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Market Observation for Danube Navigation: Results for the Period January-March 2024

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1 Initial state of the market

The initial state of the main sectors of the Danube shipping market at the beginning of 2024 was determined by the dynamics of the third (Q3) and fourth (Q4) quarters of 2023, the overall results of 2023, as well as by the forecasts of the relative growth of the gross domestic product of the Member States of the European Union and the Eurozone, compared to 2023.

The decisive factor for the final state of the transport market in 2023 was the consequences of Russia's full-scale military invasion of Ukraine, which began in February 2022 and resulted in additional risks in the Danube shipping market, lower steel consumption in certain industries (especially in the construction and automotive industry), higher prices for energy resources and raw materials, and restrictions on grain exports by certain states, which caused a partial reorientation of the market.

In connection with the blockade of Ukrainian seaports by Russia, the formation and support of new logistical schemes for the export of Ukrainian products of the agricultural sector of the economy, based on the cluster of Danube ports of Ukraine, has gained special importance in the issue of ensuring global food security.

On the night of July 24, 2023, and in the following months, including the current period of 2024, Russia conducted a series of air attacks on Ukraine's port infrastructure on the Danube River. As a result of these attacks, grain hangars, storage facilities, administrative buildings, and communications in Ukraine's Danube ports were destroyed and disrupted.

Russia's aggressive actions in the Danube River ports have created conditions that pose direct security threats not only to Ukraine's Danube port infrastructure but also to the entire system of vessel traffic on the Lower Danube, including the safety of crew and personnel onboard vessels.

In the current circumstances, the Danube Commission continued in 2023 to work actively to maximize the promotion of exports of Ukrainian products of the agricultural sector of the economy, as well as imports of goods necessary for Ukraine in the framework of the *Danube Solidarity Lanes EU-Ukraine* initiative adopted in May 2022 in support of the European Union's solidarity measures with Ukraine, namely in support and development of the logistics regime of cargo transport based on the Danube ports of Ukraine, the Republic of Moldova and Romania, as well as canal "Danube - Black Sea" connection.

Despite the real threats to the safety of navigation on the Lower Danube, with the total growth of cargo turnover of Danube ports for 2023 by 124, 3% in comparison to the volumes in 2022, the highest growth was mainly shown by the ports of the Lower Danube: Romania - 118.5%; Republic of Moldova - 124%; Ukraine - 194%.

Navigation conditions on the Danube River in 2023, should be considered more stable compared to 2022.

Taking into account the relatively stable navigation conditions and the partial market reorientation, cargo transport volumes in 2023 were as follows:

- in cross-border traffic Germany/Austria (DE/AT): 2,745 thousand tonnes, or 95.8% of the volumes in 2022;
- in cross-border traffic Hungary/Slovakia (HU/SK): 3,975 thousand tonnes, or 92% of the volumes in 2022;
- in cross-border traffic Hungary/Croatia/Serbia (HU/HR/RS): 3,351 thousand tonnes, or 84% of volumes in 2022;
- transport volumes through the Danube-Black Sea Canal amounted to 23,364 thousand tonnes, or 135% of the 2022 volumes;
- transport volumes through the Sulina Canal amounted to 16,446 thousand tonnes, or 155.6% of the 2022 volumes, with transport volumes in the direction of the Black Sea amounting to 178% and in the upstream direction 108% of the corresponding figures for 2022.

According to the operational data, a total of 4,385 vessels passed through the Sulina Canal in 2023, of which 2,660 vessels in the downstream direction and 1,625 vessels in the upstream direction.

A total of 3,568 vessels passed through the Kiliya branch and the Bystroe Canal, of which 2,257 were from the Black Sea to the Danube River and 1,311 from the Danube River to the Black Sea.

The total cargo turnover of the Danube ports in 2023 was 95.1 million tonnes (*Table 1.1*), which was 124.3% of the volume in 2022, with the Lower Danube ports providing the main growth in cargo turnover.

Table 1.1. Cargo turnover of ports of the Danube countries in 2019-2023 (thousand tonnes)

Ports	**2019**	**2020**	**2021**	**2022**	**2023**
Germany	3,274	3,511	2,999	2,410	2,228
Austria	6,452	6,050	6,356	5,363	4,760
Slovakia	1,664	1,553	1,846	1,934	1,509
Hungary	6,064	6,742	5,715	4,063	3,604
Croatia	814	948	697	582	363.5
Serbia	9,735	8,164	13,610	12,023	12,931
Bulgaria	5,385	5,431	7,111	7,104	7,026
Romania	28,474	27,307	28,457	24,355	28,857
Republic of Moldova	1,299	1,185	1,819	2,144	2,668
Ukraine	5,629	4,055	5,505	16,505	32,021

A significant increase in cargo turnover of the Danube ports of Ukraine - a total of 32,021 million tonnes (the increase in cargo turnover at the end of 2023 was 194% compared to the results of 2022) was mainly due to the growth of export volumes of agricultural products, with grain cargo - 15.2 million tonnes, or 47.4% of the total volume, other bulk cargo - 4.9 million tonnes, and vegetable oil - 2.9 million tonnes (*Table 1.2*).

Table 1.2. Cargo turnover of Ukrainian Danube ports in exports in 2023 (thousand tonnes)

Type of cargo	**Izmail**	**Reni**	**Ust-Dunaisk**
Grain	9,276.38	4,932.62	811.36
Other bulk	2,358.53	1,783.53	562.83
Oil (bulk)	1,700.21	1,171.00	0.00

Over the last decade, about 14 to 16 Danube ports, including the Port of Constanța, have traditionally had a cargo turnover of about, or over, 1.0 million tonnes (*Table 1.3*). The highest cargo turnover was observed in ports operating in the transshipment of raw materials (ore, pellets, coal), finished products of ferrous metallurgy, and grain cargo.

Table 1.3. Cargo turnover of selected ports of the Danube countries in 2019-2023 (thousand tonnes)

Port	2019	2020	2021	2022	2023
Constanza*	14,555	14,505	15,851	15,393	21,698
Regensburg	1.387	1.553	1.303	1.083	1.021
Linz	3.280	3.411	3.482	2.929	2.916
Bratislava	1.663	1.553	1.773	1.910	1.414
Budapest-Czepel	1,130	1,192	1,199	985	889
Smederevo	4,040	2,612	3,168	3,053	2,823
Pancevo	1,517	2,051	1,920	1,589	1,641
Novi Sad	1,413	1,632	1,435	979	918
Prahovo	1,109	1,198	1,044	933	1,054
Tulcea**	1,675	1,225	1,332	489	167
Galati**	5,138	5,256	5,846	5,173	2,346
Giurgiulesti**	1,299	1,185	1,819	2,144	2,668
Izmail**	4,283	3,245	4,071	8,893	20,263
Reni**	1,275	790	1,370	6,826	10,071

* Cargo turnover by river vessels
** Cargo turnover by river and sea vessels

On the passenger transport market, the main cruise lines on the Upper Danube started to operate sporadically (and then with a strong increase) in March 2023; April, May, and June saw further increase in trips and the number of passengers carried.

A total of 561,500 passengers were carried on the Upper Danube lines in 2023, or 122.2% of the volume in 2022.

The situation was different on the lines towards the Danube Delta: the number of passengers carried on these lines amounted to only 28.5 thousand passengers, which is 38.5% of the number in 2022.

2 Assessment of navigation conditions on the Danube River in the first quarter of 2024

Snow reserves in the Danube River basin at the beginning of 2024 were estimated to be below the long-term average. The absence of river freezing and ice phenomena ensured uninterrupted navigation in the first quarter of 2024.

In period January-March 2024, water levels on the Upper Danube (Pfelling gauging station, *Figure 1*) were ensured in the mean water levels zone (MWL), with maximum and mean values higher than the values recorded in the same period of 2023. A similar pattern was observed on the Middle Danube (Budapest gauging station, *Figure 2*), as well as on the Lower Danube.

3 Dynamics of the freight and passenger transport market in the first quarter of 2024

3.1 Hydrological conditions and availability of vessel draughts

Hydrological conditions allowed the full loading of vessels, up to a maximum draught of up to 2.5-2.7 m, which led to efficient navigation throughout the first quarter of 2024, (*Table 3.1*).

Table 3.1. Draught of cargo vessels in the Q_1 2024 navigation season

Month	Loaded, going upstream, in cm	Loaded, going downstream, in cm
January	250/270 (250 *)	220/230 (220 *)
February	270 (270 *)	230 (230 *)
March	270 (270 *)	230/240 (220/240 *)

* Indicators for the corresponding period of 2023 are given for comparison

3.2 Transport volumes, cargo nomenclature and port turnover in the first quarter of 2024

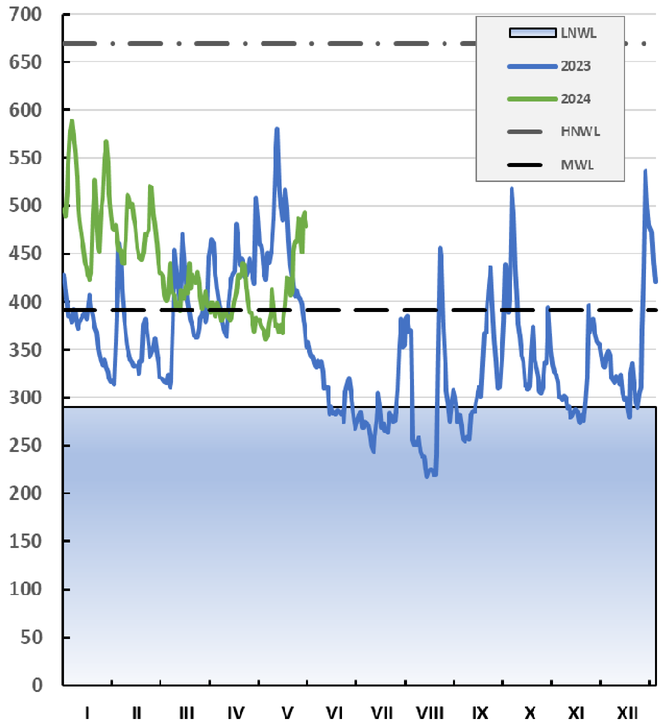
The state of the Danube River freight transport market in the first quarter (Q_1) of 2024 is shaped by the main factors listed in Chapter 1 and the continuing negative impact of the Russian aggression in Ukraine on the key industries and the agricultural sector of the economy in the Danube and adjacent basins.

In Q_1 2024, the volume of freight transported via the Jochenstein lock (cross-border connection Germany/Austria (DE/AT)) amounted to 887.6 thousand tonnes, which was 190.1% of the volume in Q_1 2023.

In cross-border traffic Hungary/Slovakia (HU/SK):

- volume of cargo transport through the Gabcikovo lock (cross-border connection Hungary/Slovakia) in Q_1 2024 amounted to 1,288 thousand tonnes (130.7% of Q_1 2023 volumes);
- volume of transported cargo by nomenclature in Q_1 2023 and 2024 are given in *Figure 3*, for 2019-2024, and in *Tables 3.2* and *Table 3.3*.

(a)



(b)

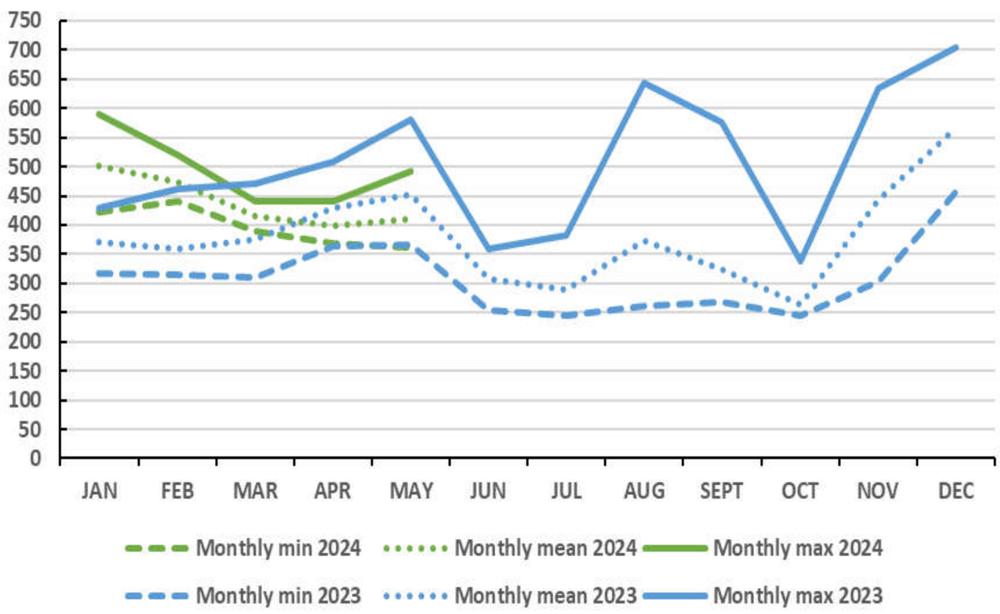
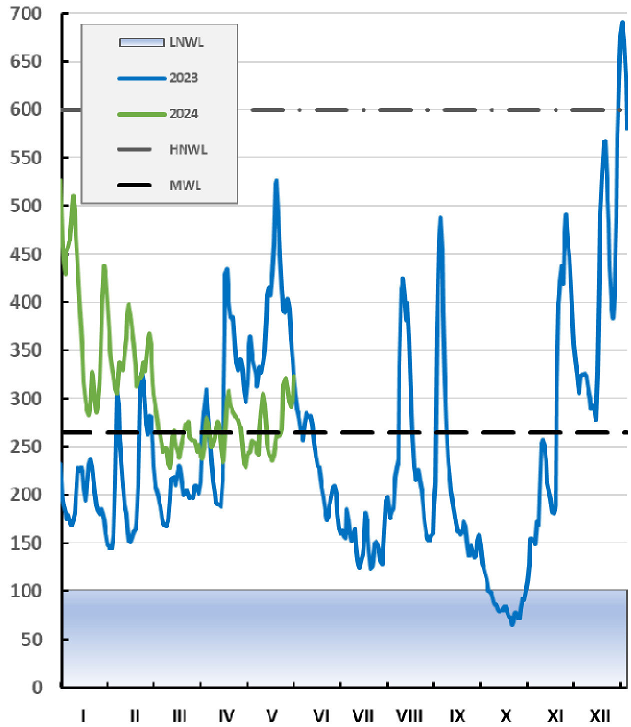


Figure 1. Daily (a) and monthly (b) characteristic water levels for the Pfelling gauging station (DE), (km 2306+530), in cm

(a)



(b)

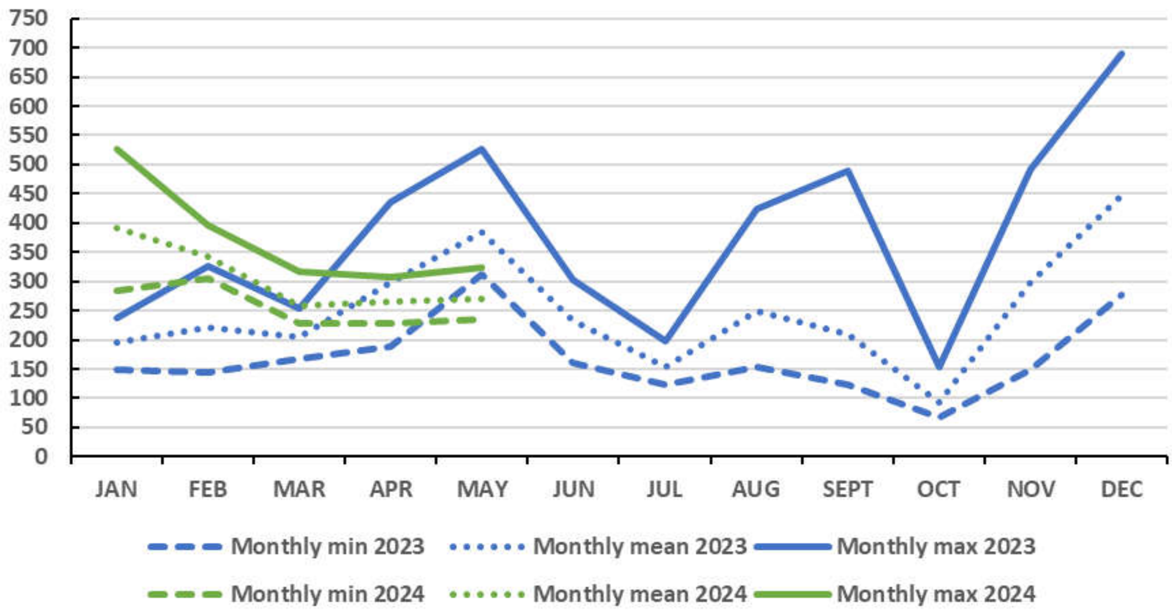


Figure 2. Daily (a) and monthly (b) characteristic water levels
for the Budapest Vidago gauging station (HU), (km 1646+500), in cm

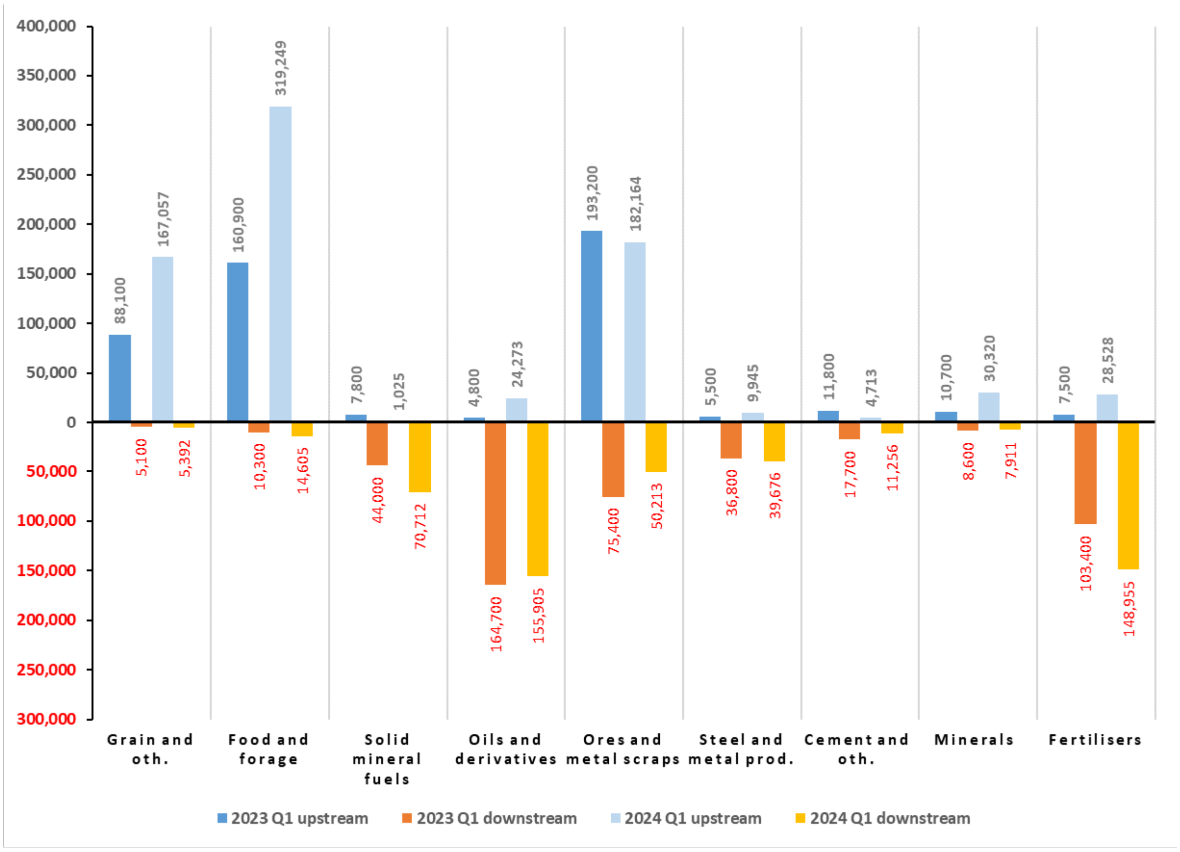


Figure 3. Cargo transport volume upstream/downstream the Danube River through the Gabcikovo lock, by groups of goods, in tonnes

Table 3.2. Cargo volumes in upstream HU/SK cross-border transport (by nomenclature)

Year, thousand tonnes / Commodity group	2019	2020	2021	2022	2023	2023 Q1	2024 Q1
Food products and animal feed	1,774 48%[1]	1,321	879.0	783.0	592.0	161.0	319.2
Iron ore raw materials	841.0 22%	948.0	969.0	735.0	126.0	193.2	182.2
Grain	271 7.3%	352.0	394.0	416.0	427.0	88.1	167.0
Metal products	340 9.2%	117.0	71.0	101.0	55.6	5.5	9.9
Petroleum products	241 6.5%	212.0	86.7	92.1	40.5	4.8	24.3
Organic and synthetic fertilizers	91.5 2.5%	75.2	132.8	74.5	54.9	7.5	28.5

[1] Here and hereafter as a percentage of the total volume of goods transported upstream/downstream the Danube River

Table 3.3. Cargo volumes in downstream HU/SK cross-border traffic (by nomenclature)

Year, thousand tonnes / Commodity group	2019	2020	2021	2022	2023	2023 Q1	2024 Q1
Organic and synthetic fertilizers	535.0 25%	505.0	464.5	444.9	417.5	103.4	149.0
Petroleum products	671.3 31,4%	578.0	870.0	642.0	653.0	164.7	155.9
Metal products	380.4 17,8%	96.5	140.0	173.0	155.0	36.8	39.7

In cross-border traffic Hungary/Croatia/Serbia (HU/HR/RS):

- the volume of cargo transported through Mohács (cross-border connection Hungary/Croatia/Serbia) in Q1 2024 amounted to 1,051 thousand tonnes, or 119% of the volume of cargo transported in Q1 2023.
- volume of transported cargo, by nomenclature, in Q1 2023 and 2024 are given in *Figure 4*, for 2019-2024, Tables 3.4 and 3.5.

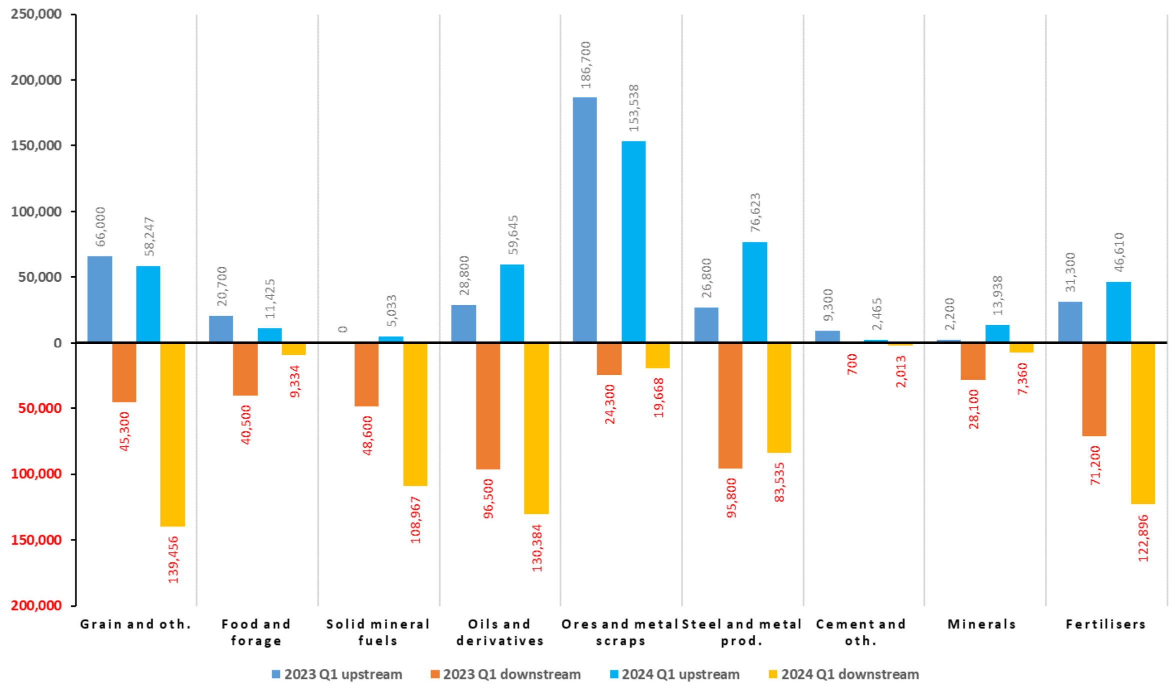


Figure 4. Cargo transport volume upstream/downstream the Danube River through the Mohacs, by groups of goods, in tonnes

Table 3.4. Cargo volumes in upstream HU/HR/RS cross-border transport (by nomenclature)

Year, thousand tonnes / Commodity group	2019	2020	2021	2022	2023	2023 Q1	2024 Q1
Iron ore raw materials	1,247 37,6%	954.0	991.0	741.0	692.0	186.7	153.5
Coal (coke)	479.0 14.4%	323.0	281.0	199.5	2.2	0.0	5.0
Fertilizers	392.0 11.8%	436.0	385.0	255.6	121.0	31.3	46.6
Petroleum products	109.0 3.2%	106.0	117.0	251.9	153.7	28.8	59.6
Metal products	270.0 8.1%	243.0	249.0	205.0	111.1	26.8	76.6

Table 3.5. Cargo volumes in downstream HU/HR/RS cross-border transport (by nomenclature)

Year, thousand tonnes / Commodity group	2019	2020	2021	2022	2023	2023 Q1	2024 Q1
Grain	479.0 21.1%	1,471.0	1,002.0	238.9	317.0	45.3	139.4
Petroleum products	428.0 18.9%	528.0	591.0	322.3	405.4	96.5	130.4
Metal products	316.0 13.9%	295.0	254.0	310.0	381.0	95.8	83.5
Food products and animal feed	203.0 9.0%	520.0	218.5	65.0	216.4	40.5	9.3
Fertilizers	272.0 12.0%	364.0	316.0	315.5	185.7	71.2	122.9

Transport on the Danube-Black Sea Canal:

Transport volumes through the Danube-Black Sea Canal in Q1 2024 amounted to 5,422 thousand tonnes (106% of the same indicator in Q1 2023), of which:

- international transport: 4,418 thousand tonnes, which is 98.7 % by Q1 2023;
- domestic transport: 1,024 thousand tonnes, which is 155.6 % by Q1 2023.

Port cargo turnover in the first quarter of Q_1 2024 (data for Q_1 2019-2022, including pre- and post-quota market years, are shown for comparison) varied in multiple directions (*Table 3.6*).

Table 3.6. Cargo turnover of ports of the Danube countries in the first quarter (Q_1), 2019-2024, (thousand tonnes)

Country	2019 Q_1	2020 Q_1	2021 Q_1	2022 Q_1	2023 Q_1	2024 Q_1
Germany	899.0	765.4	821.0	615.0	453.0	1,276.0*
Austria	2,016.0	1,709.0	2,050.0	1,669.0	1,232.0	1,391.0
Slovakia	533.1	390.0	443.0	502.0	370.8	470.7
Hungary	1,526.0	1,597.0	1,540.0	1,222.0	840.0	1,122.0
Croatia	137.2	210.5	175.0	180.0	79.6	89.9
Serbia	2,655.0	1,843.0	3,703.0	3,055.0	3,426.0	3,295.0
Bulgaria	1,192.0	1,212.0	1,374.0	1,724.0	2,001.0	1,606.0
Romania	6,212.0	6,668.0	6,553.0	6.096.0	6,012.0	7,002.0
Republic of Moldova	284.0	296.4	239.0	486.2	610.0	699.0
Ukraine	1,569.0	1,281.0	1,047.0	1,431.0	6,805.6	5,653.0

* The cargo turnover of the ports in Bavaria, including the Danube section, amounted in Q_1 2024: 1,276 thousand tonnes (in Q_1 2023: 978 thousand tonnes) (www.destatis.de)

Cargo turnover of the Port of Constanța by river vessels amounted to 5,380 thousand tonnes, or 117.8% of the cargo turnover in Q_1 2023; at the same time, 280 thousand tonnes of cargo was loaded from the ports of Romania in the direction of the Danube ports of Ukraine and 1,951 thousand tonnes of cargo were unloaded from the ports of Ukraine.

Cargo turnover of the main Danube ports of Ukraine is given in Tables 3.7-3.9.

Table 3.7 Cargo turnover of the Danube ports of Ukraine *

Port/period /%	Izmail	Reni	Ust-Dunaisk
2023 (thousand tonnes)	20,263	10,071	1,688
% by 2022	227.9	147.5	214.8
Q_1 2024 (thousand tonnes)	3,889	1,567	197
% to Q_1 2023	93	69.9	51.7

Table 3.8. Cargo turnover of the Danube ports of Ukraine in exports in the first quarter (Q_1) 2024 (thousand tonnes)

Name of cargo	**Izmail**	**Reni**	**Ust-Dunaisk**
Grain	1,798.41	561.90	105.80
Other dry bulk cargo	311.52	272.56	39.50
Oil (bulk)	287.02	244.78	6.60

Table 3.9. Main components of the total cargo turnover of the Danube ports of Ukraine

Period/%	**Grain**	**Other bulk goods**	**Oil (bulk)**
2022 (thousand tonnes)	6,622.30	3,742.04	1,154,08
2023 (thousand tonnes)	15,192.11	4,882.64	2,919.67
%	229.40	130.50	253.00
Q_1 2023 (thousand tonnes)	3,339.67	908.26	587.52
Q_1 2024 (thousand tonnes)	2,497.07	667.26	556.03
%	74.77	73.47	94.64

* Data obtained from the Administration of Sea Ports of Ukraine

3.3 Passenger transport

On the Upper Danube, (Gabcikovo lock statistics) passenger transport on cruise vessels with cabins showed the following dynamics at the beginning of 2024 (*Table 3.10*):

Table 3.10. Passenger transport at Gabcikovo

Month 2024	**Number of vessel passages (upstream/downstream)**	**Number of passengers (thousands)**
March	109 (97*)	13.4 (9.5*)
April	366 (395*)	56.8 (54.6*)

* **Figures** for the corresponding month of 2023 are shown for comparison purposes

In the direction of the Danube Delta, in January-March 2024, there was no passenger vessel traffic, except for single passages without passengers (statistics of the Port of Mohacs).

4 Conclusions

In the first quarter of 2024, the impact of the full-scale Russian aggression in Ukraine has maintained the identified risks in the Danube shipping market, affecting almost all major market sectors.

Special measures taken by the Danube Commission, together with the European Commission, in the framework of the *Danube Solidarity Lanes EU-Ukraine* initiative, adopted in May 2022 in support of the European Union's solidarity measures with Ukraine, have contributed to supporting the transport of export products of Ukraine's agricultural sector, stabilizing the operation of the Lower Danube ports and intensifying the use of the Danube-Black Sea Canal links.

The Danube Commission continues to actively contribute to solving problems arising in the process of implementation of the *Danube Solidarity Lanes EU-Ukraine* initiative through special coordination activities, as well as through priority actions within other joint projects with the European Commission for the stabilization of the Danube shipping market.