

# Marketing Activities of Extractive Industry Enterprises in Ukraine in Overcoming the Consequences of the Corona Crisis

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## Abstract

The study evaluated the state of international activities of extractive industry enterprises of Ukraine in the conditions of overcoming the consequences of corona crisis. The system of indicators to assess the effectiveness of their marketing activities in conditions caused by the pandemic coronavirus COVID-19 was developed. The evaluation system proposed in the study includes the analysis of indicators of production volume of the main types of extractive industry products, the dynamics of kaolin mining volumes in Ukraine and the dynamics of sales volumes of extractive industry products by Ukrainian enterprises on international markets. Also the structure of sales volumes of extractive industry products by Ukrainian enterprises on international markets was determined. An important stage of the proposed research methodology is the assessment of indicators of convergence of international markets in the conditions of overcoming the consequences of corona crisis. In the process of the study a comprehensive assessment of the convergence of Ukrainian enterprises of extractive industry in the conditions of overcoming the consequences of corona crisis was carried out. The approach is based on the application of ranks summation method for rating international markets by the system of dynamic indicators. The results of the study made it possible to determine the marketing attractiveness of markets of Belgium, Canada, Netherlands, Bangladesh, Hong Kong China, Pakistan for the activities of domestic enterprises of extractive industry at them, and assess their convergence. The last stage of the research was an expert assessment of convergence indicators of international markets in the conditions of overcoming the consequences of the coronacrisis. As a result of such assessment four international convergent markets were identified - Belgium, Canada, the Netherlands, Hong Kong, which demonstrate favorable conditions for doing business at them, and which indicates the existence of convergent conditions for domestic mining companies to sell the commodity group "2507 Kaolin and other kaolin clays" at the markets".

*Keywords: international activities, conditions of overcoming the consequences of coronacrisis, assessments of convergence indicators of international markets, expert assessment of convergence indicators of international markets in conditions of overcoming the consequences of coronacrisis. As a result of this assessment, four international convergent markets and the existence of convergent conditions for sale are identified.*

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## 1. Introduction

In the structure of Ukraine's industry, the extractive industry occupies a significant share, so its development becomes a paramount importance for the new economic development of Ukraine in overcoming the consequences of the corona crisis.

As the global experience of marketing activities of extractive industry enterprises shows, no one enterprise, planning its activities for the long term, cannot rely on the stability of the market situation, especially in the conditions of the pandemic of COVID-19 coronavirus. Therefore, in order to develop systematically, extractive industry enterprises are forced to constantly adapt to changes in the external marketing environment, find their internal opportunities in accordance with external conditions, apply new technologies to improve the effectiveness of marketing activities, expand international distribution channels with an individual approach to the extractive industry sector.

In the conditions of overcoming the consequences of the corona crisis, when the world markets were being reshaped, the domestic enterprises of the extractive industry have a unique opportunity to significantly expand international sales markets and, accordingly, to increase sales volumes and profitability through enhanced international activities. However, the high level of competition in the international markets of the extractive industry products makes it necessary to implement modern marketing strategies, the effectiveness of which determines the overall efficiency of the enterprise. Therefore, it is very important to develop a system of indicators to assess the effectiveness of marketing activities of the industrial enterprise in the conditions caused by the COVID-19 coronavirus pandemic.

To research the marketing activities of the extractive industry enterprises of Ukraine it is necessary to evaluate the state of the mineral resource base in Ukraine, the dynamics of production and sales of products of domestic extractive industry, to predict the volume of consumption of products of domestic extractive industry, the characteristics of exports-imports operations of Ukraine with products of extractive industry, to examine trends of development of international markets of extractive industries and identify new markets, on which domestic enterprises will be able to increase their profits, contribute to the development of the extractive industry and attract investment to Ukraine.

## 2. Literature Review

The works of such scientists as V. Fediy, I. Hryhorenko, M. Krasnozhan, A. Makurin, K. Slyusarenko and others are devoted to the development of business activity of extractive industry enterprises in Ukraine. The purpose of their research was to identify the problems of the development of enterprises of the extractive industry and to find ways to solve them.

Economic aspects of the use of domestic extractive industry products were studied in the works of famous scientists, in particular A. Kich, A. Nezhyvenko, M. Hvesyuk, L. Cherchyk, D. Wardley and M. Johnson.

Theoretical and practical aspects of marketing activities of enterprises of the extractive industry in the domestic and international markets are widely covered in the scientific works of foreign and domestic researchers. In particular, the problem of using marketing research at the enterprise is considered in the works of such scientists as F. Kotler, G.

Armstrong, A. Voichak, A. Pavlenko, V. Kravchenko, V. Poltorak, A. Fedorchenko and many others. A. Tanasiichuk's works are devoted to the problems of searching new international markets of selling products, in which the changes that took place in the Ukrainian economy during the pandemic of the coronavirus COVID-19 and their impact on the development of marketing activities of domestic enterprises are taken into account. However, the issue of studying the marketing activities of extractive industry enterprises in Ukraine in overcoming the consequences of corona crisis requires a more detailed study, the development of a system of indicators to assess the effectiveness of their marketing activities in conditions caused by the pandemic of coronavirus COVID-19.

### 3. Results of the Study

Since 2014, due to the military conflict in the east of the country and the occupation of the territory of the Autonomous Republic of Crimea, the extractive industry has lost its position, but 2019 - 2021 - the pandemic period of the coronavirus COVID-19 added a further reduction in production and sales in certain sectors of the extractive industry. Therefore, the research of marketing activities of extractive industry enterprises is especially relevant at the current stage of economic development of the country.

Characteristically, the range of products of the extractive industry according to CTEA-2010 refers to group B "Extractive industry" and includes minerals that occur naturally in the form of solid rocks (coal and ore), in the liquid (oil) and gaseous state (natural gas). Accordingly, Group B, Sections 05 and 06 include the extraction of fuel and energy minerals (hard coal, brown coal, oil, gas); Sections 07 and 08 include the extraction of metal ores, other minerals and quarry products.

Some technical operations included in this section, in particular the production of liquid hydrocarbons, which can be performed by specialized units as industrial services in favor of third parties, are reflected in section 09.

Let's consider the state of activities of the domestic enterprises of the extractive industry in 2018 -2020, by the volume of production of the main types of products (Table 1).

**Table 1: Volumes of production of the main types of extractive industry products in Ukraine, 2011-2020, thousand tons**

Вид продукції	Production volume, mln tons			Deviation 2020 to 2018		Deviation 2020 to 2019	
	2018	2019	2020	+/-	%	+/-	%
1	2	3	4	+/-	%	+/-	%
Coal	26,3	25,5	24,2	-2,10	-8,68	-1,30	-5,37
Petroleum crude oil, including oil obtained from bituminous minerals	1,6	1,7	1,7	0,10	5,88	-	-
Natural gas condensate natural obtained from natural gas fields	0,7	0,7	0,8	0,10	12,50	0,10	12,50
Natural gas liquefied or in gaseous state	20,8	20,5	20,2	-0,60	-2,97	-0,30	-1,49
Gypsum and anhydrite	1,4	1,4	1,5	0,10	6,67	0,10	6,67
Limestone, limestone flux and other limestone stone for the manufacture of lime and cement (except crushed limestone filler and limestone stone of specified dimensions)	6,1	6,9	7,0	0,90	12,86	0,10	1,43

Вид продукції	Production volume, mln tons			Deviation 2020 to 2018		Deviation 2020 to 2019	
	2018	2019	2020				
Chalk	237	263	401	164,0	40,90	138,0	34,41
Building sands, such as clay, kaolin, feldspar (except siliceous and metal-bearing sands)	13,7	14,1	15,5	1,80	11,61	1,40	9,03
Crumb, granule and powder of travertine, eccausin, granite, porphyry, basalt, sandstone and other stone	14,2	12,7	16,0	1,80	11,25	3,30	20,63
Kaolin, other than calcined	2092	1844	1681	-411,0	-24,45	-163,0	-9,70
Peat (in conditional moisture) nonagglomerated fuel	540	540	272	-268,0	-98,53	-268,0	-98,53

Source: developed by the author [7] (data as of 1.09.2021)

In 2020, the increase in the production of major extractive industry products compared with 2019 amounted to 34.41% chalk, 20.63% crumb, granule and powder of travertine, eccausin, granite, porphyry, basalt, sandstone and other stone, 12,5% natural gas condensate from natural gas fields, 9,03% building sands such as clay, kaolin, feldspar (except siliceous and metal-bearing sands), 6,67% gypsum and anhydrite. Analyzing the production volumes of coal, kaolin, peat, natural gas liquefied or in a gaseous state, we can talk about the deterioration of economic indicators: the production volumes of these types of extractive industry products have significantly decreased, the deviation had a negative value.

The considered indicators of the state of production of the extractive industry show that the industry has a negative dynamics of development. In 2018, the production volumes of the main types of extractive industry products were large, in 2019 decreased by 8.2%, and in 2020 compared to 2019 there was a decrease of 11.9% and 21% compared to 2018. In our opinion, this decline in the production of major extractive industry products is due to the unstable situation in the world caused by the COVID-19 coronavirus pandemic.

Analyzing the volume of production in physical terms (million tons) for 2018-2020, it is determined that the most were produced such types of extractive industry products in Ukraine: kaolin, peat, chalk (Fig.1).

The largest volume in physical terms (million tons) in Ukraine is extracted kaolin. Kaolin is a rock consisting mainly of white kaolinite. The name comes from the name of area Kaolin (eng. Gaoling District) in China. Deposits of pure kaolin (white clay) occur relatively rarely. On the territory of Ukraine it can be found in Vinnytsia, Dnipropetrovsk, Zaporizhzhia, Sumy (Poloshky), Cherkasy and Donetsk regions.

The range of kaolin use is extremely wide: paper products, ceramic (porcelain, faience), electrical (insulators), refractory, aluminum production, textile, cable, rubber, chemical, soap-making, perfumery products, production of pencils and mineral paints, filler in pharmacy, etc.

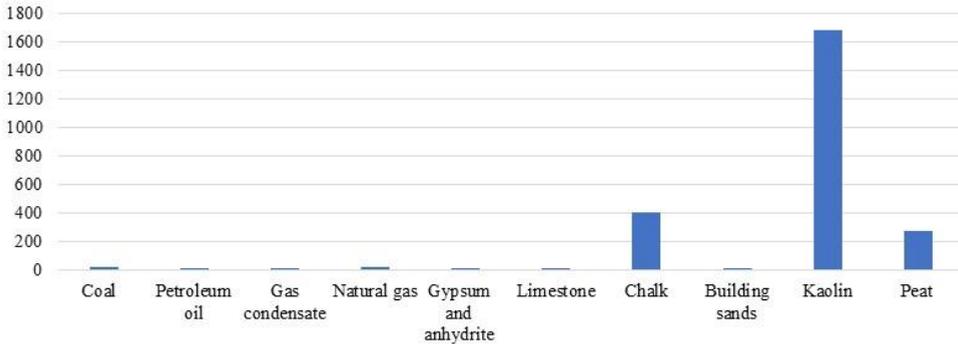


Figure 1. Analysis of production volumes of the main products of the extractive industry in Ukraine, million tons, 2020

Source: developed by the author [7] (data as of 15.09.2021).

The examination of the kaolin market in Ukraine shows that its production increased most dynamically in the period 2014-2016. Then the growth rate fell sharply, and since 2018 there has been a decline in mining volumes of the resource by 11-12% annually.



Figure 2: Dynamics of kaolin production in Ukraine, 2011-2020, mln t

Source: developed by the author [7] (data as of 15.09.2021).

The kaolin mined in Ukraine is used both for the domestic market and for export. In 2016-2017, more of the extracted raw materials were consumed domestically, and about 35% were exported. Since 2018, the situation has reversed - about 60% of Ukrainian kaolin has been exported.

The global kaolin market is growing in global demand due to increased production of products that use kaolin as a raw material: fiberglass, cement for industrial and residential construction, rubber products and plastics, in Asian and Latin American developing countries. The overall market size of kaolin in any country depends on the state of affairs in consumer industries, such as construction, paper industry, and ceramics production.

The world's kaolin reserves are estimated at 14-16 billion tons. By 2018, the leader in production of this raw material was the United States, with Germany in second place. In 2019, German kaolin producers overtook the Americans, and in 2020 the latter were squeezed out by China, which came in second place. India and the Czech Republic round out the top five kaolin producers.

Our country ranks among the world's top 10 in kaolin reserves. At the beginning of 2020, 42 deposits of this mineral were explored in Ukraine, 13 of which are actively developed - 9 are at a standstill, mining operations on the others have not been started yet.

To characterize the trends of exports and imports operations of Ukraine in the commodity group "25 Products of the extractive industry" we will analyze the dynamics of sales volumes on foreign markets over the past five years (UKTVED classification) (Table 2).

**Table 2: Dynamics of sales of extractive industry products by Ukrainian enterprises on international markets, 2016-2020, thousand USD**

Product group number	Product	Exports volume, thousand USD					Deviation, %	
		2016	2017	2018	2019	2020	2020/2018	2020/2019
2508	Clay, andalusite, kyanite and sillimanite	175887	240484	241208	223322	191877	-25,71	-16,39
<b>2507</b>	<b>Kaolin and other kaolin clays</b>	46004	51402	57804	<b>58130</b>	48633	-18,86	-19,53
2523	Cement	8564	11351	22934	26792	34686	33,88	22,76
2517	Pebbles, gravel, bithium or crushed stone	39520	52134	46620	37278	29766	-56,62	-25,24
2501	Salts	24975	22520	29357	28376	15769	-86,17	-79,95
2529	Feldspar	8268	15932	17500	17940	15765	-11,01	-13,80
2516	Granite, porphyry, basalt, sandstone	6874	7627	7486	7073	6213	-20,49	-13,84
2505	Natural sands of all types	6080	6327	6594	5446	4149	-58,93	-31,26
2520	Gypsum	1858	1501	1872	1653	2527	25,92	34,59
2504	Natural graphite	4177	7107	4825	2390	2366	-103,9	-1,01
2506	Quartz	3587	3840	5247	3129	2127	-146,7	-47,11
2530	Vermiculite, perlite	1158	921	799	887	1021	21,74	13,12
2521	Lime flux	9	38	142	328	378	62,43	13,23

Source: developed by the author [8] (data as of 15.09.2021).

Analysis of the dynamics of sales of extractive industry products by Ukrainian enterprises on international markets shows that the largest volumes of Ukrainian exports show commodity groups "2508 Clay, andalusite, kyanite and sillimanite", "2507 Kaolin and other kaolin clays", "2523 Cement" (Fig. 3).

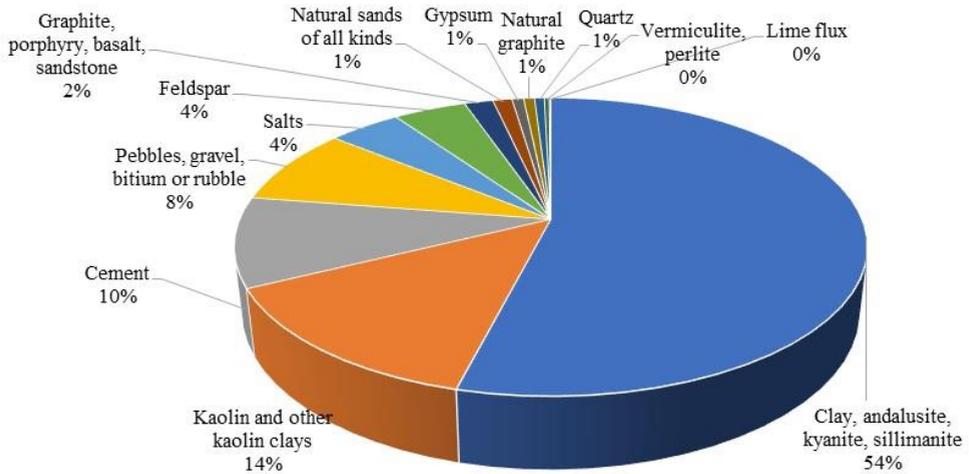


Figure 3. Structure of sales volumes of extractive industry products by Ukrainian enterprises on international markets, %, 2020

Source: developed by the author [8] (data as of 15.09.2021).

Maximum sales volumes of commodity group "2508 Clay, andalusite, kyanite and sillimanite" were in 2018 and amounted to 241,208 thousand dollars, in 2019-2020 there was a decrease in sales volumes. In 2020, exports of the "2508 Clay, Andalusite, Kyanite and Sillimanite" commodity group declined by 25.7% compared to 2018 and by 16.39% compared to 2021.

For commodity group "2507 Kaolin and other kaolin clays," the volume of exports had a maximum value in 2019 - 58130 thousand dollars, then in 2020 there has been a significant reduction in exports volumes of Ukrainian kaolin at 19.53% (Fig. 4).

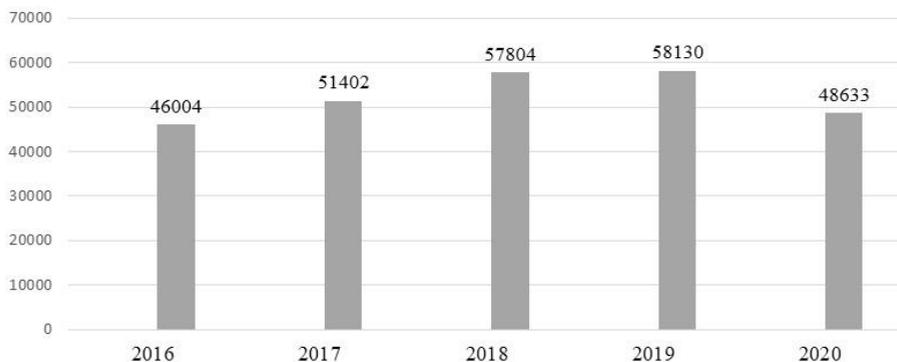


Figure 4: Dynamics of exports volumes of Ukraine in the commodity group "2508 Clay, andalusite, kyanite and sillimanite", 2016-2020, thousand dollars.

Source: developed by the author [8] (data as of 15.09.2021).

This situation can be explained by the negative impact of the crisis caused by the covid-19 pandemic, but some commodity groups have managed to increase exports volumes by

22.7%. The exports volume of the commodity group "2523 Cement" in 2019 increased to 26792 thousand dollars, and in 2020 to 34,686 thousand dollars (22,7%).

In such a situation, when the Ukrainian economy is unable to demonstrate market competitiveness, an increase in sales volumes of domestic extractive industry products in international markets becomes a key factor in increasing Ukraine's competitiveness in overcoming the consequences of the crisis.

Despite the positive dynamics of exports volumes of commodity group "2523 Cement", commodity item "2507 Kaolin and other kaolin clays" remains the leader in production and sales on international markets. Therefore, an important stage of the study is the analysis of the volume of exports-imports operations of Ukraine on this commodity group (Table 3).

**Table 3: Analysis of the volume of exports-imports operations of Ukraine for the commodity group "2507 Kaolin and other kaolin clays", in 2020, thousand dollars**

Indicators	Total volume, thousand dollars		Volume by commodity group, thousand dollars	
	export	import	export	import
Exports/imports volume	49388,093	53978,092	48633	4438
Trade balance	-4589,999		44195	
Share in world exports/imports (%)	0,3	0,3	3,3	0,3
Rating of world export/import	48	47	9	50
Average distance of importing/exporting countries (km)	3150	3334	2120	4808
Concentration of importing/exporting countries	0,04	0,06	0,18	0,24

Source: developed by the author [8] (data as of 15.09.2021).

From the data in Table 3 we can conclude that the total volume of the imports of Ukraine exceeds the exports volume by 8.5%, but for the commodity group "2507 Kaolin and other kaolin clays" the situation is diametrically opposite - the exports of kaolin is 440% higher than the imports of this product. This data suggests that the Ukrainian market in 2020 imported kaolin in small quantities, but the calculation of the exports-imports coverage ratio of commodity group "2507 Kaolin and other kaolin clays" is 10,96, which indicates the existing demand for these products on international markets. Consequently, domestic enterprises of the extractive industry should take into account the need of the domestic market and try to ensure the necessary kaolin production for self-sufficiency of Ukrainian market and meeting the demand on international markets.

In 2020 the share of exports of commodity group "2507 Kaolin and other kaolin clays" in the total volume of exports of domestic extractive industry products was 98,5%, which indicates the activation of international activities of enterprises engaged in the extraction of kaolin in Ukraine.

Analyzing other indicators of international activity of domestic enterprises of the extractive industry it can be seen that the share of exports of commodity group "2507 Kaolin and other kaolin clays" in total world exports was 3,3%, and ranking of Ukraine - 9 on the exports volume of kaolin confirms that this product is in demand on international markets, and therefore domestic enterprises need to accelerate the recovery of positions to the

pandemic.

It is also important to pay attention to the proximity of partner markets, the average distance in 2020 was 2120 km, and to the low value of the concentration index of competitors on these markets, which was - 0,18. We can conclude that during the period of corona crisis domestic enterprises tried to use all the opportunities for effective business activities. However, it is important now to understand the prospects for 2021-2022 and to prepare marketing solutions to quickly restore its positions on the international markets. The next stage of the study is to identify markets importers of Ukrainian kaolin, markets in which the share of Ukrainian imports of the commodity group "2507 Kaolin and other kaolin clays" decreased, and markets that increased the volume of global imports of kaolin (Table 4).

**Table 4: Dynamics of Ukraine's exports in the commodity group "2507 Kaolin and other kaolin clays" by market partners of importers of Ukraine, 2016-2020, thousand dollars.**

Importers	Volume of Ukrainian exports of the commodity group "2507 Kaolin and other kaolin clays", thousand dollars					Deviation	
	2016	2017	2018	2019	2020	2020/ 2018	2020/ 2019
1	2	3	4	5	6	7	8
<b>World</b>	<b>46004</b>	<b>51402</b>	<b>57804</b>	<b>58130</b>	<b>48633</b>		
Russian Federation	17236	20742	22875	22557	18331	-24,8	-23,1
Turkey	3793	4479	4495	5399	5633	20,2	<b>4,2</b>
Italy	4049	5527	5903	5352	4523	-30,5	-18,3
India	2574	2962	3088	3773	3084	-0,1	-22,3
Thailand	0	175	1434	2379	1844	22,2	-29,0
Belarus	2477	2250	2088	2165	1740	-20,0	-24,4
Egypt	907	1967	2776	2212	1701	-63,2	-30,0
Slovakia	812	550	692	959	1210	42,8	<b>20,7</b>
Germany	2907	638	1531	1360	1109	-38,1	-22,6
France	925	975	1552	1548	907	-71,1	-70,7
Spain	904	1494	1908	831	891	-114,1	<b>6,7</b>
Mexico	185	320	345	798	831	<b>58,5</b>	<b>4,0</b>
Czech Republic	335	752	606	903	732	17,2	-23,4
Saudi Arabia	9	2	41	333	712	<b>94,2</b>	<b>53,2</b>
Vietnam	721	917	822	1012	642	-28,0	-57,6
Sweden	556	906	674	804	633	-6,5	-27,0
Poland	539	665	714	757	594	-20,2	-27,4
Romania	598	390	613	631	565	-8,5	-11,7
Austria	1404	785	645	1063	507	-27,2	-109,7
Slovenia	298	382	610	424	358	-70,4	-18,4
Colombia	5	16	101	107	229	<b>55,9</b>	<b>53,3</b>
Moldova, Republic	446	304	450	652	181	-148,6	-260,2
Republic of Korea	31	150	271	50	152	-78,3	<b>67,1</b>
Bulgaria	1404	1332	113	109	131	<b>13,7</b>	<b>16,8</b>
Denmark	182	0	0	0	121	<b>100,0</b>	<b>100,0</b>
Finland	100	478	680	177	111	-512,6	-59,5

Importers	Volume of Ukrainian exports of the commodity group "2507 Kaolin and other kaolin clays", thousand dollars					Deviation	
	2016	2017	2018	2019	2020	2020/ 2018	2020/ 2019
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
Hungary	23	118	224	239	106	-111,3	-125,5
China	286	298	598	358	87	-587,4	-311,5
United Arab Emirates	378	78	185	273	78	-137,2	-250,0
Israel	120	81	70	86	44	-59,1	-95,5

Source: developed by the author [8] (data as of 15.09.2021).

Analysis of exports activities of Ukraine in commodity group "2507 Kaolin and other kaolin clays" in 2016-2020 shows the constant cooperation of Ukrainian extractive enterprises with partners on the markets of the Russian Federation, Turkey, Italy, India, Thailand, Belarus, Egypt, Slovakia, Germany and France. However, not all of the markets that are included in the top 10 partners of importers show a positive dynamics of import volumes of Ukrainian kaolin: in 2020 compared with 2018 the volume of Ukrainian exports of the product group "2507 Kaolin and other kaolin clays" increased on the markets of Turkey, Thailand, Slovakia, compared with 2019 increase occurred only in Turkey and Slovakia by 4,2% and 20,7%, respectively.

In 2020 compared to 2019 there was an increase in sales of Ukrainian kaolin on the markets of Spain, Mexico, Saudi Arabia, Colombia, Korea, Bulgaria and Denmark. That is, domestic extractive companies have found an opportunity to increase the share of sales in these markets, which positively affects the results of economic activities of enterprises and in general the development of the economy of Ukraine during the crisis.

In our opinion, the activity of Ukrainian enterprises in these markets should be increased, but it is also important to study the world rating of kaolin importers and identify those markets that have the best conditions for the activities of Ukrainian extractive enterprises (Table 5).

**Table 5: World importers rating for the commodity group "2507 Kaolin and other kaolin clays", 2016-2020, thousand dollars**

World importers	Import volume, thousand dollars					Deviation	
	2016	2017	2018	2019	2020	2020/ 2018	2020/ 2019
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>World</b>	<b>1860327</b>	<b>1958745</b>	<b>2024288</b>	<b>1864645</b>	<b>1661055</b>		
China	111482	119682	154743	144125	125880	-22,9	-14,5
Spain	110020	148204	148290	128905	116869	-26,9	-10,3
Germany	125740	123501	124675	106892	97815	-27,5	-9,3
Japan	143732	143286	129581	117050	91364	-41,8	-28,1
Belgium	122002	123453	115569	95175	88777	-30,2	-7,2
Mexico	80519	81653	88502	88160	84921	-4,2	-3,8
Italy	105259	112713	108823	102833	81361	-33,8	-26,4
Finland	114077	107499	102464	92175	72311	-41,7	-27,5

World importers	Import volume, thousand dollars					Deviation	
	2016	2017	2018	2019	2020	2020/ 2018	2020/ 2019
1	2	3	4	5	6	7	8
India	36385	39324	47563	56926	54344	12,5	-4,8
Canada	73960	74325	75805	71257	53712	-41,1	-32,7
Sweden	51968	54240	52860	52674	52628	-0,4	-0,1
Turkey	47984	53568	55409	44597	48482	-14,3	8,0
Taipei, China	53528	52769	56297	48034	44600	-26,2	-7,7
Republic of Korea	51316	52256	47034	47873	40624	-15,8	-17,8
Egypt	40252	46129	46163	41867	35440	-30,3	-18,1
France	37296	40131	45903	38589	33566	-36,8	-15,0
United States of America	44954	44796	38500	42627	30353	-26,8	-40,4
Russian Federation	29214	32917	33080	35124	29532	-12,0	-18,9
Vietnam	19730	22533	27072	26128	26480	-2,2	1,3
Indonesia	34451	33836	32001	26151	25231	-26,8	-3,6
Thailand	27555	26052	31203	29134	24961	-25,0	-16,7
Poland	19090	19924	25441	22639	24924	-2,1	9,2
Saudi Arabia	17080	18763	20130	20738	21729	7,4	4,6
United Kingdom	21707	23574	26172	22300	20842	-25,6	-7,0
Netherlands	26844	28901	30572	20167	20359	-50,2	0,9
Austria	21625	21514	19459	20508	19574	0,6	-4,8
Bangladesh	10857	12912	13868	17181	18889	26,6	9,0
Malaysia	22843	26140	25278	22273	17792	-42,1	-25,2
Slovakia	10965	10741	10746	11269	12164	11,7	7,4
United Arab Emirates	9210	9481	16746	15212	11329	-47,8	-34,3
Portugal	14594	15309	15810	14677	11262	-40,4	-30,3
Brazil	6708	8935	9482	10202	11147	14,9	8,5
Hong Kong China	11324	11088	11434	8991	11011	-3,8	18,3
Pakistan	6918	8438	9363	8994	10469	10,6	14,1
Algeria	8870	7540	17178	16501	10359	-65,8	-59,3
Hungary	5660	5705	5745	6220	5591	-2,8	-11,3
Ukraine	2038	3918	4402	4225	4438	0,8	4,8
Bulgaria	5245	5229	4988	3355	4166	-19,7	19,5
Israel	2594	3048	3224	2427	2433	-32,5	0,2

*Source: developed by the author [8] (data as of 15.09.2021).*

Analysis of the volume of world imports of the commodity group "2507 Kaolin and other kaolin clays" in 2016-2020 shows that the world leaders in kaolin consumption are the markets of China, Spain, Germany, Japan, Belgium, Mexico, Italy, Finland, India and Canada. Ukrainian extractive enterprises carry out the economic activity on some of them, for example on the markets of China, Italy, Finland and India for 2018-2020. There was a decrease in the volume of kaolin exports from Ukraine, on the markets of Spain and Mexico the volume of exports of commodity group "2507 Kaolin and other kaolin clays" from Ukraine increased, which positively affects the economic growth of the extractive industry as a whole.

On the basis of the results of the analysis of tables 3, 4, we can conclude that the crisis of 2019-2020, caused by the covid 2019 pandemic, negatively affected the ability of domestic extractive industry enterprises to increase their international activity, since for a considerable period of time the borders were closed and the manufacturing enterprises that use kaolin in the production of finished products were in quarantine. A number of bans and restrictions significantly affected the work of enterprises of extractive industry. In our opinion, domestic enterprises need to intensify international activities in order to increase the volume of exports of product group "2507 Kaolin and other kaolin clays" on the markets of Vietnam, Poland, Germany, Italy, Finland and India in 2021 - 2022. Now the markets, which are the world leaders in the consumption of kaolin: Japan, Belgium, Canada, the Netherlands, Bangladesh, Brazil, Hong Kong China, Pakistan require a detailed study of the presence of convergent conditions for the activities of Ukrainian enterprises of the extractive industry.

By determining the indicators of the average distance from the markets of Japan, Belgium, Canada, the Netherlands, Bangladesh, Brazil, Hong Kong China and Pakistan to Ukraine and the concentration of competitors on them, we can see that the markets of Japan and Brazil are at a great distance - 4376 km and 13699 km respectively, and have a high concentration of competitors on them, and therefore less attractive for domestic extractive companies that export product group "2507 kaolin and other kaolin clays".

Let's carry out the complex estimation of convergence of activity of the Ukrainian enterprises of extractive industry in the conditions of overcoming the consequences of corona crisis. The approach is based on the application of ranking summation method for rating the markets of foreign countries by the system of dynamic indicators, which will allow to determine the marketing attractiveness of the markets of Belgium, Canada, the Netherlands, Bangladesh, Hong Kong China, Pakistan for the activities of domestic enterprises of the extractive industry on them and also to assess their convergence (Table.6).

**Table 6: Estimation of indicators of convergence of international markets in the context of overcoming the consequences of the corona crisis, 2020**

№	Factor / foreign market	Belgium	Canada	Netherlands	Bangladesh	Hong Kong	Pakistan
1.	Economic growth, % (2020)	-6,3	-5,4	-3,8	2,4	-6,1	0,53
2.	GDP, billion dollars. (2020)	513,1	1847,7	926,7	215,0	266,3	258,1
3.	GDP per capita at purchasing power parity, thousand dollars. (2020)	48,2	45,9	54,2	4,8	56,2	4,6
4.	Inflation, % (2020)	1,2	0,7	1,3	5,7	0,3	9,7
5.	Household consumption, % (2020)	49,84	57,42	42,14	68,77	66,52	78,52
6.	Terms of trade index, % (2020)	95,15	107,12	93,74	65,4	96,83	54,1
7.	Trade Openness (quotas), % (2019)	163,01	64,78	156,2	36,76	355,85	30,4
8.	Confidence Index (FII) foreign direct investment inflow (2019)	-5,43	2,6	3,93	0,63	15,94	0,8
9.	Unemployment rate, % (2020)	6,01	9,48	4,09	5,3	5,8	4,65

No	Factor / foreign market	Belgium	Canada	Netherlands	Bangladesh	Hong Kong	Pakistan
10.	Commercial tax rate, % (2019)	55,4	24,5	41,2	33,4	21,9	33,9
11.	Taxes on international trade, %, (2019)	0	1,26	0	0	0	0
12.	Government Efficiency Rate, (2019)	1,03	1,73	1,8	-0,74	1,74	-0,68
13.	Corruption Control Rate (2019)	1,55	1,77	2,0	-0,99	1,67	-0,85
14.	Regulatory quality index (2019)	1,29	1,72	1,86	-0,93	1,98	-0,64
15.	Political stability index, (2019)	0,48	1,03	0,86	-0,92	-0,27	-2,25
16.	Business Freedom Index, points (2021)	80	81	81	56	96	61
17.	Trade Freedom Index, points (2021)	84	89	84	63	95	65
18.	Economic globalization, % (2018)	87,89	70,98	89,58	29,81	84,67	34,77
19.	Average indicator of net financial position per capita, thousand dollars. (2020)	6,83	7,1	7,57	5,03	5,48	4,93
20.	Population, million /% (2019)	11,5	37,59	17,34	163,05	7,51	216,57
21.	Global Competitiveness Index (2019)	76,4	79,6	82,4	52,1	83,1	51,4
22.	Value added by sectors from GDP (2019)	19,12	0	17,7	29,65	6,48	18,34

Source: developed by the author [9, 10] (data as of 15.09.2021).

Further, a group of experts consisting of 5 persons had converted the indicators of convergence of international markets (Table 6) into points on a 5-point scale (the evaluation scale was developed in accordance with the minimum and maximum values of the indicator on the world market) and identified foreign markets which had gained the maximum number of points in the rating of the studied international markets (Table 7).

**Table 7: Results of expert assessment of international markets convergence indicators in the context of overcoming the consequences of the corona crisis, 2020. (2019)**

No	Factor / foreign market	Belgium	Canada	Netherlands	Bangladesh	Hong Kong	Pakistan
1	2	3	4	5	6	7	8
1.	Economic growth, % (2020)	1	1	1	4	1	2
2.	GDP, billion dollars. (2020)	1	3	2	1	1	1
3.	GDP per capita at purchasing power parity, thousand dollars. (2020)	3	4	4	1	4	1
4.	Inflation, % (2020)	4	5	5	3	5	3
5.	Household consumption, % (2020)	3	4	3	4	4	4
6.	Terms of trade index, % (2020)	4	4	4	3	4	3
7.	Trade Openness (quotas), % (2019)	4	3	4	2	5	2
8.	Confidence Index (FII) foreign direct investment inflow (2019)	1	2	3	1	4	1
9.	Unemployment rate, % (2020)	3	4	2	3	3	2
10.	Commercial tax rate, % (2019)	3	5	4	5	5	4
11.	Taxes on international trade, %, (2019)	5	5	5	5	5	5

No	Factor / foreign market	Belgium	Canada	Netherlands	Bangladesh	Hong Kong	Pakistan
1	2	3	4	5	6	7	8
12	Government Efficiency Ratio, (2019)	4	5	5	3	5	3
13	Corruption Control Rate (2019)	4	4	5	1	4	1
14	Regulatory quality index (2019)	4	4	4	3	4	3
15	Political stability index, (2019)	4	5	4	3	3	2
16	Business Freedom Index, points (2021)	4	4	4	2	5	3
17	Trade Freedom Index, points (2021)	5	5	5	4	5	4
18	Economic globalization, % (2018)	5	4	5	2	5	3
19	Average indicator of net financial position per capita, thousand dollars. (2020)	5	5	5	3	4	3
20	Population, million /% (2019)	1	3	3	5	1	5
21	Global Competitiveness Index (2019)	4	4	5	3	5	3
22	Value added by sectors from GDP (2019)	4	1	5	5	3	4
	Ranking score	<b>76</b>	<b>84</b>	<b>87</b>	66	<b>85</b>	62

Source: developed by the author [9, 10] (data as of 15.09.2021)

As a result of a comprehensive study of indicators mentioned above on foreign markets, we can conclude that the economies of Belgium, Canada, the Netherlands and Hong Kong are close to the economy of Ukraine, which indicates a significant convergence of these markets, which is a prerequisite for the output of the commodity group "2507 Kaolin and other kaolin clays" domestic extractive enterprises on the markets of these countries. In turn, the choice of market for the supply products of the commodity group "2507 Kaolin and other kaolin clays" is determined by the availability of the extractive industry enterprises of the relevant financial, human and other resources, as well as the characteristics of the markets.

#### 4. Conclusion

Given the implications of the crisis, the important indicators for domestic extractive industries in the post-coronavirus period are the restoring ties with international partners, the restoring global demand for most products, the growth rate of exports volume of products "2507 Kaolin and other kaolin clays".

In the process of research of international marketing activity of enterprises of extractive industry in Ukraine the assessment of the state of mineral resource base in Ukraine has carried out, the dynamics of production and sales of products of domestic extractive industry has analyzed, the characteristics of export-import operations of Ukraine with products of extractive industry have carried out, the trends of international markets of extractive industry products has studied and new markets in which domestic enterprises will be able to increase profits, contribute to the development of the extractive industry and attract investment to Ukraine have identified.

The markets of Belgium, Canada, the Netherlands, Hong Kong are identified as those that

demonstrate favorable conditions for doing business in them, and it indicates the presence of convergent conditions for sale by domestic extractive enterprises the commodity group "2507 Kaolin and other kaolin clays" on the markets".

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