.1	98.9	89.2	104.1	93.6	100.6	75.7
<i>Manufacture of grain mill products</i>	10.61	102	100.5	94.7	97.7	95.1	91.2	104.2	87	90.8	87.2
<i>Manufacture of bakery and farinaceous products</i>	10.7	96.5	89.5	85.3	97.6	98.5	95	94	95.7	102.2	78
<i>Manufacture of bread; manufacture of fresh pastry goods and cakes</i>	10.71	93.6	93.5	87.4	96	95.4	93.2	91.1	95.3	102.8	80.4
<i>Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes</i>	10.72	100.8	82	80.7	101.4	105.1	99.2	99.3	96.5	101.9	73.8
<i>Manufacture of other food products</i>	10.8	85.5	110.8	77.6	111.3	102.2	98.3	93.4	87.1	109.4	78.1
<i>Manufacture of sugar</i>	10.81	58.9	166.8	69.1	133.6	100.9	89.6	82.8	67	131.9	-
<i>Manufacture of cocoa, chocolate and sugar confectionery</i>	10.82	100.5	76.2	83.2	97.2	106.5	107.7	111.3	98.8	100.7	73.5
<i>Processing of tea and coffee</i>	10.83	110.7	106.1	93.6	103.6	95.1	104	97.3	93.2	106.8	65.3
<i>Manufacture of condiments and seasonings</i>	10.84	98.6	93.1	84.2	100.8	103.3	100	101.6	104.4	95.5	70
<i>Manufacture of other food products n.e.c.</i>	10.89	119.6	112.6	74.7	93.8	102.3	104.9	64.1	92.6	89.7	79.8
<i>Manufacture of prepared animal feeds</i>	10.9	...	...	92.1	102.8	99.5	106.5	104.2	100	99.8	91.6

<i>Manufacture of beverages</i>	11	90.8	91.7	90.3	96.3	100.8	100.8	99.7	96.7	100.4	76.2
<i>Distilling, rectifying and blending of spirits</i>	11.01	84.3	93.7	91.8	86.4	88.7	93.3	95.6	100.4	103.2	92.5
<i>Manufacture of wine from grape</i>	11.02	94.3	97.1	131.4	103.5	97.2	88	85.6	80.2	98	49.8
<i>Manufacture of soft drinks; production of mineral waters and other bottled waters</i>	11.07	93.1	93.9	92.8	105.6	114.9	111.2	107.7	99.1	108.5	79.9
<i>Manufacture of tobacco products</i>	12	91.8	104.5	108.2	102.2	95.3	91.4	87.6	100.2	88.8	42
<i>Textile industry, sewing of clothes, leather, leather articles and other materials</i>	13–15	94.1	98.6	96.5	107.9	109.7	96.6	92.5	93.9	102.3	74
<i>Manufacture of textiles</i>	13	93.4	103.9	99.7	104.2	116.2	99.6	92.2	98.3	113.8	69.1
<i>Weaving of textiles</i>	13.2	85.4	98.1	102.6	101	110.6	97	87	91.9	94.7	70.8
<i>Manufacture of other textiles</i>	13.9	95.9	104.5	97.2	106.7	118.5	100.7	92.9	99.6	116.5	69.3
<i>Manufacture of wearing apparel</i>	14	95.2	102	94.7	107.7	107.3	95.6	89.8	89.6	90.4	80.1
<i>Manufacture of wearing apparel, except fur apparel</i>	14.1	96.3	95.6	94	109.4	108.1	95.3	90.2	89.9	89.1	80
<i>Manufacture of leather and related products</i>	15	92.7	84	97.1	112.3	108.3	95.4	97.9	97	109.9	71.1
<i>Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness; dressing and dyeing of fur</i>	15.1	113.2	81.4	99.8	119	120.5	95.7	95.5	121.7	119.3	68.4
<i>Manufacture of footwear</i>	15.2	82.6	85.7	95.8	108.7	101.1	95.3	99.6	80.4	100.3	74.4

<i>Manufacture of products of wood, manufacture of paper and printing</i>	16-18	102.7	96	77.4	98.7	108.8	102.2	94.8	97.1	105.6	63.9
<i>Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials</i>	16	100.7	103	101.3	107.5	105.4	109.2	96	91.6	114.7	71
<i>Saw-milling and planning of wood</i>	16.1	93.7	104.2	106.7	116.9	100	123.1	102.6	91.7	104	74.2
<i>Manufacture of products of wood, cork, straw and plaiting materials</i>	16.2	104.6	102.4	98.7	102.7	108.5	101.7	91.8	91.4	122.4	69
<i>Manufacture of paper and paper products</i>	17	105.2	94.3	70.5	95.5	108.4	97.8	92.9	101.7	103.3	62.5
<i>Manufacture of pulp, paper and paperboard</i>	17.1	102.1	93.3	95.9	103.2	110.4	103.9	96.7	101.2	108.6	63.2
<i>Manufacture of articles of paper and paperboard</i>	17.2	105.7	94.5	69.3	95	108.2	97.3	92.6	101.7	102.9	62.5
<i>Printing and reproduction of recorded media</i>	18	98.3	87.1	80	97.6	117.7	108.3	99.6	90.6	98.4	54.9
<i>Printing and service activities related to printing</i>	18.1	99	87.2	80.1	97.7	117.7	108.4	99.6	90.7	98.4	54.9
<i>Manufacture of coke and refined petroleum products</i>	19	89.2	78.7	82.7	106.8	93.4	106.8	103.1	98	105.4	33.4
<i>Manufacture of coke oven products</i>	19.1	92.9	78.1	83.7	110.7	81.4	104.5	92.9	95.1	97.8	41.8
<i>Manufacture of refined petroleum products</i>	19.2	77.3	81.2	...	...	...	...	...	...	...	...
<i>Manufacture of chemicals and chemical products</i>	20	80.7	85.8	81.9	103.2	102.3	115.3	112.9	105.1	99.9	38.2

<i>Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms</i>	20.1	69.4	76.3	82	101.3	98.6	123.7	124.6	106.4	94.2	27.1
<i>Manufacture of pesticides and other agrochemical products</i>	20.2	...	...	133.9	106.7	137.6	129.2	86.5	140.7	310.5	87.5
<i>Manufacture of paints, varnishes and similar coatings, printing ink and mastics</i>	20.3	94.6	92.7	88.8	113.2	103.4	102.9	115.8	115.8	92	55.1
<i>Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations</i>	20.4	109.2	97.8	77.9	99	100.3	104.8	89.4	101.9	100.9	59.6
<i>Manufacture of basic pharmaceutical products and pharmaceutical preparations</i>	21	111.8	101.9	91.9	110.4	103.6	95	103.7	103	97.4	70.2
<i>Manufacture of rubber and plastic products, manufacture of other non-metallic mineral products</i>	22,23	97.4	91.2	95	111.1	105.3	100.8	106.7	100.1	109.8	43.7
<i>Manufacture of rubber and plastic products</i>	22	99.5	90.8	92.1	111.2	106.2	104.3	102.7	98.4	103.8	58.9
<i>Manufacture of rubber products</i>	22.1	103.4	84.7	79.2	136.3	93.9	99.5	107.5	95.3	116.4	50
<i>Manufacture of plastics products</i>	22.2	98.9	91.8	93.5	108.8	107.6	104.8	102.2	98.7	102.6	59.9

<i>Manufacture of other non-metallic mineral products</i>	23	96.3	91.5	97	111.1	104.8	98.6	109.4	101.2	113.4	35.2
<i>Manufacture of glass and glass products</i>	23.1	92.5	89.6	88.9	102.1	107.3	99.2	115.4	97	107.8	44.3
<i>Manufacture of refractory products</i>	23.2	102.2	90	84.8	113.5	117.1	96.1	95.1	93.5	113.7	46.2
<i>Manufacture of clay building materials</i>	23.3	96.4	92.6	90.4	104.8	109.8	99	93.7	89.9	109.3	28.6
<i>Manufacture of ceramic tiles and flags</i>	23.31	94.5	86.3	88.2	101.4	115.4	102.8	92.6	93.4	108.2	22.3
<i>Manufacture of bricks, tiles and construction products, in baked clay</i>	23.32	100	103.9	95.5	112.1	98.7	90.2	96.5	80.9	112.5	46.3
<i>Manufacture of other porcelain and ceramic products</i>	23.4	97.2	94.8	101.1	90.4	96.3	105.2	91	84	113.1	39.8
<i>Manufacture of cement, lime and plaster</i>	23.5	94.9	92.3	97.4	105.7	101.4	99.2	99.2	107.1	113.5	48
<i>Manufacture of articles of concrete, cement and plaster</i>	23.6	96.3	94.1	100	118.6	98.8	97	127.7	90.5	113.5	33.9
<i>Cutting, shaping and finishing of stone</i>	23.7	...	...	58.4	108	129	94.3	94.6	103.7	98.2	23.7
<i>Manufacture of abrasive products and non-metallic mineral products n.e.c.</i>	23.9	103.4	77.9	118.5	121.2	117.4	100.7	99.3	143.5	119.8	20
<i>Manufacture of basic metals, manufacture of fabricated metal products, except machinery and equipment</i>	24,25	94.7	85.5	86.4	105	97.4	100.8	98.6	91.3	105.8	37.6

<i>Manufacture of basic metals</i>	24	94.4	85.3	86.9	105.2	94.5	99.9	97.8	91.5	106.2	33.5
<i>Manufacture of basic iron and steel and of ferro-alloys</i>	24.1	99.3	85.6	86.3	106.4	90	99.3	98	92	105.4	30.8
<i>Manufacture of tubes, pipes, hollow profiles and related fittings, of steel</i>	24.2	80.8	88.5	69.9	103.6	124.9	108.2	92	85.3	116	59.4
<i>Manufacture of other products of first processing of steel</i>	24.3	85.4	85.2	85.3	120.5	105.4	92.9	100.5	111.2	111.2	52.7
<i>Manufacture of basic precious and other non-ferrous metals</i>	24.4	95.8	86.6	109.8	84.5	126.1	101.3	95.6	83.7	96.7	21.2
<i>Manufacture of fabricated metal products, except machinery and equipment</i>	25	95.8	86.1	83.6	104	118.5	105.5	103.3	90.2	104.1	59
<i>Manufacture of structural metal products</i>	25.1	87	71.8	71.6	94.8	112.5	123.8	110.6	74.3	116.7	42.7
<i>Manufacture of tanks, reservoirs and containers of metal</i>	25.2	91.2	82.8	84.1	81	135.4	96.3	104	76.7	111.4	47.9
<i>Manufacture of steam generators, except central heating hot water boilers</i>	25.3	...	...	58.5	80.9	219.5	72.6	109.4	68.2	84.8	43.7
<i>Manufacture of weapons and ammunition</i>	25.4	...	...	103.5	108.4	130.7	115.2	100.3	74.9	111.2	92.8
<i>Forging, pressing, stamping and roll-forming of metal; powder metallurgy</i>	25.5	81.7	54.9	71.9	136.4	113.7	112.5	112.6	65.6	131.6	61.3
<i>Treatment and coating of metals; machining</i>	25.6	101	90.8	86.3	124.9	104.7	108.9	124.4	100	93.9	61.7

<i>Manufacture of other fabricated metal products</i>	25.9	100.4	91.3	88.6	105.1	109.9	103.1	91	105.2	101.5	59.8
<i>Engineering</i>	26-30	86.4	79.4	85.2	101.8	111.7	112.4	97.8	82.4	108.5	56.9
<i>Manufacture of computer, electronic and optical products</i>	26	86	77.9	71	109.3	119.6	122.8	91.6	75.2	110	58.9
<i>Manufacture of electronic components and boards</i>	26.1	...	...	81.3	133	86.1	100.1	113.6	83.8	115.1	81.1
<i>Manufacture of consumer electronics</i>	26.4	98.5	71.6	35.9	38.7	119.1	113.6	97.5	88.2	102	59.5
<i>Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks</i>	26.5	...	...	76	131.4	108	119.6	75.6	116.6	107	35.3
<i>Manufacture of irradiation, electromedical and electrotherapeutic equipment</i>	26.6	35	44.2	132.4	141	84	90.4	102.8	289.6	39.3	51.4
<i>Manufacture of electrical equipment</i>	27	91.1	100.9	83	107.7	113	105.2	94.7	99.1	119.3	65.8
<i>Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus</i>	27.1	98.9	116.5	73.1	116.3	120.2	105.5	90.3	94.8	115.6	78
<i>Manufacture of electric motors, generators and transformers</i>	27.11	107.6	114.2	65	121.4	122.3	106.6	91.7	74	114	56.5

<i>Manufacture of electricity distribution and control apparatus</i>	27.12	85.8	120.9	95.6	106.6	115.6	102.8	87.2	146.7	117.7	104.2
<i>Manufacture of batteries and accumulators</i>	27.2	93	55.8	79.9	106.5	93.4	77.4	97	118.1	109.3	40.4
<i>Manufacture of wiring and wiring devices</i>	27.3	74.1	86.5	94.7	95.2	103.6	106	127.6	95.3	112.7	55.7
<i>Manufacture of electric lighting equipment</i>	27.4	97.4	87.8	89.3	108.4	69.4	91	86.3	108.1	114	50.6
<i>Manufacture of domestic appliances</i>	27.5	91	84.4	89.3	118.9	113.8	108.5	90.3	117.2	120	69.7
<i>Manufacture of other electrical equipment</i>	27.9	69.4	101	103.5	83.6	123.1	111.8	71	90.3	169.3	35.9
<i>Manufacture of machinery and equipment n.e.c.</i>	28	93.5	88.7	91.1	100	104.4	110.7	102.5	84	103.1	40.6
<i>Manufacture of general-purpose machinery</i>	28.1	109.6	87.6	93.3	87.4	94.1	107.3	94.3	81	103.2	40.5
<i>Manufacture of other general-purpose machinery</i>	28.2	86.3	97	94.9	103.5	112.2	108.2	103.2	92.5	114.1	49.1
<i>Manufacture of agricultural and forestry machinery</i>	28.3	87.6	86.8	105.3	120.5	101.2	85.4	90.2	86.8	128.2	40.9
<i>Manufacture of metal forming machinery and machine tools</i>	28.4	62.3	75.6	101.9	99.5	105.1	101.8	107.2	66	88.4	64.8
<i>Manufacture of other special-purpose machinery</i>	28.9	84.3	86.6	77.7	113.9	118.7	131.3	115.6	81.9	89.6	33.7
<i>Manufacture of machinery for metallurgy</i>	28.91	84.9	93.2	93.2	106.4	103.6	99.7	109.5	87.4	72.3	13.9
<i>Manufacture of machinery for mining, quarrying and construction</i>	28.92	81.8	82	59	103.5	129.7	102.8	104.1	85.4	115.6	44

<i>Manufacture of machinery for food, beverage and tobacco processing</i>	28.93	81.5	74.4	108.3	127.7	100.7	100.2	94.4	92.4	115.6	49.7
<i>Manufacture of motor vehicles, trailers and semi-trailers and other transport equipment</i>	29,30	79.8	64.3	84.4	99	116.6	115.3	96.8	74.6	106.9	66.9
<i>Manufacture of motor vehicles, trailers and semi-trailers</i>	29	89.3	90.3	94.4	94.8	111.6	101.8	74.3	85.6	123.2	72.7
<i>Manufacture of motor vehicles</i>	29.1	68.3	54.2	42.3	74.7	162.3	89.7	130.2	81.2	155.8	46.7
<i>Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers</i>	29.2	...	...	110.1	105.9	104.4	95.7	80.7	94	116.6	61.6
<i>Manufacture of parts and accessories for motor vehicles</i>	29.3	93.3	96.5	140.5	99.6	101.6	106.2	58.5	87.5	105.2	95.7
<i>Manufacture of other transport equipment</i>	30	78.4	59.9	81.5	100.4	118.2	119.3	102.5	72.5	103.3	65.4
<i>Building of ships and boats</i>	30.1	...	...	89.3	98.9	113.4	108.6	116.4	79.1	88.8	31.4
<i>Manufacture of railway locomotives and rolling stock</i>	30.2	65.5	37.3	46.7	133.9	196.9	132.4	104.1	50.6	102.3	73.7
<i>Manufacture of air and spacecraft and related machinery</i>	30.3	...	...	87.1	90.9	99.3	117.4	100.7	83.3	106.6	63.4
<i>Manufacture of military fighting vehicles</i>	30.4	...	...	160.6	115.6	99.9	95.4	98.3	93.3	100	81.7

<i>Manufacture of furniture and other manufacturing, repair and installation of machinery and equipment</i>	31–33	90.9	93	83	106.2	111.9	110.4	103	89.6	109.9	58.3
<i>Manufacture of furniture</i>	31	102.8	98.4	88.7	103.6	120.3	101.6	110.3	95.4	116.6	58.3
<i>Other manufacturing</i>	32	94.7	91.5	72.1	100.7	106.3	106	102.4	91.4	93.8	71.5
<i>Manufacture of medical and dental instruments and supplies</i>	32.5	98.6	88.1	56.5	87.8	103.4	99.7	100.9	95.1	89	77.5
<i>Repair and installation of machinery and equipment</i>	33	87.9	91.9	82	109.5	107.2	118.5	98.1	84.8	107.8	55.6
<i>Repair and maintenance of fabricated metal products, machinery and equipment</i>	33.1	94.3	91.5	81.4	106.6	105.2	120	98.3	83.3	106.4	57.4
<i>Electricity, gas, steam and air conditioning supply</i>	D	98.9	93.4	87	103.1	94	103	95.6	99.1	100.8	69.4
<i>Electric power generation, transmission and distribution</i>	35.1	99.3	93.9	88	103	93.9	103.5	96.4	98.3	101.6	69.1
<i>Production of electricity</i>	35.11	100.2	93.7	86.2	104	91.4	104	99.8	96.4	98.5	68.7
<i>Distribution of electricity</i>	35.13	97.5	94.4	90.7	101.5	97.6	102.7	91.4	101.3	106.2	69.5
<i>Manufacture of gas; distribution of gaseous fuels through mains</i>	35.2	94.4	87.5	79.4	103.7	95.5	98.6	88.1	107.3	93.7	73

Note: The data of 2013-2021 excludes the temporarily occupied territories of the Autonomous Republic of Crimea and the city of Sevastopol. The data of 2014-2021 excludes a part of temporarily occupied territories in the Donetsk and Luhansk regions. The data of 2022 excludes the territories which the Russian Federation temporarily occupies or territories where the military actions are/were conducted.

Data source: State Statistics Service of Ukraine [1].

Appendix B: Commodity structure of exports from Ukraine in 2013-2022

Commodity group	2013		2015, Million USD	2015 in % to 2013	2019, Million USD	2019 in % to 2015	2021, Million USD	2021 in % to 2019	2022		2022 in % to 2021	2022 in % to 2013
	Million USD	Specific weight,%							Million USD	Specific weight, %		
Total	62,306	100	38,127	61	50,055	131	68,072	136	44,136	100	65	71
I. Live animals and livestock products	1,083	2	823	76	1,277	155	1,345	105	1,472	3	109	136
01 live animals	13	0	26	198	63	244	41	65	39	0	95	302
02 meat and meat preparations	349	1	378	108	712	189	846	119	924	2	109	265
04 milk and milk products; eggs; honey	692	1	387	56	454	117	379	83	452	1	119	65
II. Plant products	8,849	14	7,972	90	12,915	162	15,538	120	13,473	31	87	152
07 vegetables	111	0	97	88	185	190	197	107	103	0	52	93
08 eatable fruits and nuts	138	0	154	112	260	169	368	142	313	1	85	227
10 cereals	6,352	10	6,058	95	9,633	159	12,344	128	9,108	21	74	143
11 flour-grinding products	137	0	118	86	202	171	148	73	139	0	94	102
12 oil seeds and fruits	2,045	3	1,476	72	2,563	174	2,435	95	3,758	9	154	184
III. 15 Animal or plant fats and oils	3,497	6	3,300	94	4,732	143	7,037	149	5,949	14	85	170
IV. Finished food industry products	3,501	6	2,468	71	3,220	131	3,789	118	2,497	6	66	71
16 preparations from meat, fish	43	0	13	29	23	182	29	127	31	0	107	72
17 sugar and sugar confectionery	259	0	170	65	254	150	247	97	300	1	122	116
18 cocoa and cocoa preparations	555	1	187	34	205	109	224	110	147	0	66	26

19 preparations of grains	412	1	268	65	269	101	415	154	252	1	61	61
20 products of vegetables processing	404	1	184	46	192	104	201	105	223	1	111	55
22 alcoholic and non-alcoholic beverages, vinegar	362	1	184	51	211	115	310	147	205	1	66	57
23 remains and wastes of food industry	921	2	996	108	1,486	149	1,733	117	1,082	3	62	117
24 tobacco and industrial substitutes of tobacco	292	1	351	120	438	125	453	104	139	0	31	48
V. Mineral products	7,190	12	3,100	43	4,867	157	8,414	173	4,323	10	51	60
26 ores, slag and ashes	3,797	6	2,217	58	3,590	162	7,120	198	3,080	7	43	81
27 mineral fuel, petroleum and petroleum distillation products	2,689	4	488	18	863	177	784	91	1,040	2	133	39
VI. Products of chemical and allied industries	4 009	6	2,131	53	1,931	91	2,816	146	1,287	3	46	32
28 inorganic chemicals	1 645	3	967	59	796	82	980	123	315	1	32	19
29 organic chemical combinations	232	0	67	29	210	316	320	152	136	0	43	59
30 pharmaceutical products	251	0	155	62	251	161	315	126	235	1	75	94
31 fertilizers	1 171	2	534	46	225	42	623	277	170	0	27	15
VII. Polymeric materials, plastics and articles of them	785	1	413	53	722	175	1,104	153	470	1	43	60
VIII. Raw leather and curry leather	149	0	115	77	149	130	166	111	104	0	63	70
IX. Wood and articles of wood	1,144	2	1,107	97	1,400	127	2,006	143	1,885	4	94	165

X. Paper bulk from wood or other vegetable fibres	1,245	2	617	50	438	71	534	122	278	1	52	22
48 paper, paperboard	1,080	2	535	50	372	70	467	126	253	1	54	24
XI. Textile materials and articles of textiles	809	1	634	78	847	134	865	102	672	2	78	83
61 knitted clothes and knitted articles of clothes	165	0	97	59	124	128	135	109	122	0	90	74
62 textile clothes and textile articles of clothes	400	1	331	83	392	118	332	85	287	1	86	68
XII. Footwear, hats, umbrellas	199	0	151	76	188	125	190	101	175	0	92	88
64 footwear	192	0	145	76	174	121	173	99	150	0	87	78
XIII. Products from stone, gyps, cement	582	1	332	57	415	125	568	137	301	1	53	52
69 ceramic products	293	1	139	48	130	93	192	148	63	0	33	22
70 glass and preparations thereof	132	0	116	88	183	158	249	136	158	0	64	120
XV. Base metals and preparations thereof	17,525	28	9,471	54	10,256	108	15,991	156	6,003	14	38	34
72 ferrous metals	14,315	23	8,078	56	8,736	108	13,950	160	4,532	10	33	32
73 preparations from ferrous metals	2,557	4	917	36	1,042	114	1,293	124	1,051	2	81	41
XVI. Machines, equipment and mechanisms, electric and technical equipment	6,827	11	3,941	58	4,464	113	5,260	118	3,732	9	71	55

84 nuclear reactors, boilers, machines	3,732	6	1,962	53	1,692	86	2,121	125	1,175	3	55	32
85 electric machines	3,094	5	1,979	64	2,772	140	3,139	113	2,557	6	82	83
XVII. Ground, air and water transport facilities	3,274	5	679	21	882	130	676	77	361	1	53	11
86 railway locomotives	2,449	4	211	9	546	259	288	53	147	0	51	6
87 ground transport facilities excluding railway	375	1	176	47	137	78	167	122	133	0	80	36
88 aircrafts	312	1	191	61	70	37	66	94	28	0	42	9
89 vessels	139	0	102	74	130	127	156	120	52	0	33	37
XVIII. Optical, cinematographic apparatus	291	1	159	55	181	114	171	94	121	0	71	42
XX. Different industrial products	659	1	524	80	872	166	1,250	143	972	2	78	148
94 furniture	555	1	397	72	674	170	1,047	155	806	2	77	145
95 toys	96	0	72	75	120	168	111	93	103	0	93	108

Data source: State Statistics Service of Ukraine [2, 5, 6, 9 and 10].

Appendix C

Table C1: Largest enterprises of Ukraine located on the territory of the annexed Autonomous Republic of Crimea

Sector	Enterprises
Natural gas production	Chornomornaftogaz
Chemical industry	Crimean State Production Association “TITAN” Joint Stock Company “Soda Crimea Plant” Saky Chemical Plant
Shipbuilding	PJSC «Feodosia shipbuilding company «More» Ordzhonikidze shipyard in Sevastopol JSC Shipyard Zaliv (in Kerch) JSC Fiolent Plant
Wine production	Inkerman Vintage Wine Factory Crimean Wine and Brandy Factory “Bakhchisarai” Evpatoria Factory Classic Wine Massandra Winery Plant vintage wines and brandies “Koktebel” Factory of sparkling wine Novy Svet

Data source: InVenture (2020).

Table C2: Largest enterprises located in the occupied territories of Donetsk region

Sector	Enterprises
Coke and chemical industry	PJSC Yenakiieve Coke and Chemicals Plant PJSC Yasynivka Coke Plant PJSC Makeevkoks
Metallurgical industry	PJSC Donetsk Iron and Steel Works PJSC Yenakiieve Iron and Steel Works PJSC Makiivka Iron and Steel Works Yuzovsky Iron and Steel Works PJSC Khartsyzsk Pipe Plant
Electric power industry	Starobeshevska TPP Zuivska TPP
Machinery	PJSC “Azovmash” (railcar production) Novokramatorsk Machine-Building Plant (production of equipment for various sectors of the economy)

	<p>TOPAZ HOLDING LTD (development and production of complex radio engineering systems and complexes, including long-range radio engineering reconnaissance and early warning systems for air defense systems, in particular, the Kolchuga radio engineering reconnaissance station) – the equipment was completely expropriated to Russia.</p> <p>Khartsyzsk machine building plant – destroyed, equipment taken to Russia, Russian militants’ base is located on the territory.</p> <p>Yasynuvata machine-building plant – destroyed, equipment was expropriated to Russia.</p>
Chemical industry	<p>PJSC CONCERN STIROL (mineral fertilizer production)</p> <p>Europlast LLC (production of plastic products)</p>

Data source: InVenture (2020).

Table C3: Largest enterprises located in the occupied territories of Luhansk region

Sector	Enterprises
Machinery	<p>Luhansk Electric-Machine-Building Plant LLC – part of the equipment was taken to Russia, the rest was cut into scrap metal and stolen)</p> <p>Luhansk Machine-Building Plant named after A.Parkhomenko - destroyed, equipment taken to Russia</p> <p>PJSC Stakhanov Railway Car Building Works – equipment was taken to Russia, the territory is used as a base for Russian militants</p> <p>Luhansk plant of heat engineering equipment “LugaTerm” – destroyed, equipment taken to Russia.</p> <p>Luhansk plant of automotive valves “MARSHAL” – equipment cut into scrap metal and stolen.</p> <p>Luhansk plant of automotive radiators LUZAR (equipment cut into scrap metal and stolen)</p> <p>Autoclave plant – equipment cut into scrap metal and stolen</p>
Chemical industry	<p>PJSC Luhansk Chemical Pharmaceutical Plant – destroyed, equipment taken to Russia</p>
Defense industry	<p>PJSC Luhansk Cartridge Works – the equipment was completely expatriated to Russia, the plant is used as a repair base for militants’ equipment</p>

Metallurgical industry	<p>PJSC Stakhanov Ferro-alloy Plant – equipment partially was taken to Russia, the rest cut for scrap, a base of Russian militants is located on the territory.</p> <p>Luhansk pipe-rolling plant – production destroyed, equipment cut for scrap.</p> <p>PJSC Luhansk Foundry-Mechanical Plant – destroyed, equipment cut for scrap</p>
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Data source: InVenture (2020).

Appendix D

Table D1: Production volumes of the most dynamic types of economic activity and industrial products in Ukraine in 2013-2021

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
08. Other mining and quarrying											
Granite, crude or roughly trimmed	08.11	Million tons	39.8	32.8	82.5	38.7	118.0	61.3	158.4	154.1	Vinnitsia Dnipropetrovsk Zhytomyr Zaporizhzhia Kyiv Kirovohrad Mykolaiv Poltava Rivne Khmelnyskyi Cherkasy
Kaolin, not calcined	08.12	Million tons	1.2	1.8	153.9	1.8	101.6	2.3	125.7	196.5	Vinnitsia Donetsk Zhytomyr Zaporizhzhia Kirovohrad Mykolaiv Rivne Khmelnyskyi Cherkasy
Granite, crude or roughly trimmed	08.11	Million tons	39.8	32.8	82.5	38.7	118.0	61.3	158.4	154.1	Vinnitsia Dnipropetrovsk Zhytomyr Zaporizhzhia Kyiv Kirovohrad Mykolaiv Poltava

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
											Rivne Khmelnyskyi Cherkasy
10. Manufacture of food products											
Concentrated tomato puree and paste	10.39	000s tons	56.1	54.2	96.6	108	199.3	129.5	119.9	230.8	Vinnitsia Dnipropetrovsk Zaporizhzhia Kirovohrad Mykolaiv Odesa Poltava Rivne Temopil Kharkiv Kherson Chernihiv
Processed cheese (excluding grated or powdered)	10.51	000s tons	24.1	27.0	112.0	29.5	109.3	28.4	96.3	117.8	Vinnitsia Dnipropetrovsk Zhytomyr Zaporizhzhia Ivano-Frankivsk Kyiv Kirovohrad Luhansk Mykolaiv Odesa Poltava Rivne Sumy Temopil Kharkiv Kherson

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
											Khmelnyskyi Cherkasy Chernihiv
Flavoured liquid yoghurt or acidified milk (curdled milk, cream, yoghurt and other fermented products flavoured or containing added fruit; nuts or cocoa)	10.51	000s tons	110	106	96.4	136	128.3	140.5	103.3	127.7	Vinnitsia Dnipropetrovsk Donetsk Zhytomyr Zaporizhzhia Ivano-Frankivsk Kyiv Luhansk Lviv Mykolaiv Odesa Poltava Rivne Sumy Temopil Kharkiv Kherson Khmelnyskyi Cherkasy Chernivtsi Chernihiv city of Kyiv
Roasted coffee, not decaffeinated	10.83	000s tons	3.7	4.8	130.5	9.7	203.3	9.0	93.2	247.3	Dnipropetrovsk Zakarpattia Zaporizhzhia Kyiv Lviv Odesa Cherkasy

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
											Chernivtsi city of Kyiv
11. Manufacture of beverages											
Natural mineral not aerated waters	11.07	Million dal	40.4	36.0	89.1	63.4	176.1	66.5	104.9	164.6	Vinnitsya Volyn Dnipropetrovsk Zakarpattia Zaporizhzhya Ivano-Frankivsk Kyiv Luhansk Lviv Mykolayiv Odesa Poltava Rivne Sumy Temopil Kharkiv Kherson Khmelnyskiy Cherkasy
Waters, with added sugar, other sweetening matter or flavoured, i.e. soft drinks (including mineral and aerated)	11.07	Million dal	114	100	87.7	154	154.0	187.1	121.5	164.1	Vinnitsya Volyn Dnipropetrovsk Donetsk Zhytomyr Zakarpattia Zaporizhzhia Ivano-Frankivsk Kyiv Kirovohrad

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
											Luhansk Lviv Mykolaiv Odesa Poltava Rivne Sumy Temopil Kharkiv Kherson Khmelnyskyi Cherkasy Chernivtsi Chernihiv city of Kyiv
13. Manufacture of textiles											
Woven fabrics of man-made filament yarns obtained from high tenacity yarn, strip or the like (including nylon, other polyamides, polyester, viscose rayon)	13.20	Million m ²	46.0	45.4	98.7	67.7	149.1	73.1	108.0	158.9	Zhytomyr Kharkiv Cherkasy Chernihiv
Knitted or crocheted fabrics (excluding pile fabrics)	13.91	000s tons	1.9	5.3	278.9	7.5	141.5	8.8	117.3	463.2	Lviv Rivne Khmelnyskyi city of Kyiv
Articles of bedding filled other than with feathers or down (including quilts and eiderdowns, cushions, pouffes, pillows) (excluding mattresses, sleeping bags)	13.92	000s pcs	2504.4	2502.2	99.9	4505.8	180.1	7536.8	167.3	301.0	Volyn Dnipropetrovsk Donetsk Zhytomyr Zakarpattia Zaporizhzhia Ivano-Frankivsk Kyiv

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
											Kirovohrad Lviv Mykolaiv Odesa Sumy Ternopil Kharkiv Cherkasy Chernivtsi Chernihiv city of Kyiv
14. Manufacture of wearing apparel											
Women's or girls' jackets and blazers, of knitted or crocheted textiles	14.13	000s pcs	358	381	106.4	356	93.4	567	159.3	158.4	Dnipropetrovsk Zhytomyr Zakarpattia Kyiv Lviv Poltava Khmelnyskyi Cherkasy city of Kyiv
Hats and other headgear, knitted or crocheted or made-up from lace, felt or other textile fabric in the piece (but not in strips); hair-nets of any material	14.19	000s pcs	605	657.6	108.6	865.0	131.7	1137.6	131.4	187.9	Volyn Donetsk Zakarpattia Zaporizhzhia Lviv Mykolaiv Poltava Rivne Sumy Kharkiv Kherson

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
											Chernihiv city of Kyiv
Knitted or crocheted hosiery and footwear (including socks; excluding women's full-length/knee-length hosiery, measuring <67decitex, pantihose and tights, footwear with applied soles)	14.31	Million pairs	41.1	48.2	117.3	54.7	113.5	68.3	124.9	166.2	Volyn Dnipropetrovsk Zhytomyr Ivano-Frankivsk Kyiv Luhansk Lviv Mykolaiv Odesa Poltava Rivne Temopil Kharkiv Khmelnyskyi Chernivtsi
15. Manufacture of leather and related products											
Handbags of leather, composition leather, patent leather, plastic sheeting, textile materials or other materials (including those without a handle)	15.12	000s pcs	409	219	53.5	1099	501.8	1256	114.3	307.1	Vinnitsia Volyn Dnipropetrovsk Zakarpattia Rivne
16. Manufacture of wood and of products of wood and cork, except furniture											
Pine wood (Pinus sylvestris L.) sawn or chipped lengthwise, sliced or peeled, of a thickness > 6 mm	16.10	000s m ³	741	776	104.7	1979	255.0	2170	109.7	292.8	Vinnitsia Volyn Dnipropetrovsk Donetsk Zhytomyr Zakarpattia Zaporizhzhia Ivano-Frankivsk

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
											Kyiv Kirovohrad Luhansk Lviv Odesa Poltava Rivne Sumy Kharkiv Khmelnyskyi Cherkasy Chernivtsi Chernihiv
Coniferous wood continuously shaped (including strips and friezes for parquet flooring, not assembled)	16.10	000s tons	9.1	14.1	154.9	34.0	241.1	222.0	652.9	2439.66	Volyn Zhytomyr Zaporizhzhia Ivano-Frankivsk Lviv Poltava Rivne Chernivtsi Chernihiv
Particle board, of wood	16.21	000s m ³	2439	2160	88.6	2274	105.3	2934	129.0	120.3	Volyn Ivano-Frankivsk Lviv Rivne Sumy Kharkiv Cherkasy
Veneer sheets and sheets for plywood and other wood sawn lengthwise, sliced or	16.21	000s m ³	86.1	77.8	90.4	216.3	278.0	242.0	111.9	281.2	Vinnitsia Volyn Zhytomyr

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
peeled, of a thickness ≤ 6 mm of other wood than coniferous or tropical wood											Zakarpattia Ivano-Frankivsk Kyiv Kirovohrad Lviv Rivne Sumy Temopil Cherkasy Chernivtsi Chernihiv city of Kyiv
Assembled parquet panels of wood for mosaic floors	16.22	000s m2	135	156.0	115.6	194.2	168.7	1141.2	588.1	845.2	Zhytomyr
17. Manufacture of paper and paper products											
Graphic paper, paperboard : mechanical fibres ≤ 10 %, weight ≥ 40 g/m ² but ≤ 150 g/m ² , in rolls	17.12	000s tons	151.8	298.4	196.5	291.9	97.8	343.0	117.5	225.8	Zhytomyr Khmelnytskyi
20. Manufacture of chemicals and chemical products											
Paints and varnishes, based on acrylic or vinyl polymers dispersed or dissolved in an aqueous medium (including enamels and lacquers)	20.30	000s tons	73.5	60.7	82.6	78.1	128.7	80.6	103.2	109.7	Volyn Dnipropetrovsk Zhytomyr Ivano-Frankivsk Kyiv Kirovohrad Lviv Poltava Sumy Kharkiv Kherson Cherkasy Chernihiv

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
											city of Kyiv
Organic surface-active products and preparations for washing the skin; whether or not containing soap, p.r.s.	20.42	000s tons	7.2	10.5	145.8	13.8	131.4	17.7	128.3	245.8	Vinnitsia Volyn Dnipropetrovsk Zhytomyr Zaporizhzhia Ivano-Frankivsk Kyiv Odesa Kharkiv city of Kyiv
22. Manufacture of rubber and plastic products											
Other plates..., of polymers of ethylene, not reinforced, etc., thickness > 0,125 mm	22.21	000s tons	15.8	19.3	122.2	27.9	144.6	92	329.7	582.2	Vinnitsia Volyn Dnipropetrovsk Donetsk Kyiv Kirovohrad Lviv Odesa Rivne Kharkiv Kherson Chernihiv city of Kyiv
Other plates..., of polymers of styrene, not reinforced, etc.	22.21	000s tons	21.0	22.5	107.1	23.1	102.7	26.8	116.0	127.6	Dnipropetrovsk Zaporizhzhia Ivano-Frankivsk Kyiv Odesa Kharkiv city of Kyiv

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
Household articles and toilet articles, of plastics (excluding tableware, kitchenware, baths, shower-baths, washbasins, bidets, lavatory pans, seats and covers, flushing cisterns and similar sanitary ware)	22.29	000s tons	9.0	5.8	64.4	11.4	196.6	9.8	86.0	108.9	Vinnitsia Volyn Dnipropetrovsk Donetsk Zhytomyr Zakarpattia Zaporizhzhia Kyiv Lviv Odesa Poltava Sumy Temopil Kharkiv Kherson Khmelnyskyi Cherkasy Chernihiv city of Kyiv
23. Manufacture of other non-metallic mineral products											
Glass preserving jars, stoppers, lids and other closures (including stoppers and closures of any material presented with the containers for which they are intended)	23.13	000s tons	189	164	86.8	220	134.1	281	127.7	148.7	Dnipropetrovsk Zhytomyr Kyiv Rivne Kharkiv
Bottles of colourless glass of a nominal capacity < 2,5 litres, for beverages and foodstuffs (excluding bottles covered with leather or composition leather, infant's feeding bottles)	23.13	Million pcs	1409	1212	86.0	1477	121.9	1629	110.3	115.6	Dnipropetrovsk Zhytomyr Kyiv Odesa Rivne Kharkiv

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
Ceramic tableware, other household articles: others	23.41	t	483	645	133.5	1189.6	184.3	1183.9	99.5	244.9	Dnipropetrovsk Donetsk Zaporizhzhia Kyiv Kirovohrad
Building blocks and bricks of cement, concrete or artificial stone	23.61	000s tons	3038	3357	110.5	3419	101.8	4084	119.5	134.4	Volyn Dnipropetrovsk Donetsk Zhytomyr Zaporizhzhia Ivano-Frankivsk Kyiv Kirovohrad Luhansk Lviv Mykolaiv Odesa Poltava Rivne Sumy Temopil Kharkiv Kherson Khmelnyskyi Cherkasy Chernihiv city of Kyiv
Factory made mortars	23.64	000s tons	1759	1574	89.5	2434	154.6	4557	187.2	259.1	Dnipropetrovsk Donetsk Zhytomyr Zaporizhzhia Kyiv

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
											Kirovohrad Lviv Odesa Poltava Rivne Kharkiv Kherson Khmelnyskyi Cherkasy Chernivtsi city of Kyiv
Pre-coated aggregates	23.99	Million tons	2.5	4.9	192.4	6.0	123.2	14.0	233.2	552.8	Donetsk Zhytomyr Ivano-Frankivsk Odesa Poltava Rivne Temopil Kherson Cherkasy
25. Manufacture of fabricated metal products, except machinery and equipment											
Iron or steel reservoirs, tanks, vats and similar containers for solids, of a capacity > 300 liters (excluding fitted with mechanical or thermal equipment)	25.29	000s tons	1.3	2.2	169.2	12.5	568.2	16.2	129.6	1246.2	Vinnitsia Volyn Zaporizhzhia Kirovohrad Luhansk Mykolaiv Odesa Poltava Rivne Kharkiv Khmelnyskyi

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
Base metal mountings, fittings and similar articles suitable for furniture (excluding hinges, castors, locks and keys)	25.72	000s tons	1.2	1.1	90.1	2.9	263.2	2.6	91.6	217.3	Volyn Dnipropetrovsk Zaporizhzhia Ivano-Frankivsk Lviv Kharkiv Cherkasy Chernivtsi city of Kyiv
26. Manufacture of computer, electronic and optical products											
Passive networks (including networks of resistors and/or capacitors) (excluding resistor chip arrays, capacitor chip arrays, boards containing active components, hybrids)	26.12	Million pcs	1.4	1.2	85.7	3.5	291.7	4.2	120.0	300.0	Vinnitsia Zakarpattia Zaporizhzhia Ivano-Frankivsk Kyiv Kharkiv Chernihiv city of Kyiv
Machines for the reception, conversion and transmission or regeneration of voice, images or other data, including switching and routing apparatus	26.30	000s pcs	6.1	31.9	523.0	123	385.6	128	104.1	209.8	Zhytomyr Zakarpattia Odesa Kharkiv Khmelnyskyi city of Kyiv
27. Manufacture of electrical equipment											
Boards, cabinets and similar combinations of apparatus for electric control or the distribution of electricity, for a voltage > 1.000 V but ≤ 72,5 kV	27.12	000s pcs	8.8	7.1	80.7	27.3	384.5	34.5	126.4	392.0	Volyn Dnipropetrovsk Zaporizhzhia Ivano-Frankivsk Kyiv Kirovohrad Lviv

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
											Odesa Poltava Rivne Temopil Kharkiv Kherson Khmelnyskyi city of Kyiv
Electric lamps and lighting fittings, of plastic and other materials, of a kind used for filament lamps and tubular lamps, including lighting sets for Christmas trees and LED lamps	27.40	000s pcs	372	719	193.3	862	119.9	1133	131.4	304.6	Dnipropetrovsk Donetsk Zhytomyr Zaporizhzhia Ivano-Frankivsk Kyiv Kirovohrad Luhansk Lviv Odesa Poltava Temopil Kharkiv city of Kyiv
28. Manufacture of machinery and equipment n.e.c.											
Hydraulic cylinders	28.12	000s pcs	110	82.3	74.8	189	229.6	285	150.8	259.1	Vinnitsia Zaporizhzhia Lviv Kharkiv
Belt type continuous-action elevators and conveyors for goods or materials	28.22	pcs	844	780	92.4	1371	175.8	2811	205.0	333.1	Dnipropetrovsk Kyiv Kirovohrad Poltava Khmelnyskyi

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
											Cherkasy city of Kyiv
Sprayers and powder distributors designed to be mounted on or drawn by agricultural tractors (excluding watering appliances)	28.30	pcs	831	800	96.3	1058	132.3	1977	186.9	237.9	Vinnitsia Zaporizhzhia Kyiv Lviv Kharkiv
Disc harrows	28.30	pcs	1975	2252	114.0	3871	196.0	3569	92.2	180.7	Vinnitsia Dnipropetrovsk Zaporizhzhia Kyiv Kirovohrad Odesa Poltava Kharkiv Cherkasy
Machine tools for working wood, cork, bone, hard rubber, hard plastics or similar hard materials, n.e.c	28.49	pcs	262	82	31.3	863	1052.4	546	63.3	208.4	Volyn Zhytomyr Ivano-Frankivsk Kyiv Kirovohrad Lviv Odesa Cherkasy
Machines for cleaning, sorting or grading seed, grain or dried leguminous vegetables	28.93	pcs	2139	1279	59.8	2594	202.8	2926	112.8	136.8	Dnipropetrovsk Zhytomyr Zaporizhzhia Kyiv Poltava Kharkiv Cherkasy
29. Manufacture of motor vehicles, trailers and semi-trailers											

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
Other special-purpose motor vehicles n.e.c.	29.10	pcs	436	259	59.4	1313	506.9	3538	269.5	811.5	Kyiv Poltava Kharkiv Cherkasy
Containers specially designed and equipped for carriage by one or more modes of transport (including containers for transporting fluids)	29.20	000s pcs	1.4	2.8	200.0	4.2	150.0	6.2	147.6	442.9	Zaporizhzhia Lviv Odesa Rivne Khmelnyskyi Cherkasy
31. Manufacture of furniture											
Kitchen furniture	31.02	Million pcs	1.3	0.9	69.2	1.6	177.8	1.8	112.5	138.5	Vynnytsia Volyn Dnipropetrovsk Zhytomyr Zakarpattia Zaporizhzhia Ivano-Frankivsk Kyiv Kirovohrad Lviv Odesa Poltava Rivne Sumy Temopil Kharkiv Kherson Khmelnyskyi Cherkasy Chernivtsi city of Kyiv

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
Wooden bedroom furniture (excluding builders' fittings for cupboards to be built into walls, mattress supports, lamps and lighting fittings, floor standing mirrors, seats)	31.09	000s pcs	478	706	147.7	687	97.3	953	138.7	199.4	Vinnitsia Volyn Dnipropetrovsk Donetsk Zhytomyr Zakarpattia Zaporizhzhia Ivano-Frankivsk Kyiv Kirovohrad Lviv Mykolaiv Odesa Poltava Rivne Sumy Ternopil Kharkiv Kherson Khmelnyskyi Cherkasy Chernivtsi Chernihiv city of Kyiv
Wooden furniture for the dining-room and living-room (excluding floor standing mirrors, seats)	31.09	Million pcs	1.2	0.8	66.7	2.0	250.0	3.2	160.0	266.7	Vinnitsia Volyn Dnipropetrovsk Zhytomyr Zakarpattia Zaporizhzhia Ivano-Frankivsk Kyiv

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
											Kirovohrad Lviv Mykolaiv Odesa Poltava Sumy Ternopil Kharkiv Kherson Khmelnyskyi Cherkasy Chernivtsi Chernihiv city of Kyiv
Metal furniture (excluding office, medical, surgical, dental or veterinary furniture; barbers' chairs – cases and cabinets specially designed for hi-fi systems, videos or televisions)	31.09	000s tons	14.9	11.0	74.3	22.7	205.3	24.7	108.9	166.2	Volyn Dnipropetrovsk Zhytomyr Zaporizhzhia Kyiv Kirovohrad Rivne Kharkiv Khmelnyskyi Cherkasy Chernihiv city of Kyiv
35.1 Electric power generation, transmission and distribution											
Electricity produced by wind power plants	35.11	bln kW·h	0.6	1.1	183.3	2.0	181.8	3.8	190.0	633.3	Donetsk Zaporizhzhia Lviv Mykolaiv Odesa

Product name	Code	Unit of measure	2013	2015	2015 to 2013, %	2019	2019 to 2015, %	2021	2021 to 2019, %	2021 to 2013, %	Producing regions
											Ternopil Kherson
Electricity produced by solar power plants	35.11	bln kW·h	0.6	0.5	83.3	2.9	580.0	7.1	244.8	1183.3	Vinnytsia Dnipropetrovsk Zhytomyr Zakarpattia Zaporizhzhia Ivano-Frankivsk Kyiv Kirovohrad Lviv Mykolaiv Odesa Ternopil Kharkiv Kherson Khmelnytskyi

Data source: State Statistics Service of Ukraine [1].

Table D2: The top ten commodity group exported from Ukraine by regions in 2013 and 2021

2013					2021					
No	Code	Commodity group	Million USD	Specific weight, %	No	Code	Commodity group	Million USD	2021 in % to 2013	Specific weight, %
Ukraine										
1.	72	Ferrous metals	14,319.3	22,6	1.	72	Ferrous metals	13,950.1	97.4	20.5
2.	10	Cereals	6,371.3	10,1	2.	10	Cereals	12,343.8	193.7	18.1
3.	26	Ores, slag and ashes	3,917.5	6,2	3.	26	Ores, slag and ashes	71,19.6	181.7	10.5
4.	84	Nuclear reactors, boilers, machines	3,840.5	6,1	7.	84	Nuclear reactors, boilers, machines	2,120.9	55.2	3.1
5.	15	Animal or plant fats and oils	3,507.1	5,5	4.	15	Animal or plant fats and oils	7,037.2	200.7	10.4
6.	85	Electric machines	3,134.1	5,0	5.	85	Electric machines	3,139.3	100.2	4.6
8.	73	Preparations from ferrous metals	2,590.2	4,1	9.	73	Preparations from ferrous metals	1,293.0	49.9	1.9
10.	12	Oil seeds and fruits	2,048.1	3,2	6.	12	Oil seeds and fruits	2,435.2	118.9	3.6
7.	27	Mineral fuel, petroleum and petroleum distillation products	2,865.4	4,5	8.	44	Wood and articles of wood	2,000.5	174.9	2.9
9.	86	Railway locomotives	2,463.2	3,9	10.	94	Furniture	1,046.8	188.3	1.5
Total exports:			63,300.7	100.0				68,072.8	107.5	100.0

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Vinnytsia	1	15	Animal or plant fats and oils	148,521	21.9	2	15	Animal or plant fats and oils	196,149	132	15
	2	10	Cereals	66,588	9.8	1	10	Cereals	364,456	547	27.8
	3	44	Wood and articles of wood	64,243	9.5	3	44	Wood and articles of wood	140,131	181	10.7
	5	23	Remains and wastes of food industry	48,036	7.1	6	23	Remains and wastes of food industry	71,962	150	5.5
	6	25	Salt, sulphur, soil and stones	35,796	5.3	8	25	Salt, sulphur, soil and stones	33,690	94	2.6
	8	84	Nuclear reactors, boilers, machines	28,672	4.2	9	84	Nuclear reactors, boilers, machines	31,679	111	2.4
	9	12	Oil seeds and fruits	24,632	3.6	4	12	Oil seeds and fruits	86,390	351	6.6
	4	20	Products of vegetables processing	54,209	8	5	85	Electric machines	74,555	3,348	5.7
	7	62	Textile clothes and textile articles of clothes	32,468	4.8	7	4	Milk and milk products, eggs, honey	44,437	9,328	3.4
	10	34		22,870	3.4	10	22	Alcoholic and non-alcoholic	29,869	6,513	2.3

			Soap and surface active agents					beverages, vinegar			
Total exports:				679,308	100				1,309,319	193	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Donetsk	1	72	Ferrous metals	6,892,866	56	1	72	Ferrous metals	5,912,319	86	84
	2	27	Mineral fuel, petroleum and petroleum distillation products	1,449,282	12	7	27	Mineral fuel, petroleum and petroleum distillation products	54,522	3.8	0.8
	3	73	Preparations from ferrous metals	863,967	7	4	73	Preparations from ferrous metals	90,375	10.5	1.3
	4	84	Nuclear reactors, boilers, machines	493,365	4	3	84	Nuclear reactors, boilers, machines	272,264	55.2	3.9
	5	25	Salt, sulphur, soil and stones	280,745	2	2	25	Salt, sulphur, soil and stones	322,570	114.9	4.6
	9	74	Copper and preparations thereof	143,149	1	5	74	Copper and preparations thereof	78,162	54.6	1.1
	10	15	Animal or plant fats and oils	136,652	1	8	15	Animal or plant fats and oils	49,540	36.3	0.7
	6	31	Fertilizers	270,083	2	6	10	Cereals	58,050	114.5	0.8
	7	18	Cocoa and cocoa preparations	248,106	2	9	78	Lead and preparations thereof	33,213	167.6	0.5

	8	28	Inorganic chemicals	192,156	2	10	69	Ceramic product	22,917	69.4	0.3
Total exports				12,308,689	100				7,038,475	57	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in %	Specific weight, %
										to 2013	
Volyn	1	85	Electric machines	139,860	22	2	85	Electric machines	163,760	117	20
	2	84	Nuclear reactors, boilers, machines	97,273	16	4	84	Nuclear reactors, boilers, machines	85,313	88	10
	3	44	Wood and articles of wood	80,635	13	1	44	Wood and articles of wood	214,073	266	26
	4	94	Furniture	62,160	10	3	94	Furniture	91,073	147	11
	6	12	Oil seeds and fruits	27,539	4	6	12	Oil seeds and fruits	28,922	105	4
	8	39	Plastics and polymeric materials	17,433	3	7	39	Plastics and polymeric materials	27,390	157	3
	10	48	Paper, paperboard	13,751	2	8	48	Paper, paperboard	26,117	190	3
	5	4	Milk and milk products, eggs, honey	54,167	9	5	15	Animal or plant fats and oils	34,455	726	4
	7	87	Ground transport facilities excluding railway	18,323	3	9	10	Cereals	20,184	202	2

	9	62	Textile clothes and textile articles of clothes	16,360	3	10	8	Eatable fruits and nuts	19,979	417	2
Total exports:				628,811	100				832,547	132	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Dnipropetrovsk	1	72	Ferrous metals	3,696,704	38	1	72	Ferrous metals	4,792,919	130	39,4
	2	26	Ores, slag and ashes	2,516,356	26	2	26	Ores, slag and ashes	4,688,110	186	38,5
	3	86	Railway locomotives	405,867	4	5	86	Railway locomotives	217,712	54	1,8
	6	27	Mineral fuel, petroleum and petroleum distillation products	175,215	2	8	27	Mineral fuel, petroleum and petroleum distillation products	97,080	55	0,8
	7	15	Animal or plant fats and oils	158,229	2	4	15	Animal or plant fats and oils	500,309	316	4,1
	8	84	Nuclear reactors, boilers, machines	147,821	2	10	84	Nuclear reactors, boilers, machines	76,364	52	0,6
	9	73	Preparations from ferrous metals	1,277,892	13	3	73	Preparations from ferrous metals	764,157	60	6,3
	4	28	Inorganic chemicals	247,170	3	6	31	Fertilizers	179,184	402	1,5
	5	48	Paper, paperboard	203,894	2	7	10	Cereals	144,193	245	1,2

	10	85	Electric machines	123,333	1	9	39	Plastics and polymeric materials	94,767	153	0,8
Total exports:				9,794,853	100				12,163,792	124	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Zaporizhzhia	1	72	Ferrous metals	1,528,588	42	1	72	Ferrous metals	2,729,132	179	58
	2	84	Nuclear reactors, boilers, machines	852,364	23	2	84	Nuclear reactors, boilers, machines	452,885	53	10
	3	85	Electric machines	422,338	12	6	85	Electric machines	126,548	30	3
	4	26	Ores, slag and ashes	162,089	4	5	26	Ores, slag and ashes	234,390	145	5
	5	15	Animal or plant fats and oils	127,967	4	3	15	Animal or plant fats and oils	320,656	251	7
	7	28	Inorganic chemicals	65,927	2	8	28	Inorganic chemicals	65,766	100	1
	10	10	Cereals	51,161	1	4	10	Cereals	279,974	547	6
	6	87	Ground transport facilities excluding railway	69,794	2	7	23	Remains and wastes of food industry	72,186	395	2
	8	38	Other chemical products	63,620	2	9	74	Copper and preparations thereof	60,285	517	1

	9	81	Other base metals	52,463	1	10	27	Mineral fuel, petroleum and petroleum distillation products	57,795	186	1
Total exports:				3,678,507	100				4,740,997	129	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Zhytom yr	1	25	Salt, sulphur, soil and stones	126,787	21	6	25	Salt. sulphur. soil and stones	22,995	18	3
	3	84	Nuclear reactors, boilers, machines	64,852	11	4	84	Nuclear reactors. boilers. machines	31,606	49	4
	4	73	Preparations from ferrous metals	33,032	6	3	73	Preparations from ferrous metals	32,965	100	4
	7	68	Products from stone, gyps, cement	21,382	4	5	68	Products from stone. gyps. cement	31,446	147	4
	9	10	Cereals	19,535	3	1	10	Cereals	87,235	447	11
	10	48	Paper, paperboard	15,544	3	7	48	Paper. paperboard	22,553	145	3
	2	44	Wood and articles of wood	107,094	18	2	61	Knitted clothes and knitted articles of clothes	37,094	1,356	5
	5	62	Textile clothes and textile articles of clothes	30,986	5	8	69	Ceramic products	19,636	161	3
	6	18	Cocoa and cocoa preparations	21,547	4	9	12	Oil seeds and fruits	18,838	156	2

	8	85	Electric machines	20,641	3	10	70	Glass and preparations thereof	17,855	91	2
Total exports:				606,090	100				771,526	127	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight. %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight. %
Zakarpatty a	1	85	Electric machines	786,422	61	1	85	Electric machines	988,629	126	59
	3	62	Textile clothes and textile articles of clothes	70,196	5	2	94	Textile clothes and textile articles of clothes	80,147	146	5
	5	94	Furniture	54,824	4	4	84	Furniture	53,629	126	3
	6	84	Nuclear reactors. boilers. machines	42,436	3	5	62	Nuclear reactors. boilers. machines	46,508	66	3
	7	64	Footwear	28,697	2	7	64	Footwear	34,605	121	2
	8	63	Other finished textile articles	27,564	2	6	63	Other finished textile articles	37,134	135	2
	9	33	Essential oils	25,896	2	9	33	Essential oils	23,373	90	1
	2	44	Wood and articles of wood	78,176	6	3	12	Oil seeds and fruits	61,397	1,723	4
	4	95	Toys	57,336	4	8	8	Eatable fruits and nuts	23,540	371	1
	10	29	Organic chemical combinations	19,548	2	10	22	Alcoholic and non-alcoholic	23,019	688	1

								beverages. vinegar			
Total exports:				1,299,966	100				1,684,846	130	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Kyiv	1	15	Animal or plant fats and oils	362,752	18	3	15	Animal or plant fats and oils	260,623	72	10
	2	2	Meat and meat preparations	212,089	11	1	2	Meat and meat preparations	636,090	300	25
	3	10	Cereals	178,796	9	2	10	Cereals	359,654	201	14
	4	48	Paper, paperboard	121,793	6	4	48	Paper, paperboard	111,099	91	4
	6	40	Rubber	95,124	5	8	40	Rubber	75,800	80	3
	7	12	Oil seeds and fruits	90,661	5	5	85	Electric machines	96,615	147	4
	8	85	Electric machines	65,918	3	7	12	Oil seeds and fruits	76,787	85	3
	5	18	Cocoa and cocoa preparations	107,896	6	6	96	Different finished products	81,750	1,917	3
	9	49	Books, newspapers	53,995	3	9	70	Glass and preparations thereof	73,323	369	3
	10	94	Furniture	52,673	3	10	44	Wood and articles of wood	603,981	148	2
Total exports:				1,973,750	100				2,550,544	129	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Ivano-Frankivsk	1	44	Wood and articles of wood	76,781	16	3	44	Wood and articles of wood	125,063	163	11
	2	85	Electric machines	58,610	12	4	85	Electric machines	114,701	20	10
	4	4	Milk and milk products, eggs, honey	46,298	10	10	4	Milk and milk products. eggs. honey	13,134	28	1
	5	39	Plastics and polymeric materials	41,224	9	1	39	Plastics and polymeric materials	395,379	959	34
	6	84	Nuclear reactors, boilers, machines	36,926	8	5	84	Nuclear reactors. boilers. machines	53,586	145	5
	3	48	Paper, paperboard	51,769	11	2	29	Organic chemical combinations	198,779	14,659	17
	7	35	Albumens	19,280	4	6	25	Salt. sulphur. soil and stones	45,672	727	4
	8	41	Raw leather	16,961	4	7	28	Inorganic chemicals	44,411	669	4
	9	2	Meat and meat preparations	12,644	3	8	27	Mineral fuel. petroleum and petroleum distillation products	29,088	1,009	3
	10	68	Products from stone, gyps, cement	11,642	3	9	10	Cereals	29,009	846	3
Total exports:				471,720	100				1,165,243	247	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Kirovohrad	1	15	Animal or plant fats and oils	500,711	58	2	15	Animal or plant fats and oils	341,718	68	34
	2	84	Nuclear reactors, boilers, machines	104,283	12	4	84	Nuclear reactors, boilers, machines	88,751	85	9
	3	23	Remains and wastes of food industry	94,501	11	3	23	Remains and wastes of food industry	108,998	115	1
	4	10	Cereals	41,945	5	1	10	Cereals	375,591	896	7
	7	12	Oil seeds and fruits	10,372	1	6	12	Oil seeds and fruits	11,498	111	1
	5	25	Salt, sulphur, soil and stones	19,460	2	5	72	Ferrous metals	28,101	19,327	3
	6	26	Ores, slag and ashes	13,579	2	7	4	Milk and milk products, eggs, honey	10,858	377	1
	8	68	Products from stone, gyps, cement	9,553	1	8	17	Sugar and sugar confectionery	5,910	74	1
	9	85	Electric machines	8,379	1	9	44	Wood and articles of wood	5,685	77	1
	10	14	Plant materials for producing	8,301	1	10	29	Organic chemical combinations	4,073	2,144	0
Total exports:				857,237	100				1,021,479	119	100

2013					2021						
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Luhansk	6	48	Paper, paperboard	96,604	3	1	48	Paper, paperboard	63,215	65	38
	7	84	Nuclear reactors, boilers, machines	87,222	3	10	84	Nuclear reactors, boilers, machines	5,104	6	3
	8	29	Organic chemical combinations	84,286	2	2	29	Organic chemical combinations	15,291	18	9
	9	39	Plastics and polymeric materials	70,551	2	7	39	Plastics and polymeric materials	6,758	10	4
	1	72	Ferrous metals	1,602,233	45	3	62	Textile clothes and textile articles of clothes	11,890	68	7
	2	86	Railway locomotives	661,676	19	4	71	Natural or cultured pearls, precious stones, metals and preparations thereof	11,048	161	7
	3	27	Mineral fuel, petroleum and petroleum distillation products	346,998	10	5	38	Other chemical products	8,858	99	5
	4	31	Fertilizers	143,893	4	6	35	Albumens	7,246	187	4
	5	28	Inorganic chemicals	131,676	4	8	70	Glass and preparations thereof	6,529	84	4
	10	61	Knitted clothes and knitted articles of clothes	50,234	1	9	10	Cereals	5,310	-	3
Total exports:				3,543,581	100				167,896	5	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Lviv	1	85	Electric machines	320,975	25	1	85	Electric machines	527,893	165	18
	2	44	Wood and articles of wood	143,100	11	4	44	Wood and articles of wood	273,897	191	9
	4	94	Furniture	105,782	8	2	94	Furniture	421,511	399	14
	5	15	Animal or plant fats and oils	73,070	6	5	15	Animal or plant fats and oils	254,638	349	9
	6	62	Textile clothes and textile articles of clothes	66,312	5	9	62	Textile clothes and textile articles of clothes	73,803	111	3
	8	61	Knitted clothes and knitted articles of clothes	40,001	3	10	61	Knitted clothes and knitted articles of clothes	67,361	168	2
	9	63	Other finished textile articles	28,589	2	8	63	Other finished textile articles	82,396	288	3
	10	12	Oil seeds and fruits	28,588	2	7	12	Oil seeds and fruits	84,455	295	3
	3	20	Products of vegetables processing	133,970	10	3	10	Cereals	340,118	2,877	12

	7	48	Paper, paperboard	53,580	4	6	61	Knitted clothes and knitted articles of clothes	189,283	47	7
Total exports:				1,290,869	100				2,932,484	227	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Mykolayiv	1	10	Cereals	792,347	36	4	10	Cereals	1,936,085	244	56
	2	28	Inorganic chemicals	586,545	27	1	28	Inorganic chemicals	624,015	106	18
	3	84	Nuclear reactors, boilers, machines	296,695	14	6	84	Nuclear reactors, boilers, machines	57,178	19	2
	4	12	Oil seeds and fruits	278,844	13	3	12	Oil seeds and fruits	290,579	104	8
	5	22	Alcoholic and non- alcoholic beverages, vinegar	44,150	2	8	22	Alcoholic and non- alcoholic beverages, vinegar	22,487	51	1
	6	20	Products of vegetables processing	26,406	1	7	20	Products of vegetables processing	46,863	178	1

	7	15	Animal or plant fats and oils	22,222	1	2	15	Animal or plant fats and oils	309,000	1,391	9
	9	23	Remains and wastes of food industry	12,763	1	5	23	Remains and wastes of food industry	79,015	619	2
	8	89	Vessels	18,038	1	9	4	Milk and milk products, eggs, honey	16,060	185	1
	10	41	Raw leather	11,932	1	10	7	Vegetables	9,992	604	0
Total exports:				2,174,098	100				3,457,062	159	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Odesa	2	10	Cereals	257,623	16	1	10	Cereals	534,576	208	32
	4	12	Oil seeds and fruits	128,803	8	3	12	Oil seeds and fruits	102,010	79	6
	6	15	Animal or plant fats and oils	109,547	7	2	15	Animal or plant fats and oils	435,634	398	26
	7	23	Remains and wastes of food industry	74,220	5	5	23	Remains and wastes of food industry	57,896	78	3
	8	22	Alcoholic and non-alcoholic	57,464	4	7	22	Alcoholic and non-alcoholic	49,202	86	3

		beverages, vinegar						beverages, vinegar			
9	85	Electric machines	46,148	3	4	85		Electric machines	76,021	165	5
1	28	Inorganic chemicals	331,306	20	6	73		Preparations from ferrous metals	56,919	147	3
3	31	Fertilizers	217,842	13	8	89		Vessels	48,314	1,117	3
5	27	Mineral fuel, petroleum and petroleum distillation products	124,178	8	9	7		Vegetables	45,909	229	3
10	84	Nuclear reactors, boilers, machines	43,713	3	10	8		Eatable fruits and nuts	45,368	822	3
Total exports:			1,628,431	100					1,697,773	104	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Poltava	1	10	Cereals	116,381	4	2	10	Cereals	448,943	386	14
	3	84	Nuclear reactors, boilers, machines	110,106	4	5	84	Nuclear reactors, boilers, machines	66,861	61	2
	4	27	Mineral fuel, petroleum and petroleum	53,727	2	4	27	Mineral fuel, petroleum and petroleum	76,896	143	2

		distillation products						distillation products			
5	15	Animal or plant fats and oils	50,174	2	3	15		Animal or plant fats and oils	127,353	254	4
7	28	Inorganic chemicals	48,303	2	10	28		Inorganic chemicals	19,614	41	1
9	12	Oil seeds and fruits	26,120	1	9	12		Oil seeds and fruits	21,247	81	1
10	19	Preparations of grains	20,610	1	8	19		Preparations of grains	27,631	134	1
1	86	Railway locomotives	577,398	22	1	26		Ores, slag and ashes	2,035,385	-	64
6	4	Milk and milk products, eggs, honey	49,420	2	6	23		Remains and wastes of food industry	45,394	431	1
8	21	Other mixed foodstuffs	28,606	1	7	56		Cotton wool	37,471	1,749	1
Total exports:			2,654,641	100					3,189,527	120	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Rivne	1	44	Wood and articles of wood	117,078	24,3	1	44	Wood and articles of wood	212,384	181	30
	2	31	Fertilizers	98,360	20,4	4	31	Fertilizers	60,429	61	9
	4	70	Glass and preparations thereof	32,519	6,7	3	70	Glass and preparations thereof	67,545	208	10

5	94	Furniture	24,280	5,0	5	94	Furniture	60,410	249	9
7	10	Cereals	175,510	3,6	2	10	Cereals	85,175	486	12
9	8	Eatable fruits and nuts	13,965	2,9	6	8	Eatable fruits and nuts	56,802	407	8
10	62	Textile clothes and textile articles of clothes	134,768	2,8	8	62	Textile clothes and textile articles of clothes	20,088	149	3
3	25	Salt, sulphur, soil and stones	74,286	15,4	7	12	Oil seeds and fruits	37,345	294	5
6	85	Electric machines	18,306	3,8	9	15	Animal or plant fats and oils	17,633	1,413	3
8	84	Nuclear reactors, boilers, machines	16,799	3,5	10	4	Milk and milk products, eggs, honey	12,602	-	2
Total exports:			482,648	100				703,947	146	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Sumy	1	84	Nuclear reactors, boilers, machines	409,117	44	2	84	Nuclear reactors, boilers, machines	128,070	31	12

4	83	Other base metal product	46,188	5	4	83	Other base metal product	57,861	125	6
6	10	Cereals	37,315	4	1	10	Cereals	270,850	726	26
8	44	Wood and articles of wood	28,049	3	6	44	Wood and articles of wood	50,764	181	5
10	21	Other mixed foodstuffs	22,339	2	8	21	Other mixed foodstuffs	31,975	143	3
2	32	Tanning extracts	75,879	8	3	39	Plastics and polymeric materials	84,133	846	8
3	18	Cocoa and cocoa preparations	56,109	6	5	15	Animal or plant fats and oils	57,282	3,309	5
5	19	Preparations of grains	43,120	5	7	12	Oil seeds and fruits	34,420	245	3
7	31	Fertilizers	28,735	3	9	73	Preparations from ferrous metals	27,442	177	3
9	64	Footwear	26,097	3	10	87	Ground transport facilities excluding railway	26,122	270	3
Total exports:			924,567	100				1,060,854	115	100

2013					2021					
No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %

Ternopil	1	85	Electric machines	173,687	48	1	85	Electric machines	199,894	115	29
	2	10	Cereals	65,922	18	2	10	Cereals	119,019	181	18
	3	20	Products of vegetables processing	25,494	7	9	20	Products of vegetables processing	16,805	66	3
	4	2	Meat and meat preparations	22,261	6	4	2	Meat and meat preparations	50,632	228	8
	5	94	Furniture	20,975	6	5	94	Furniture	44,150	211	7
	6	12	Oil seeds and fruits	11,407	3	3	12	Oil seeds and fruits	98,184	861	15
	7	44	Wood and articles of wood	96,998	3	10	44	Wood and articles of wood	16,343	169	2
	10	39	Plastics and polymeric materials	2,924	1	5	39	Plastics and polymeric materials	17,034	583	3
	8	62	Textile clothes and textile articles of clothes	4,039	1	6	15	Textile clothes and textile articles of clothes	18,858	-	3
	9	41	Raw leather	3,081	1	7	35	Raw leather	18,535	31,415	3
Total exports:				365,086	100				678,878	186	100

2013					2021				
No.	Code		thousand USD		No.	Code		thousand USD	2021 in %

			Commodity group		Specific weight, %			Commodity group		to 2013	Specific weight, %
Kharkiv	1	84	Nuclear reactors, boilers, machines	346,793	18	2	84	Nuclear reactors, boilers, machines	220,759	64	12
	2	85	Electric machines	234,658	12	3	85	Electric machines	76,872	33	4
	3	10	Cereals	210,812	11	1	10	Cereals	396,079	188	22
	5	94	Furniture	84,458	4	9	94	Furniture	39,833	47	2
	7	69	Ceramic products	63,274	3	10	69	Ceramic products	37,915	60	2
	8	15	Animal or plant fats and oils	53,544	3	4	15	Animal or plant fats and oils	76,743	143	4
	9	19	Preparations of grains	52,156	3	5	19	Preparations of grains	69,344	133	4
	10	39	Plastics and polymeric materials	51,365	3	7	39	Plastics and polymeric materials	55,939	109	3
	4	27	Mineral fuel, petroleum and petroleum distillation products	168,479	9	6	73	Preparations from ferrous metals	62,046	174	3
	6	87	Ground transport	69,516	4	8	89	Vessels	43,530	460	2

			facilities excluding railway								
Total exports:				1,987,302	100			1,801,286	91	100	

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Kherson	1	10	Cereals	45,818	12	1	10	Cereals	84,268	184	20
	3	89	Vessels	39,290	11	4	89	Vessels	35,012	89	9
	4	44	Wood and articles of wood	33,065	9	8	44	Wood and articles of wood	17,555	53	4
	7	12	Oil seeds and fruits	20,412	6	6	12	Oil seeds and fruits	24,222	119	6
	10	20	Products of vegetables processing	13,625	4	10	20	Products of vegetables processing	9,783	72	2
	2	85	Electric machines	43,759	12	2	72	Ferrous metals	66,402	152	16
	5	23	Remains and wastes of food industry	28,544	8	3	23	Remains and wastes of food industry	38,865	136	9
	6	4	Milk and milk products, eggs, honey	22,950	6	5	15	Animal or plant fats and oils	33,142	603	8

	8	84	Nuclear reactors, boilers, machines	14,336	4	7	76	Aluminium and preparations thereof	20,220	204	5
	9	8	Eatable fruits and nuts	13,918	4	9	21	Other mixed foodstuffs	12,228	100	3
Total exports:				369,051	100,0				412,773	112	100,0

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Khmelnyskiy	1	85	Electric machines	121,227	25	3	85	Electric machines	65,587	54	7
	2	39	Plastics and polymeric materials	55,009	11	9	39	Plastics and polymeric materials	27,286	50	3
	3	4	Milk and milk products, eggs, honey	45,191	9	7	4	Milk and milk products, eggs, honey	30,158	67	3
	4	10	Cereals	36,625	8	1	10	Cereals	372,267	1,016	41
	5	12	Oil seeds and fruits	34,171	7	2	12	Oil seeds and fruits	85,185	249	9
	7	94	Furniture	30,215	6	6	94	Furniture	44,040	146	5
	6	69	Ceramic products	30,519	6	4	15	Animal or plant fats and oils	45,150	534	5
	8	84	Nuclear reactors,	19,303	4	5	72	Ferrous metals	44,682	551	5

			boilers, machines								
9	44		Wood and articles of wood	19,048	4	8	23	Remains and wastes of food industry	28,306	28,305	3
10	62		Textile clothes and textile articles of clothes	11,937	2	10	57	Carpets	23,400	196	3
Total exports:				488,973	100				918,138	188	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Cherkasy	2	10	Cereals	70,936	9	1	10	Cereals	305,212	430	34,5
	3	15	Animal or plant fats and oils	61,918	8	2	15	Animal or plant fats and oils	129,742	210	14,7
	4	12	Oil seeds and fruits	60,730	8	5	12	Oil seeds and fruits	37,273	61	4,2
	5	84	Nuclear reactors, boilers, machines	31,312	4	10	84	Nuclear reactors, boilers, machines	15,722	50	1,8
	8	23	Remains and wastes of food industry	25,685	3	7	23	Remains and wastes of food industry	25,590	100	2,9
	1	31	Fertilizers	164,061	21	3	19	Preparations of grains	67,720	1,410	7,7

	6	29	Organic chemical combinations	28,564	4	4	44	Wood and articles of wood	64,876	312	7,3
	7	20	Products of vegetables processing	27,687	4	6	94	Furniture	32,337	157	3,7
	9	85	Electric machines	24,445	3	9	4	Milk and milk products, eggs, honey	21,877	334	2,5
Total exports:				770,714	100				884,082	115	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Chernivtsi	1	84	Nuclear reactors, boilers, machines	34,641	28	8	84	Nuclear reactors, boilers, machines	7,253	21	4
	2	44	Wood and articles of wood	32,763	26	1	44	Wood and articles of wood	54,255	166	26
	3	62	Textile clothes and textile articles of clothes	18,765	15	7	62	Textile clothes and textile articles of clothes	9,428	50	5
	4	94	Furniture	6,351	5	3	94	Furniture	22,747	358	11
	5	85	Electric machines	6,305	5	2	85	Electric machines	46,858	743	23

7	20	Products of vegetables processing	3,309	3	10	20	Products of vegetables processing	5,008	151	2
8	39	Plastics and polymeric materials	2,790	2	6	39	Plastics and polymeric materials	9,713	348	5
6	64	Footwear	4,320	3	4	8	Eatable fruits and nuts	12,280	900	6
9	61	Knitted clothes and knitted articles of clothes	2,024	2	5	73	Preparations from ferrous metals	11,729	719	6
10	34	Soap and surface active agents	1,861	2	9	63	Other finished textile articles	5,855	703	3
Total exports:			125,316	100				207,308	165	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
Chernihiv	1	48	Paper, paperboard	126,508	23	3	48	Paper, paperboard	57,697	46	5
	2	10	Cereals	116,005	21	1	10	Cereals	589,942	509	50
	4	12	Oil seeds and fruits	28,978	5	2	12	Oil seeds and fruits	64,674	232	5
	6	64	Footwear	22,242	4	5	64	Footwear	35,741	161	3

7	84	Nuclear reactors, boilers, machines	18,685	3	8	84	Nuclear reactors, boilers, machines	21,733	116	2
8	56	Cotton wood	17,670	3	6	56	Cotton wood	27,245	154	2
3	44	Wood and articles of wood	41,926	8	4	15	Animal or plant fats and oils	52,303	585	4
5	4	Milk and milk products, eggs, honey	27,559	5	7	73	Preparations from ferrous metals	25,075	210	2
9	85	Electric machines	15,998	3	9	19	Preparations of grains	18,012	317	2
10	62	Textile clothes and textile articles of clothes	13,711	3	10	39	Plastics and polymeric materials	14,947	208	1
Total exports:			555,097	100				1,189,688	214	100

2013						2021					
	No.	Code	Commodity group	thousand USD	Specific weight, %	No.	Code	Commodity group	thousand USD	2021 in % to 2013	Specific weight, %
City of Kyiv	1	10	Cereals	4,083,677	33	1	10	Cereals	5,124,611	126	33
	2	15	Animal or plant fats and oils	1,639,839	13	2	15	Animal or plant fats and oils	3,757,114	229	25
	3	12	Oil seeds and fruits	1,137,628	9	3	12	Oil seeds and fruits	1,180,476	104	8

4	72	Ferrous metals	532,968	4	7	72	Ferrous metals	291,742	55	2
5	23	Remains and wastes of food industry	427,623	4	4	23	Remains and wastes of food industry	979,638	229	6
6	84	Nuclear reactors, boilers, machines	349,789	3	8	84	Nuclear reactors, boilers, machines	280,517	80	2
9	85	Electric machines	298,355	2	6	85	Electric machines	322,070	108	2
7	4	Milk and milk products, eggs, honey	335,463	3	5	31	Fertilizers	363,282	182	2
8	48	Paper, paperboard	331,663	3	9	44	Wood and articles of wood	251,273	310	2
10	27	Mineral fuel, petroleum and petroleum distillation products	289,516	2	10	30	Pharmaceutical products	237,554	123	2
Total exports:			12,336,851	100				15,331,048	124	100

Data source: State Statistics Service of Ukraine [7-10].

Table D3: Characteristics of main commodity groups exported from the regions of Ukraine

Region	Commodity groups		
	Basic (share in total exports of goods in 2021)	New (share in total exports of goods in 2021)	Dynamic (rate of change in 2021 to 2013)
Ukraine	Ferrous metals – 20,5% Cereals – 18,1% Ores, slag and ashes – 10,5% Animal or plant fats and oils – 10,4%	Wood and articles of wood – 2,9% Furniture – 1,5%	Animal or plant fats and oils – 200,7% Cereals - 193,7% Furniture - 188,3% Ores, slag and ashes - 181,7% Wood and articles of wood - 174,9% Ferrous metals - 97,4%
Vynnytsia	Cereals - 27,8% Animal or plant fats and oils – 15,0% Wood and articles of wood – 10,7%	Electric machines – 5,7% Milk and milk products, eggs, honey – 3,4% Alcoholic and non-alcoholic beverages, vinegar – 2,3%	Milk and milk products, eggs, honey - 9327,7% Alcoholic and non-alcoholic beverages, vinegar - 6513,1% Electric machines - 3348,2% Cereals - 547,3% Wood and articles of wood - 181,3% Animal or plant fats and oils - 132,1%
Volyn	Wood and articles of wood – 25,7% Electric machines – 19,7% Furniture – 10,9% Nuclear reactors, boilers, machines – 10,2%	Animal or plant fats and oils – 4,1% Cereals – 2,4% Eatable fruits and nuts – 2,4%	Animal or plant fats and oils - 726,0% Eatable fruits and nuts - 416,5% Wood and articles of wood - 265,5% Cereals - 202,3% Furniture - 146,5% Electric machines - 117,1% Nuclear reactors, boilers, machines - 87,7%
Dnipropetrovsk	Ferrous metals – 39,4% Ores, slag and ashes – 38,5%	Fertilizers – 1,5% Cereals – 1,2% Plastics and polymeric materials – 0,8%	Fertilizers - 402,2% Cereals - 244,9% Ores, slag and ashes - 186,3% Plastics and polymeric materials – 153,0% Ferrous metals - 129,7%
Donetsk	Ferrous metals – 84,0%	Cereals – 0,8% Lead and preparations thereof – 0,5% Ceramic products – 0,3%	Lead and preparations thereof - 167,6% Cereals - 114,5% Ceramic products - 69,4% Ferrous metals – 85,7%
Zhytomyr	Cereals – 11,3%	Knitted clothes and knitted articles of clothes – 4,8% Ceramic products – 2,6% Oil seeds and fruits – 2,4% Glass and preparations thereof – 2,3%	Knitted clothes and knitted articles of clothes - 1355,7% Cereals – 446,6% Glass and preparations thereof – 344,0% Ceramic products - 161,2% Oil seeds and fruits - 155,9%
Zakarpatia	Electric machines - 58,7%	Oil seeds and fruits – 3,6% Eatable fruits and nuts – 1,4%	Oil seeds and fruits - 1723,2% Alcoholic and non-alcoholic - 688,2%

		Alcoholic and non-alcoholic – 1,4%	Eatable fruits and nuts - 371,4% Electric machines - 125,7%
Zaporizhzhia	Ferrous metals – 57,6%	Remains and wastes of food industry – 1,5% Copper and preparations thereof – 1,3% Mineral fuel, petroleum and petroleum distillation products – 1,2%	Copper and preparations thereof - 516,9% Remains and wastes of food industry - 395,3% Mineral fuel, petroleum and petroleum distillation products – 185,9% Ferrous metals - 178,5%
Ivano-Frankivsk	Plastics and polymeric materials – 33,9% Wood and articles of wood – 10,7%	Organic chemical combinations – 17,1% Salt, sulphur, soil and stones– 3,9% Inorganic chemicals – 3,8% Mineral fuel, petroleum and petroleum distillation products – 2,5% Cereals – 2,5%	Organic chemical combinations - 14659,2% Mineral fuel, petroleum and petroleum distillation products - 1008,9% Plastics and polymeric materials - 959,1% Cereals - 846,2% Salt, sulphur, soil and stones– 727,4% Inorganic chemicals - 668,7% Wood and articles of wood - 162,8%
Kyiv	Meat and meat preparations – 24,9% Cereals – 14,1% Animal or plant fats and oils – 10,2%	Electric machines – 3,8% Oil seeds and fruits – 3,0% Different finished products – 3,2% Glass and preparations thereof – 2,9% Wood and articles of wood – 2,4%	Different finished products – 1916,8% Glass and preparations thereof – 369,4% Meat and meat preparations - 299,9% Cereals - 201,2% Wood and articles of wood - 147,5% Electric machines – 146,6% Oil seeds and fruits – 84,7% Animal or plant fats and oils – 71,8%
Kirovohrad	Animal or plant fats and oils - 33,5%	Ferrous metals - 2,8% Milk and milk products, eggs, honey - 1,1% Sugar and sugar confectionery - 0,6% Wood and articles of wood – 0,6% Organic chemical combinations – 0,4%	Ferrous metals - 19326,9% Organic chemical combinations - 2143,7% Milk and milk products, eggs, honey - 377,4% Wood and articles of wood – 77,3% Sugar and sugar confectionery – 74,2% Animal or plant fats and oils – 68,2%
Luhansk	Paper, paperboard – 37,7%	Knitted clothes and knitted articles of clothes - 7,1% Natural or cultured pearls, precious stones, metals and preparations thereof – 6,6% Other chemical products – 5,3% Raw leather – 4,3% Glass and preparations thereof – 3,9% Cereals – 3,2%	Raw leather - 186,9 Natural or cultured pearls, precious stones, metals and preparations thereof – 161,1% Other chemical products - 98,7% Glass and preparations thereof - 84,3% Cereals Knitted clothes and knitted articles of clothes - 67,6% Paper, paperboard – 65,4%

			Organic chemical combinations – 18,1%
Lviv	Electric machines – 18,0% Furniture - 14,4%	Cereals - 11,6% Knitted clothes and knitted articles of clothes – 6,5%	Cereals - 2876,8% Furniture - 398,5% Electric machines - 164,5% Knitted clothes and knitted articles of clothes - 47,3%
Mykolaiv	Cereals – 56,0% Inorganic chemicals – 18,1%	Milk and milk products, eggs, honey – 0,5% Vegetables – 0,3%	Vegetables - 603,7% Cereals - 244,4% Milk and milk products, eggs, honey - 184,9% Inorganic chemicals - 106,4%
Odesa	Cereals – 31,5% Animal or plant fats and oils – 25,7%	Preparations from ferrous metals – 3,4% Vessels – 2,9% Vegetables – 2,8% Eatable fruits and nuts – 2,7%	Vessels - 1117,1% Eatable fruits and nuts - 821,9% Animal or plant fats and oils - 397,7% Vegetables - 228,7% Cereals - 207,5% Preparations from ferrous metals – 147,2%
Poltava	Cereals - 14,1%	Ores, slag and ashes – 63,8% Remains and wastes of food industry – 1,4% Cotton wool – 1,2%	Cotton wool - 1749,4% Remains and wastes of food industry - 431,4% Ores, slag and ashes Cereals - 385,8%
Rivne	Wood and articles of wood – 30,2% Cereals – 12,1%	Oil seeds and fruits - 5,3% Animal or plant fats and oils - 2,5% Milk and milk products, eggs, honey - 1,8%	Animal or plant fats and oils - 1412,8% Milk and milk products, eggs, honey Cereals - 486,4% Oil seeds and fruits - 294,1% Wood and articles of wood – 30,2%
Sumy	Cereals - 25,5% Nuclear reactors, boilers, machines – 12,1%	Plastics and polymeric materials – 7,9% Animal or plant fats and oils – 5,4% Oil seeds and fruits – 3,2% Preparations from ferrous metals – 2,6% Ground transport facilities excluding railway – 2,5%	Animal or plant fats and oils - 3309,1% Plastics and polymeric materials - 846,2% Cereals - 725 Ground transport facilities excluding railway - 269,8% Oil seeds and fruits - 245,0% Preparations from ferrous metals - 176,6% Nuclear reactors, boilers, machines – 31,3%
Ternopil	Electric machines – 29,4% Cereals – 17,5% Oil seeds and fruits – 14,5%	Animal or plant fats and oils – 2,8% Raw leather – 2,7%	Raw leather - 31415,3% Animal or plant fats and oils Oil seeds and fruits - 860,7% Cereals - 180,6% Electric machines – 29,4%
Kharkiv	Cereals – 22,0%	Preparations from ferrous metals – 3,4%	Ground transport facilities excluding railway - 460,2%

	Nuclear reactors, boilers, machines – 12,3%	Ground transport facilities excluding railway – 2,4%	Cereals - 187,9% Preparations from ferrous metals - 173,5% Nuclear reactors, boilers, machines – 63,7%
Kherson	Cereals – 20,4%	Electric machines – 16,1% Animal or plant fats and oils – 8,0% Aluminium and preparations thereof – 4,9% Other mixed foodstuffs – 3,0%	Animal or plant fats and oils - 603,2% Aluminium and preparations thereof - 203,5% Cereals - 183,9% Electric machines – 151,7% Other mixed foodstuffs – 99,8%
Khmelnyskyi	Cereals – 40,6%	Animal or plant fats and oils – 4,9% Ferrous metals – 4,9% Remains and wastes of food industry – 3,1% Carpets – 2,6%	Remains and wastes of food industry - 28305,0 Cereals - 1016,4% Ferrous metals - 550,6% Animal or plant fats and oils - 534,4% Carpets - 196,4%
Cherkasy	Cereals - 34,5% Animal or plant fats and oils – 14,7%	Preparations of grains – 7,7% Wood and articles of wood-7,3% Furniture – 3,7% Milk and milk products, eggs, honey – 2,5%	Preparations of grains - 1409,9% Cereals - 430,3% Milk and milk products, eggs, honey - 334,4% Wood and articles of wood- 312,1% Animal or plant fats and oils - 209,5% Furniture - 157,4%
Chernivtsi	Wood and articles of wood – 26,2% Electric machines – 22,6% Furniture – 11,0%	Eatable fruits and nuts - 5,9% Preparations from ferrous metals - 718,7% Other finished textile articles - 2,8%	Eatable fruits and nuts - 900,3% Electric machines - 743,3% Preparations from ferrous metals - 718,7% Other finished textile articles - 702,8% Furniture - 358,1% Wood and articles of wood – 165,6%
Chernihiv	Cereals – 49,6%	Animal or plant fats and oils – 4,4% Preparations from ferrous metals – 2,1% Preparations of grains – 1,5% Plastics and polymeric materials – 1,3%	Animal or plant fats and oils - 584,6% Cereals - 508,6% Preparations of grains - 317,0% Preparations from ferrous metals - 209,8% Plastics and polymeric materials – 207,5%
City of Kyiv	Cereals – 33,4% Animal or plant fats and oils – 24,5%	Fertilizers – 2,4% Wood and articles of wood – 1,6% Pharmaceutical products – 1,6%	Wood and articles of wood – 310,0% Animal or plant fats and oils – 229,1% Fertilizers - 182,4% Cereals – 125,5% Pharmaceutical products – 122,8%

Data source: State Statistics Service of Ukraine [7-8].



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