



Ukraine Grain Transportation

Published June 2024

Executive Summary

The Agricultural Marketing Service (AMS) has expanded the scope of its annual *Ukraine Grain Transportation* report by adding three sets of new routes—with each set originating in either Western, Eastern, or Central Ukraine. For all three sets of routes, grain passes through the Port of Izmil or the Port of Constanta to Egypt, Turkey, and Tunisia. The new routes replace the ones from Western, Eastern, and Central Ukraine to the Port of Mykolaiv, which has been closed to navigation since second quarter 2022, after Russia’s full invasion of Ukraine in February 2022.

Published annually since 2020, the *Ukraine Grain Transportation* report evaluates grain transportation costs as an indicator for the entire Black Sea region (i.e., Kazakhstan, Russia, and Ukraine), which is a strong player in the global wheat and corn markets. The report analyzes the main impacts on the total costs of exporting Ukrainian grain to major markets. The analysis is done partly because Ukraine’s costs can also affect the competitiveness of U.S. grain exports. Despite logistical challenges posed by the war with Russia, Ukraine is the third-largest corn exporter, after the United States and Brazil. In the world wheat market, Ukraine is the sixth-largest exporter, after Russia, the European Union (EU), Australia, Canada, and the United States.

From 2022 to 2023, Ukrainian logistic costs to export wheat and corn to the global markets fell, but remained higher than pre-war levels. Ukraine’s corn and wheat transportation costs fell, with significant drops in truck and ocean freight rates. Transportation costs declined because Ukraine regained access to its most cost-efficient Black Sea ports through the Black Sea Grain Initiative (BSGI) and ramped up alternative export routes via the Danube River ports and EU borders. In July 2023, Russia terminated the BSGI. Ukraine continued exporting through the Danube River ports and EU borders for the rest of the year. In October, Ukraine resumed operations of its major marine ports on the Black Sea—Chornomorsk, Odesa, and Pivdennyi—through a new “humanitarian corridor” for ships bound for African and Asian markets.

From 2022 to 2023, Ukraine’s share of maritime exports of corn, wheat, and soybeans rose from 69 percent to 80 percent. Of all the modes, maritime transport (through the Black Sea ports and Danube ports) was the most competitive. The share of railway fell from 24 percent to 15 percent. Truck deliveries declined from 7 percent to 4 percent of overall exports

Overview of Ukrainian Grain Transportation in 2023¹

New Danube River Export Routes. The Agricultural Marketing Service (AMS) has expanded the scope of its annual *Ukraine Grain Transportation* report by adding three sets of new routes. For all three sets of routes, grain passes through the Port of Izmil or the Port of Constanta to Alexandria, Egypt; the Marmara Sea Ports, Turkey; or Tunis, Tunisia. However, each set of routes has a different origin, Western, Eastern, or Central

¹ Andrii Shkliar (andrii.shkliar@cfts.org.ua) and Andrey Isayev (andrey.isayev@cfts.org.ua) gathered all of the Ukraine data in this report and ensured its accuracy.

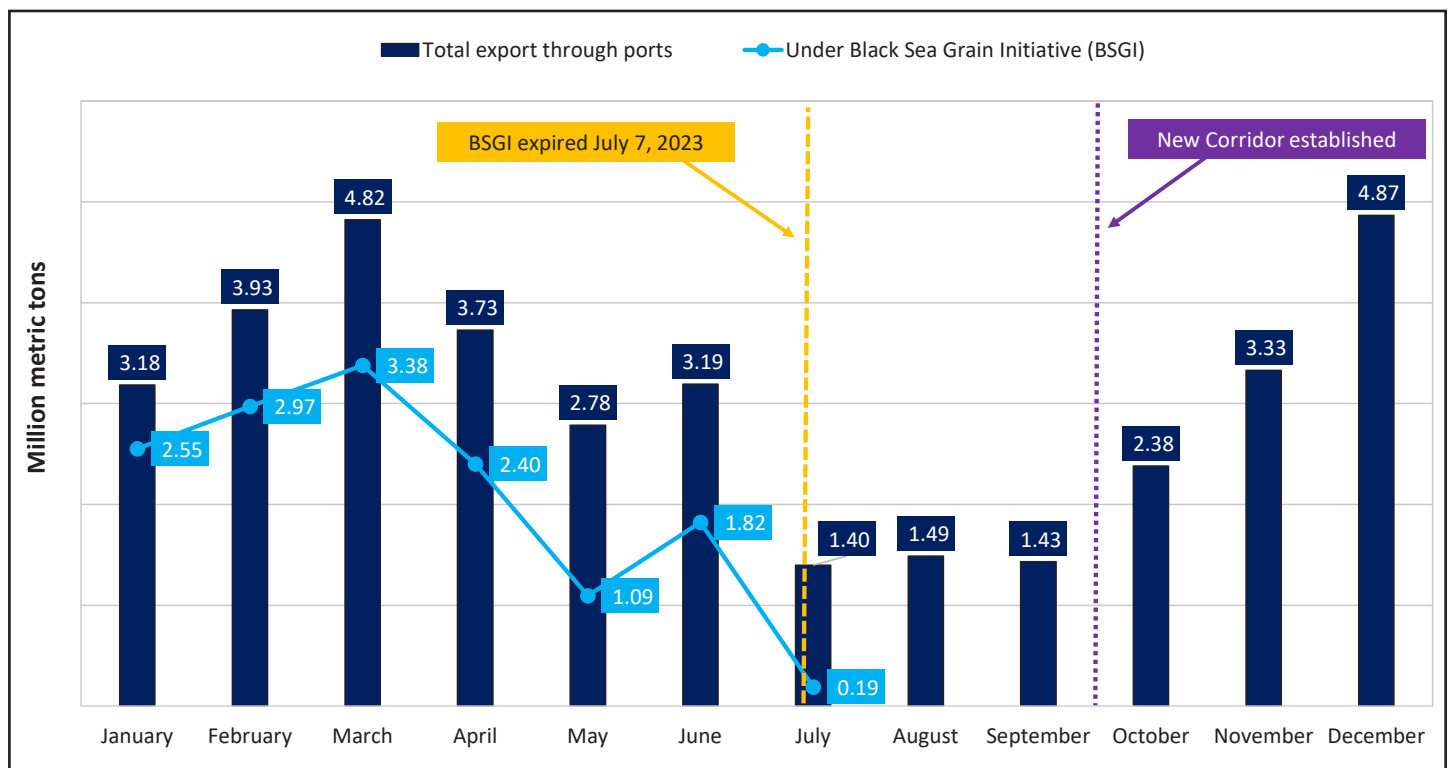


Ukraine Grain Transportation

Ukraine (tables 7, 8, and 9). The new routes replace the routes from Western, Eastern, and Central Ukraine to the Port of Mykolaiv, which has remained closed to navigation since second quarter 2022 following Russia's full invasion of Ukraine in February 2022.

Besides the three newly added sets of routes, the Ukraine Grain Transportation report still covers three other set of routes, originating from Western, Eastern, and Central Ukraine. From those origins, all grain passes through the Port of Odesa to Alexandria, Egypt, Ciwandan/Cigading, Indonesia, or Southern ports, China. The indicator comprises 3 regions in 24 provinces and represents roughly 100 percent of Ukraine's total 2022 wheat, corn, and soybean production (see fig. 3 inside the report).

Figure 1a. Ukrainian grain and oilseeds monthly maritime export, 2023



Notes: Grain and oilseeds refer to corn, wheat, and soybeans.

The [United Nation](#)-brokered Black Sea Grain Initiative (BSGI) was in place from July 27, 2022, to July 17, 2023. BSGI facilitated Ukraine's use of its Black Sea ports of Chornomorsk, Odesa, and Pivdennyi. In late September, Ukraine opened a "humanitarian corridor" for ships bound for African and Asian markets ([Reuters](#)). New Corridor includes the Danube River and Black Sea ports.

Source: Ministry of Agrarian Policy and Food of Ukraine.

From 2022 to 2023, Ukraine regained access to its most cost-efficient Black Sea ports through the Black Sea Grain Initiative (BSGI) and ramped up alternative export routes via the Danube River ports and European Union (EU) borders. After Russia terminated the BSGI in July 2023, Ukraine independently created a new Ukrainian humanitarian corridor and resumed operations of its major marine ports on the Black Sea, Chornomorsk, Odesa, and Pivdennyi in October 2023 (fig. 1a) ([Grain and Feed Quarterly, UP2024-0002](#)). These ports handle



Ukraine Grain Transportation

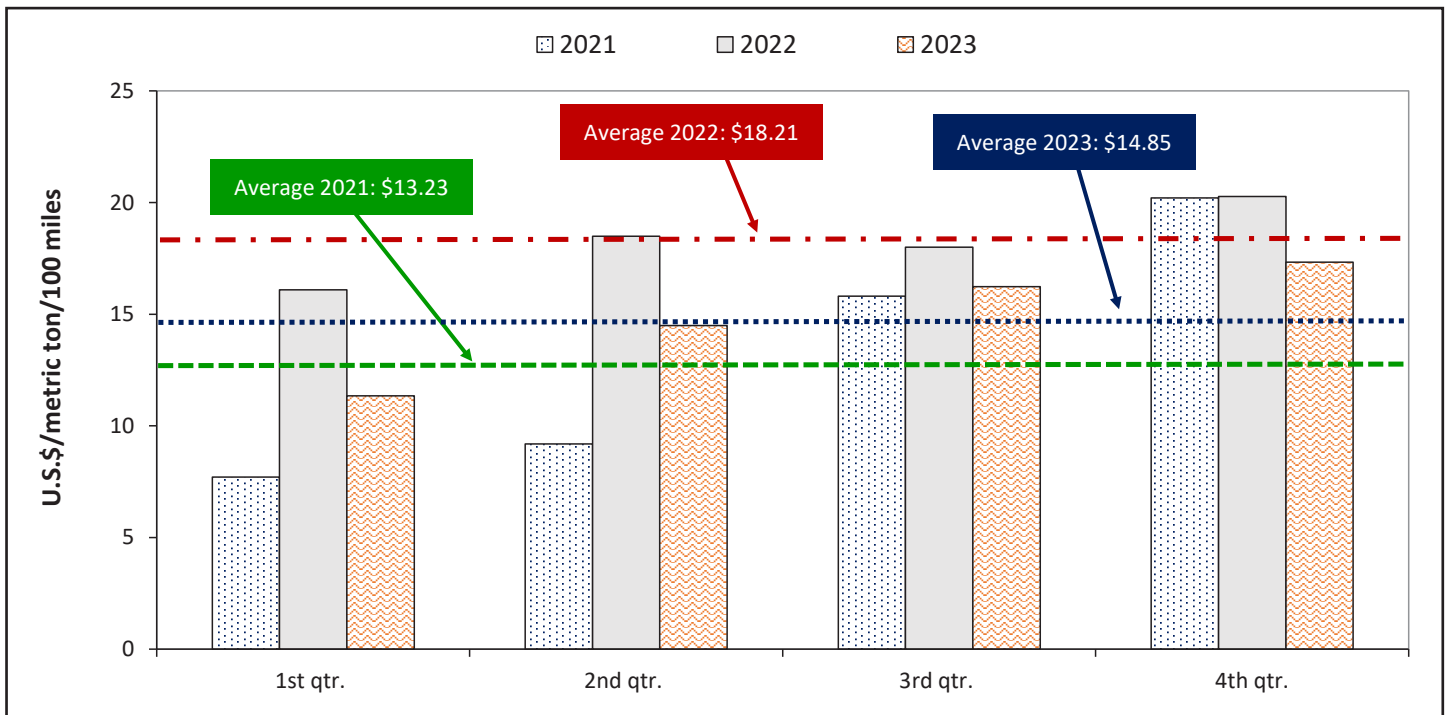
seagoing vessels of Handy-size and above.² From 2022 to 2023, Ukrainian wheat exports increased nearly 45 percent—from 11.2 million metric tons (mmt) to 16.1 mmt. Over the same period, corn exports rose 3 percent (from 25.2 mmt to 26.3 mmt), and soybean exports rose 71 percent (from 2 mmt to 3.4 mmt). ([Ministry of Agrarian Policy and Food of Ukraine](#)).

Ocean and inland freight rates.

From 2022 to 2023, Ukraine's corn and wheat transportation costs fell with significant drops in truck and ocean freight rates. Transportation costs declined as Ukraine's grain market adapted to war conditions. Also contributing to the drop in transportation costs, Ukraine regained access to its major marine ports on the Black Sea, and increased its shipments through the Danube export ports. The cost of shipping a metric ton (mt) of grain 100 miles by truck fell 18 percent year to year—from \$18.21 per mt to \$14.85 per mt (fig. 1b) ([Zernovoz](#)).

Over the same period, ocean rates declined 21-49 percent, although most still exceeded their 2021 levels (i.e., prior to the war with Russia). The only exception was for the Odesa–Ciwandan/Cigading, Indonesia-route, which had roughly the same rate as in 2021 (tables 2a, 2b, 2c, 2d, and 7). Rail transportation costs also decreased year to year. Market rates for Ukrainian Railway's grain hoppers decreased from \$117.59 per day in December 2022 to \$31.00 per day in December 2023 ([Centre for Transport Strategies \(CFTS\)](#)).³

Figure 1b. Ukrainian wheat, corn, and soybeans export truck cost index, 2021-23



Note: qtr. = quarter.

Sources: Centre for Transport Strategies (CFTS) Kyiv, Ukraine, Zernovoz, Kyiv, Ukraine; and USDA, Agricultural Marketing Service.

² Handy-size vessels carry loads of up to 50,000 deadweight tonnage (dwt). Dwt is calculated as the sum of the weights of cargo, fuel, fresh water, ballast water, provisions, passengers, and crew.

³ Rental hopper prices (cited here and in the next paragraph) do not include the value-added tax.



Ukraine Grain Transportation

Farm gate and export prices, 2022-23. From 2022 to 2023, Ukrainian average wheat farm prices fell 26 percent, from \$188.24 per mt to \$140.28 per mt, which was lower than 2021 (tables 1a, 2a, and 2b). Over the same period, Ukrainian wheat free on-board (FOB) prices decreased 28 percent, from \$301.55 per mt to \$217.07 per mt (table 1a).⁴ Average corn farm prices fell 21 percent, from \$171.53 per mt to \$135.73 per mt (tables 1a, 2c, and 2d). Ukrainian corn Carriage paid to (CPT) prices increased nearly 39 percent, from \$241.07 per mt to \$334.18 per mt.⁵

Both transport costs and farm gate prices decreased, thereby lowering landed costs for Ukrainian wheat and corn from Odesa to Alexandria, Egypt; Ciwandan/Cigading, Indonesia; and Shanghai, China.⁶ From 2022 to 2023, as a share of total landed costs, Ukraine's transportation costs for wheat rose from 1 percent to 2 percent, from Central Ukraine through the ports of Odesa to Alexandria, Egypt. For other routes, transportation's share of landed costs fell 0.5 percent to 12 percent (tables 2a, 2b, 2c, 2d).

Spread between U.S. Gulf and Ukrainian farm prices, 2022-23. According to [Wilson et al.](#), the cumulative effect of the war was to reduce the price paid to Ukrainian farmers. To capture the effect of this decline, USDA estimated the spread between Ukrainian farm-level prices and global prices. (In this case, U.S. Gulf FOB prices were used to exemplify global prices.) From 2022 to 2023, the spread for wheat and corn—between Ukrainian farm-level prices and global prices—narrowed (table 1a). This narrowing spread indicates Ukrainian export logistic costs to ship wheat and corn to the global market fell from 2022 to 2023, but remained above pre-war levels.

Table 1a. Ukraine and U.S. Gulf wheat and corn prices, 2021-23

Wheat	2021	2022	2023
	\$/mt		
Ukraine FW FOB	275.49	301.55	217.07
US Gulf FOB Hard Red Winter 11%	304.65	418.78	334.18
Ukraine farm prices	273.08	188.24	140.28
Ukraine farm price spread = US Gulf - Ukraine farm prices	31.57	230.54	193.90
Corn	2021	2022	2023
	\$/mt		
Ukraine CPT	259.53	241.07	334.18
US Gulf FOB	265.60	319.05	217.07
Ukraine farm prices	270.12	171.53	135.73
Ukraine farm price spread = US Gulf - Ukraine farm prices	-4.52	147.52	81.34

Free on board (FOB) prices show the amount payable by the Ukrainian seller for transporting grain to the Ukrainian port as well as the cost of loading the grain onto the ship, including inland haulage, customs clearance, origin documentation charges, and demurrage. After all the grain is on board, the buyer is responsible for all remaining costs.

Carriage paid to (CPT) prices signifies that the seller assumes responsibility for delivering the grain to the first carrier, thus fulfilling their contractual obligation up to that point ([GoFreight](#)).

Note: In 2021, Ukrainian farmer's transportation costs were lower than global markets in 2022.

Sources: AgriCensus and USDA, Agricultural Marketing Service.

4 Free on board (FOB) prices show the amount payable by the Ukrainian seller for transporting grain to the Ukrainian port as well as the cost of loading the grain onto the ship, including inland haulage, customs clearance, origin documentation charges, and demurrage. After all the grain is on board, the buyer is responsible for all remaining costs.

5 Carriage paid to (CPT) prices signifies that the seller assumes responsibility for delivering the grain to the first carrier, thus fulfilling their contractual obligation up to that point ([GoFreight](#)).

6 Landed costs = total transportation costs + farm price.



Ukraine Grain Transportation

Exports Modal Share.

From 2022 to 2023, modal shares for Ukrainian grain and oilseed inland transportation showed the same trends.⁷ Over the same period, exports through Ukraine’s seaports by rail and barge declined, while seaport exports by truck rose. Trucking’s share of the seaport-export market rose from 60 percent to 65 percent year to year, while rail’s share declined from 40 percent to 35 percent (table 1b) and barge’s share was zero for both years. (Prior to the war, all barge traffic had been via the Dnipro River, which has remained closed since the war began.) Rail shipments declined, because the war had eliminated most direct railway connections from Ukraine’s production regions to the Danube River ports. The Port of Izmail’s direct railway connection was disrupted by attacks and damage to the Bilhorod-Dnistrovskiy Bridge.

The only possible direct railway route left to the Danube River was through Moldova and, then, the Port of Reni. However, railway transit through Moldova appeared to be expensive and hardly predictable, forcing companies to focus on truck delivery to Danube ports ([Ukrainian Railways](#), [Ukrainian Sea Ports Authorities](#), and [CFTS](#)). The Danube River ports became an important alternative gateway for Ukrainian grain exports. In July 2023, all corn, wheat, and soybeans were exported via the Danube ports (fig 1a).⁸

Table 1b. Tonnages and modal shares for Ukrainian grain and oilseeds exports, 2018-23

Year & Type of Movement	Rail		Barge via Dnipro River		Truck	
	1,000 Tons	Percent	1,000 Tons	Percent	1,000 Tons	Percent
2018	30,083	76%	3,700	9%	5,850	15%
2019	36,707	69%	5,650	11%	10,667	20%
2020	29,406	64%	4,030	9%	12,694	28%
2021	28,495	60%	4,300	9%	14,500	31%
2022	10,155	40%	-	-	15,033	60%
2023	12,883	35%	-	-	23,655	65%

Notes: From January to February 2022, navigation on the Dnipro River was closed because of winter conditions. From March to December, in both 2022 and 2023, navigation was also closed for security reasons related to the war with Russia. From 2018 to 2019, barged volumes included those for the Southern Bug River, and 2020-21 volumes included those for the Dnipro and Southern Bug Rivers. The barged volumes did not include shipments via the Danube River ports.

Sources: Ukrainian Railways, Ukrainian Sea Ports Authorities, and Centre for Transport Strategies.

⁷ Grain refers to corn and wheat.

⁸ Grain is transported to the Izmail and Reni ports by rail and trucks. One part is exported by small “coaster vessels” directly to the destination ports. Another part is loaded on barges and transported to the Constanta port to be reloaded on seagoing vessels. Coaster vessels—suitable for navigation on the Lower Danube—carry loads up to 7,000 dwt ([Centre for Transport Strategies \(CFTS\)](#)).



Ukraine Grain Transportation

Table 1c. Export of grain and oilseeds from Ukraine through western routes, 2021-23

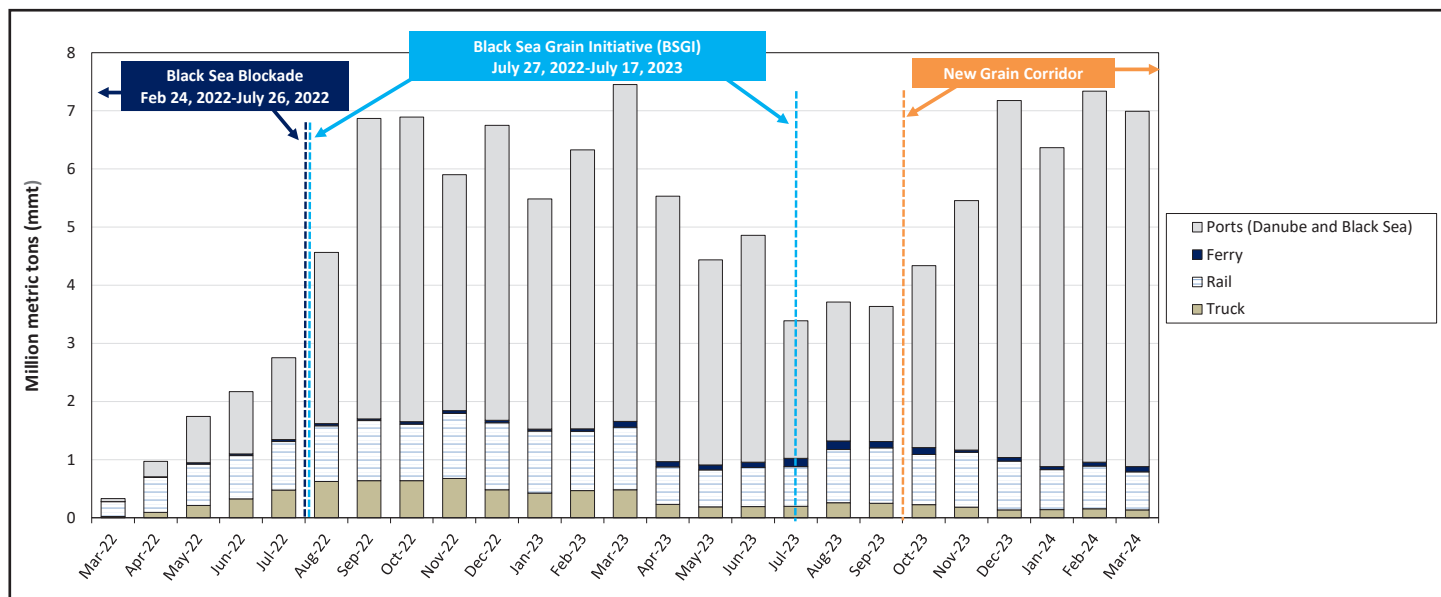
Country/Railway station on border	2021	2022	2023
	1,000 Tons		
Hungary	70.9	1,825.8	1,737.7
Moldova	0	0	60.0
Poland	128.4	3,170.1	2,730.7
Romania	0	1,247.6	1,452.6
Slovakia	71.70	949.90	1,022.0
Total	270.9	7,193.4	7,002.9

Notes: “Grain” refers to corn, wheat, and barley. “Oilseeds” refers to soybeans, rapeseed, and sunflower seeds. Years 2021 and 2022 are actual data, while 2023 is an estimation.

Sources: Ukrainian Railway, Ministry of Agrarian Policy and Food of Ukraine, Centre for Transport Strategies (CFTS).

From 2022 to 2023, Ukraine’s share of maritime exports of corn, wheat, and soybeans increased from 69 percent to 80 percent. Of all the modes, maritime transport (through the Black Sea ports and Danube ports) was the most competitive. The railway share decreased from 24 percent to 15 percent year to year (total 7 mmt) (fig 1c and table 1c). Also, year to year, truck deliveries declined from 7 percent to 4 percent of overall exports (1.6 mmt), with the reopening of the Black Sea ports and blockades of the Polish border by local truckers and farmers ([Ministry of Agrarian Policy and Food of Ukraine](#)). By rail and truck, the grain was exported through the western border of Ukraine and further to the EU or ports of Poland, Romania, and Lithuania (fig 1c and table 1c).

Figure 1c. Ukraine agricultural exports by mode of transport 2022-24



Sources: USDA-FAS using data from Ministry of Agrarian Policy and Food of Ukraine Public Dashboard of Exports.

For more information, contact Delmy L. Salin at delmy.salin@usda.gov.



Ukraine Grain Transportation

Table 2a. Average costs of transporting Ukrainian wheat from the Black Sea ports (using rail delivery to ports) to Egypt, Indonesia, and Turkey, 2022-23

	From Central Ukraine - Odesa					
	To Alexandria, Egypt			To Ciwandan/Cigading, Indonesia		
	—US\$/mt—		% Change	—US\$/mt—		% Change
	2022	2023	2022-23	2022	2023	2022-23
Truck	8.80	6.91	-21.5	8.80	6.91	-21.5
Rail	21.67	20.92	-3.5	21.67	20.92	-3.5
Ocean	53.99	38.84	-28.1	84.98	54.67	-35.7
Total transportation	84.69	66.66	-21.3	115.69	82.50	-28.7
Farm price	188.24	140.28	-25.5	188.24	140.28	-25.5
Landed cost	281.82	206.95	-26.6	312.82	222.78	-28.8
Transport % of landed cost	32.0	32.3	0.9	38.8	37.1	-4.4

	From Central Ukraine - Izmail					
	To Alexandria, Egypt			To Marmara Sea ports, Turkey		
	—US\$/mt—		% Change	—US\$/mt—		% Change
	2022	2023	2022-23	2022	2023	2022-23
Truck	8.80	6.91	-21.5	8.80	6.91	-21.5
Rail	37.49	33.65	-10.2	37.49	33.65	-10.2
Ocean	91.94	50.53	-45.0	75.81	39.11	-48.4
Total transportation	138.23	91.08	-34.1	122.10	79.66	-34.8
Farm price	188.24	140.28	-25.5	188.24	140.28	-25.5
Landed cost	326.47	231.37	-29.1	310.34	219.95	-29.1
Transport % of landed cost	42.3	39.2	-7.4	39.3	36.0	-8.5

	From Central Ukraine - Constanta		
	To Alexandria, Egypt		
	—US\$/mt—		% Change
	2022	2023	2022-23
Truck	8.80	6.91	-21.5
Rail	37.49	33.65	-10.2
Barge Izmail-Constanta	--na--	28.17	--na--
Ocean	21.38	15.18	-29.0
Total transportation	--na--	83.90	--na--
Farm price	188.24	140.28	-25.5
Landed cost	--na--	224.18	--na--
Transport % of landed cost	--na--	37.4	--na--

Notes: Central Ukraine producing regions are as follows = Cherkasy, Chernihiv, Kherson, Kirovohrad, Kyiv, Mykolaiv, Odesa, Poltava, and Sumy provinces. Export ports - The Port of Odesa was closed during the second quarter of 2022. The freight average was calculated based on the first, third, and fourth quarters of 2022. The Port of Mykolaiv has remained closed to navigation since the second quarter of 2022. Rail rates include the cost of delivery to the railway station and the cost of renting a grain hopper. However, rail rates do not include the cost of moving and positioning rail cars at the elevator and port, railway station fees, security service from loading to discharging port, or freight-forwarding service. (Any or all of these items could exceed the rail tariff rate.) Rail rates are estimated by using specialized software “TM-Karta” in accordance with Ukrainian Railways (Ukrzaliznytsia) tariff regulation. Farm price = elevator price – handling costs – farm-to-elevator transportation. mt = metric ton; na = not available.

Sources: Centre for Transport Strategies (CFTS) Kyiv, Ukraine, and USDA, Agricultural Marketing Service.



Ukraine Grain Transportation

Table 2b. Average costs of transporting Ukrainian wheat from the Black Sea ports (using truck delivery to ports) to Egypt, Indonesia, and Turkey, 2022-23

	From Central Ukraine - Odesa					
	To Alexandria, Egypt			To Ciwandan/Cigading, Indonesia		
	—US\$/mt—		% Change	—US\$/mt—		% Change
	2022	2023	2022-23	2022	2023	2022-23
Truck	63.92	51.85	-18.9	63.92	51.85	-18.9
Ocean	53.99	38.84	-28.1	84.98	54.67	-35.7
Total transportation	117.91	90.69	-23.1	148.90	106.52	-28.5
Farm price	188.24	140.28	-25.5	188.24	140.28	-25.5
Landed cost	306.15	230.97	-24.6	337.14	246.81	-26.8
Transport % of landed cost	38.5	39.2	1.9	44.2	43.1	-2.3

	From Central Ukraine - Izmail					
	To Alexandria, Egypt			To Marmara Sea ports, Turkey		
	—US\$/mt—		% Change	—US\$/mt—		% Change
	2022	2023	2022-23	2022	2023	2022-23
Truck	90.86	73.81	-18.8	90.86	73.81	-18.8
Ocean	91.94	50.53	-45.0	75.81	39.11	-48.4
Total transportation	182.80	124.34	-32.0	166.67	112.92	-32.2
Farm price	188.24	140.28	-25.5	188.24	140.28	-25.5
Landed cost	371.04	264.62	-28.7	354.91	253.21	-28.7
Transport % of landed cost	49.3	47.0	-4.5	47.0	44.6	-4.9

	From Central Ukraine - Constanta		
	To Alexandria, Egypt		
	—US\$/mt—		% Change
	2022	2023	2022-23
Truck	90.86	73.81	-18.8
Barge Izmail-Constanta	--na--	28.17	--na--
Ocean	21.38	15.18	-29.0
Total transportation	--na--	117.16	--na--
Farm price	188.24	140.28	-25.5
Landed cost	--na--	257.44	--na--
Transport % of landed cost	--na--	45.5	--na--

Notes: Central Ukraine producing regions are as follows = Cherkasy, Chernihiv, Kherson, Kirovohrad, Kyiv, Mykolaiv, Odesa, Poltava, and Sumy provinces. Export ports - The Port of Odesa was closed during the second quarter of 2022. The freight average was calculated based on the first, third, and fourth quarters of 2022. The Port of Mykolaiv has remained closed to navigation since the second quarter of 2022.

Farm price = elevator price – handling costs – farm-to-elevator transportation.

mt = metric ton; na = not available.

Sources: Centre for Transport Strategies (CFTS) Kyiv, Ukraine, and USDA, Agricultural Marketing Service.



Ukraine Grain Transportation

**Table 2c. Average costs of transporting corn from the Black Sea ports
(using rail delivery to ports) to Egypt, China, Turkey, and Tunisia, 2022-23**

	From Central Ukraine - Odesa					
	To Alexandria, Egypt			Southern ports, China		
	—US\$/mt—		% Change	—US\$/mt—		% Change
	2022	2023	2022-23	2022	2023	2022-23
Truck	8.80	6.91	-21.5	8.80	6.91	-21.5
Rail	21.67	20.92	-3.5	21.67	20.92	-3.5
Ocean	53.99	40.19	-25.6	79.92	59.55	-25.5
Total transportation	84.69	68.02	-19.7	110.63	87.37	-21.0
Farm price	171.53	135.73	-20.9	171.53	135.73	-20.9
Landed cost	262.93	203.75	-22.5	288.87	223.10	-22.8
Transport % of landed cost	33.8	33.6	-0.7	39.7	39.4	-0.9

	From Central Ukraine - Izmail					
	To Alexandria, Egypt			To Marmara Sea ports, Turkey		
	—US\$/mt—		% Change	—US\$/mt—		% Change
	2022	2023	2022-23	2022	2023	2022-23
Truck	8.80	6.91	-21.5	8.80	6.91	-21.5
Rail	37.49	33.65	-10.2	37.49	33.65	-10.2
Ocean	93.91	51.87	-44.8	79.88	40.98	-48.7
Total transportation	140.20	92.42	-34.1	126.17	81.54	-35.4
Farm price	171.53	135.73	-20.9	171.53	135.73	-20.9
Landed cost	311.72	228.15	-26.8	297.70	217.27	-27.0
Transport % of landed cost	45.0	40.4	-10.1	42.4	37.4	-11.8

	From Central Ukraine - Constanta		
	To Tunis, Tunisia		
	—US\$/mt—		% Change
	2022	2023	2022-23
Truck	8.80	6.91	-21.5
Rail	37.49	33.65	-10.2
Barge Izmail-Constanta	--na--	28.17	--na--
Ocean	32.53	23.30	-28.4
Total transportation	--na--	92.02	--na--
Farm price	171.53	135.73	-20.9
Landed cost	--na--	227.75	--na--
Transport % of landed cost	--na--	40.5	--na--

Notes: Central Ukraine producing regions are as follows = Cherkasy, Chernihiv, Kherson, Kirovohrad, Kyiv, Mykolaiv, Odesa, Poltava, and Sumy provinces. Export ports - The Port of Odesa was closed during the second quarter of 2022. The freight average was calculated based on the first, third, and fourth quarters of 2022. The Port of Mykolaiv has remained closed to navigation since the second quarter of 2022. Rail rates include the cost of delivery to the railway station and the cost of renting a grain hopper. However, rail rates do not include the cost of moving and positioning rail cars at the elevator and port, railway station fees, security service from loading to discharging port, or freight-forwarding service. (Any or all of these items could exceed the rail tariff rate.) Rail rates are estimated by using specialized software “TM-Karta” in accordance with Ukrainian Railways (Ukrzaliznytsia) tariff regulation. Farm price = elevator price – handling costs – farm-to-elevator transportation. mt = metric ton; na = not available.

Sources: Centre for Transport Strategies (CFTS) Kyiv, Ukraine, and USDA, Agricultural Marketing Service.



Ukraine Grain Transportation

Table 2d. Average costs of transporting Ukrainian corn from the Black Sea ports (using truck delivery to ports) to Egypt, China, Turkey, and Tunisia, 2022-23

	From Central Ukraine - Odesa					
	To Alexandria, Egypt			Southern ports, China		
	—US\$/mt—		% Change	—US\$/mt—		% Change
	2022	2023	2022-23	2022	2023	2022-23
Truck	63.92	51.85	-18.9	63.92	51.85	-18.9
Ocean	53.99	40.19	-25.6	79.92	59.55	-25.5
Total transportation	117.91	92.04	-21.9	143.84	111.40	-22.6
Farm price	171.53	135.73	-20.9	171.53	135.73	-20.9
Landed cost	289.43	227.77	-21.3	315.37	247.13	-21.6
Transport % of landed cost	40.7	40.5	-0.5	45.6	45.2	-0.9

	From Central Ukraine - Izmail					
	To Alexandria, Egypt			To Marmara Sea ports, Turkey		
	—US\$/mt—		% Change	—US\$/mt—		% Change
	2022	2023	2022-23	2022	2023	2022-23
Truck	90.86	73.81	-18.8	90.86	73.81	-18.8
Ocean	93.91	51.87	-44.8	79.88	40.98	-48.7
Total transportation	184.76	125.68	-32.0	170.74	114.80	-32.8
Farm price	171.53	135.73	-20.9	171.53	135.73	-20.9
Landed cost	356.29	261.41	-26.6	342.26	250.53	-26.8
Transport % of landed cost	51.9	48.2	-7.0	49.9	46.0	-7.8

	From Central Ukraine - Constanta		
	To Tunis, Tunisia		
	—US\$/mt—		% Change
	2022	2023	2022-23
Truck	90.86	73.81	-18.8
Barge Izmail-Constanta	--na--	28.17	--na--
Ocean	32.53	23.30	-28.4
Total transportation	--na--	125.28	--na--
Farm price	171.53	135.73	-20.9
Landed cost	--na--	261.01	--na--
Transport % of landed cost	--na--	48.1	--na--

Notes: Central Ukraine producing regions are as follows = Cherkasy, Chernihiv, Kherson, Kirovohrad, Kyiv, Mykolaiv, Odesa, Poltava, and Sumy provinces. Export ports - The Port of Odesa was closed during the second quarter of 2022. The freight average was calculated based on the first, third, and fourth quarters of 2022. The Port of Mykolaiv has remained closed to navigation since the second quarter of 2022.

Farm price = elevator price – handling costs – farm-to-elevator transportation.

mt = metric ton; na = not available.

Sources: Centre for Transport Strategies (CFTS) Kyiv, Ukraine, and USDA, Agricultural Marketing Service.



Ukraine Grain Transportation

Figure 2. Routes and wheat, corn, and soybean regions considered in the Ukrainian grain export transportation indicator



Notes: Table 7 on page 19 provides additional information for routes 1-6. Regions comprised roughly 100 percent of wheat, corn, and soybean production, 2022.

Source: Centre for Transport Strategies (CFTS) Kyiv, Ukraine, and USDA, Agricultural Marketing Service.



Ukraine Grain Transportation

Figure 3. Routes and wheat regions considered in the Ukrainian grain export transportation indicator



Notes: Table 7 on page 19 provides additional information for routes 1-6. Regions comprised roughly 100 percent of wheat production, 2022.

Source: Centre for Transport Strategies (CFTS) Kyiv, Ukraine, and USDA, Agricultural Marketing Service.



Ukraine Grain Transportation

Figure 4. Routes and corn regions considered in the Ukrainian grain export transportation indicator

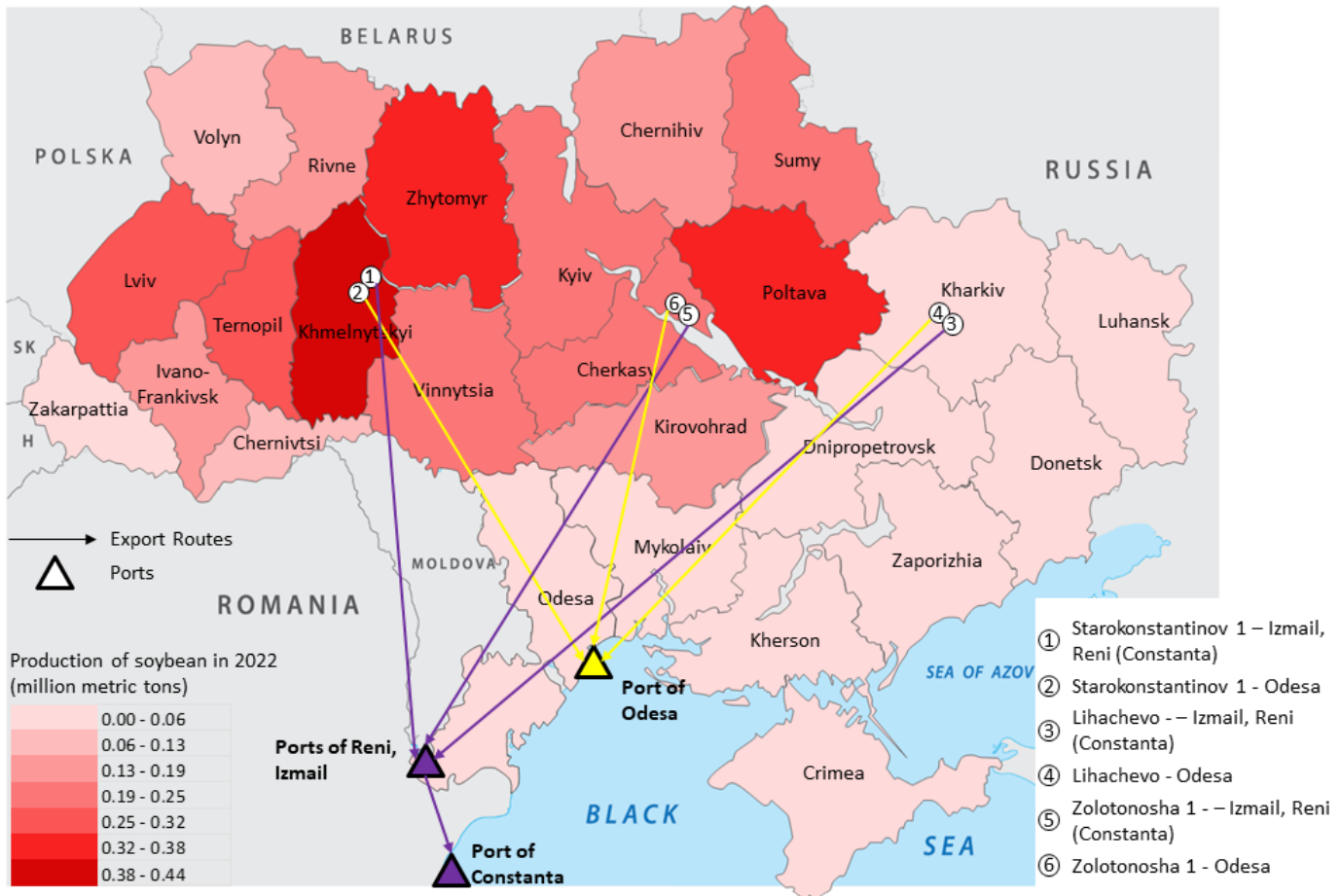


Notes: Table 7 on page 19 provides additional information for routes 1-6. Regions comprised roughly 100 percent of corn production, 2022.
Source: Centre for Transport Strategies (CFTS) Kyiv, Ukraine, and USDA, Agricultural Marketing Service.



Ukraine Grain Transportation

Figure 5. Routes and soybean regions considered in the Ukrainian grain export transportation indicator



Notes: Table 7 on page 19 provides additional information for routes 1-6. Regions comprised roughly 100 percent of soybean production, 2022.
Source: Centre for Transport Strategies (CFTS) Kyiv, Ukraine, and USDA, Agricultural Marketing Service.



Ukraine Grain Transportation

Table 3. Quarterly costs of transporting Ukrainian wheat from the Black Sea ports (using rail delivery to ports) to Egypt, Indonesia, and Turkey, 2023

	From Central Ukraine - Odesa									
	To Alexandria, Egypt —US\$/mt—					To Ciwandan/Cigading, Indonesia —US\$/mt—				
	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023
Truck	5.54	8.25	6.65	7.19	6.91	5.54	8.25	6.65	7.19	6.91
Rail	29.58	25.51	13.21	15.37	20.92	29.58	25.51	13.21	15.37	20.92
Ocean	32.70	33.83	47.25	41.57	38.84	51.93	49.50	52.75	64.50	54.67
Total transportation	67.82	67.59	67.11	64.13	66.66	87.05	83.25	72.61	87.06	82.50
Farm price	153.98	147.62	129.16	130.37	140.28	153.98	147.62	129.16	130.37	140.28
Landed cost	221.80	215.21	196.28	194.50	206.95	241.03	230.88	201.78	217.43	222.78
Transport % of landed cost	30.6	31.4	34.2	33.0	32.3	36.1	36.1	36.0	40.0	37.1
	From Central Ukraine - Izmail									
	To Alexandria, Egypt —US\$/mt—					To Marmara Sea ports, Turkey —US\$/mt—				
	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023
Truck	5.54	8.25	6.65	7.19	6.91	5.54	8.25	6.65	7.19	6.91
Rail	47.64	41.25	21.01	24.69	33.65	47.64	41.25	21.01	24.69	33.65
Ocean	57.17	47.80	52.50	44.63	50.53	45.90	36.43	40.00	34.10	39.11
Total transportation	110.34	97.30	80.16	76.51	91.08	99.08	85.94	67.66	65.98	79.66
Farm price	153.98	147.62	129.16	130.37	140.28	153.98	147.62	129.16	130.37	140.28
Landed cost	264.32	244.92	209.33	206.89	231.37	253.06	233.56	196.83	196.35	219.95
Transport % of landed cost	41.7	39.7	38.3	37.0	39.2	39.2	36.8	34.4	33.6	36.0
	From Central Ukraine - Constanta									
	To Alexandria, Egypt —US\$/mt—									
	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023					
Truck	5.5	8.2	6.7	7.2	6.9					
Rail	47.6	41.3	21.0	24.7	33.6					
Barge Izmail-Constanta	27.2	21.7	35.8	28.0	28.2					
Ocean	14.8	14.2	14.7	17.0	15.2					
Total transportation	95.1	85.4	78.2	76.8	83.9					
Farm price	154.0	147.6	129.2	130.4	140.3					
Landed cost	249.1	233.0	207.4	207.2	224.2					
Transport % of landed cost	38.2	36.6	37.7	37.1	37.4					

Notes: Central Ukraine producing regions are as follows = Cherkasy, Chernihiv, Kherson, Kirovohrad, Kyiv, Mykolaiv, Odesa, Poltava, and Sumy provinces. Export ports - The Port of Odesa was closed during the second quarter of 2022. The freight average was calculated based on the first, third, and fourth quarters of 2022. The Port of Mykolaiv has remained closed to navigation since the second quarter of 2022. Rail rates include the cost of delivery to the railway station and the cost of renting a grain hopper. However, rail rates do not include the cost of moving and positioning rail cars at the elevator and port, railway station fees, security service from loading to discharging port, or freight-forwarding service. (Any or all of these items could exceed the rail tariff rate.) Rail rates are estimated by using specialized software “TM-Karta” in accordance with Ukrainian Railways (Ukrzaliznytsia) tariff regulation. Farm price = elevator price – handling costs – farm-to-elevator transportation.
qtr. = quarter; mt = metric ton; na = not available.

Sources: Centre for Transport Strategies (CFTS) Kyiv, Ukraine, and USDA, Agricultural Marketing Service.



Ukraine Grain Transportation

Table 4. Quarterly costs of transporting Ukrainian wheat from the Black Sea ports (using truck delivery to ports) to Egypt, Indonesia, and Turkey, 2023

	From Central Ukraine - Odesa									
	To Alexandria, Egypt —US\$/mt—					To Ciwandan/Cigading, Indonesia —US\$/mt—				
	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023
Truck	39.88	52.11	55.78	59.64	51.85	39.88	52.11	55.78	59.64	51.85
Ocean	32.70	33.83	47.25	41.57	38.84	51.93	49.50	52.75	64.50	54.67
Total transportation	72.58	85.94	103.03	101.20	90.69	91.82	101.61	108.53	124.14	106.52
Farm price	153.98	147.62	129.16	130.37	140.28	153.98	147.62	129.16	130.37	140.28
Landed cost	226.56	233.56	232.19	231.57	230.97	245.80	249.23	237.69	254.51	246.81
Transport % of landed cost	32.0	36.8	44.4	43.7	39.2	37.4	40.8	45.7	48.8	43.1
	From Central Ukraine - Izmail									
	To Alexandria, Egypt —US\$/mt—					To Marmara Sea ports, Turkey —US\$/mt—				
	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023
Truck	56.67	73.54	79.79	85.27	73.81	56.67	73.54	79.79	85.27	73.81
Ocean	57.17	47.80	52.50	44.63	50.53	45.90	36.43	40.00	34.10	39.11
Total transportation	113.83	121.34	132.29	129.90	124.34	102.57	109.97	119.79	119.37	112.92
Farm price	153.98	147.62	129.16	130.37	140.28	153.98	147.62	129.16	130.37	140.28
Landed cost	267.81	268.96	261.45	260.27	264.62	256.55	257.59	248.95	249.74	253.21
Transport % of landed cost	42.5	45.1	50.6	49.9	47.0	40.0	42.7	48.1	47.8	44.6
	From Central Ukraine - Constanta									
	To Alexandria, Egypt —US\$/mt—									
	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023					
Truck	56.7	73.5	79.8	85.3	73.8					
Barge Izmail-Constanta	27.2	21.7	35.8	28.0	28.2					
Ocean	14.8	14.2	14.7	17.0	15.2					
Total transportation	98.6	109.4	130.4	130.2	117.2					
Farm price	154.0	147.6	129.2	130.4	140.3					
Landed cost	252.6	257.1	259.5	260.6	257.4					
Transport % of landed cost	39.0	42.6	50.2	50.0	45.5					

Notes: Central Ukraine producing regions are as follows = Cherkasy, Chernihiv, Kherson, Kirovohrad, Kyiv, Mykolaiv, Odesa, Poltava, and Sumy provinces. Export ports - The Port of Odesa was closed during the second quarter of 2022. The freight average was calculated based on the first, third, and fourth quarters of 2022. The Port of Mykolaiv has remained closed to navigation since the second quarter of 2022.

Farm price = elevator price – handling costs – farm-to-elevator transportation.

qtr. = quarter; mt = metric ton; na = not available.

Sources: Centre for Transport Strategies (CFTS) Kyiv, Ukraine, and USDA, Agricultural Marketing Service.



Ukraine Grain Transportation

Table 5. Quarterly costs of transporting Ukrainian corn from the Black Sea ports (using rail delivery to ports) to Egypt, China, Turkey, and Tunisia, 2023

	From Central Ukraine - Odesa									
	To Alexandria, Egypt —US\$/mt—					To Southern ports, China —US\$/mt—				
	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023
Truck	5.54	8.25	6.65	7.19	6.91	5.54	8.25	6.65	7.19	6.91
Rail	29.58	25.51	13.21	15.37	20.92	29.58	25.51	13.21	15.37	20.92
Ocean	34.20	35.47	48.70	42.40	40.19	54.90	55.80	61.33	66.17	59.55
Total transportation	69.32	69.22	68.56	64.96	68.02	90.02	89.55	81.19	88.73	87.37
Farm price	162.18	135.77	130.08	114.88	135.73	162.18	135.77	130.08	114.88	135.73
Landed cost	231.50	204.99	198.64	179.85	203.75	252.20	225.33	211.27	203.61	223.10
Transport % of landed cost	29.9	33.8	34.5	36.1	33.6	35.7	39.7	38.4	43.6	39.4
	From Central Ukraine - Izmail									
	To Alexandria, Egypt —US\$/mt—					To Marmara Sea ports, Turkey —US\$/mt—				
	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023
Truck	5.54	8.25	6.65	7.19	6.91	5.54	8.25	6.65	7.19	6.91
Rail	47.64	41.25	21.01	24.69	33.65	47.64	41.25	21.01	24.69	33.65
Ocean	58.67	49.43	53.93	45.43	51.87	49.23	38.30	41.43	34.97	40.98
Total transportation	111.84	98.94	81.60	77.31	92.42	102.41	87.80	69.10	66.85	81.54
Farm price	162.18	135.77	130.08	114.88	135.73	162.18	135.77	130.08	114.88	135.73
Landed cost	274.03	234.71	211.67	192.20	228.15	264.59	223.57	199.17	181.73	217.27
Transport % of landed cost	40.8	42.2	38.5	40.2	40.4	38.7	39.3	34.7	36.8	37.4
	From Central Ukraine - Constanta									
	To Tunis, Tunisia —US\$/mt—									
	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023					
Truck	5.54	8.25	6.65	7.19	6.91					
Rail	47.64	41.25	21.01	24.69	33.65					
Barge Izmail-Constanta	27.17	21.67	35.83	28.00	28.17					
Ocean	22.07	22.20	22.87	26.07	23.30					
Total transportation	102.41	93.37	86.36	85.95	92.02					
Farm price	162.18	135.77	130.08	114.88	135.73					
Landed cost	264.59	229.14	216.44	200.83	227.75					
Transport % of landed cost	38.7	40.7	39.9	42.8	40.5					

Notes: Central Ukraine producing regions are as follows = Cherkasy, Chernihiv, Kherson, Kirovohrad, Kyiv, Mykolaiv, Odesa, Poltava, and Sumy provinces. Export ports - The Port of Odesa was closed during the second quarter of 2022. The freight average was calculated based on the first, third, and fourth quarters of 2022. The Port of Mykolaiv has remained closed to navigation since the second quarter of 2022. Rail rates include the cost of delivery to the railway station and the cost of renting a grain hopper. However, rail rates do not include the cost of moving and positioning rail cars at the elevator and port, railway station fees, security service from loading to discharging port, or freight-forwarding service. (Any or all of these items could exceed the rail tariff rate.) Rail rates are estimated by using specialized software “TM-Karta” in accordance with Ukrainian Railways (Ukrzaliznytsia) tariff regulation. Farm price = elevator price – handling costs – farm-to-elevator transportation.
qtr. = quarter; mt = metric ton; na = not available.

Sources: Centre for Transport Strategies (CFTS) Kyiv, Ukraine, and USDA, Agricultural Marketing Service.



Ukraine Grain Transportation

Table 6. Quarterly costs of transporting Ukrainian corn from the Black Sea ports (using truck delivery to ports) to Egypt, China, Turkey, and Tunisia, 2023

	From Central Ukraine - Odesa									
	To Alexandria, Egypt —US\$/mt—					To Southern ports, China —US\$/mt—				
	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023
Truck	39.88	52.11	55.78	59.64	51.85	39.88	52.11	55.78	59.64	51.85
Ocean	34.20	35.47	48.70	42.40	40.19	54.90	55.80	61.33	66.17	59.55
Total transportation	74.08	87.57	104.48	102.04	92.04	94.78	107.91	117.11	125.80	111.40
Farm price	162.18	135.77	130.08	114.88	135.73	162.18	135.77	130.08	114.88	135.73
Landed cost	236.27	223.34	234.55	216.92	227.77	256.97	243.68	247.19	240.69	247.13
Transport % of landed cost	31.4	39.2	44.5	47.0	40.5	36.9	44.3	47.4	52.3	45.2
	From Central Ukraine - Izmail									
	To Alexandria, Egypt —US\$/mt—					To Marmara Sea ports, Turkey —US\$/mt—				
	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023
Truck	56.67	73.54	79.79	85.27	73.81	56.67	73.54	79.79	85.27	73.81
Ocean	58.67	49.43	53.93	45.43	51.87	49.23	38.30	41.43	34.97	40.98
Total transportation	115.33	122.97	133.72	130.70	125.68	105.90	111.84	121.22	120.23	114.80
Farm price	162.18	135.77	130.08	114.88	135.73	162.18	135.77	130.08	114.88	135.73
Landed cost	277.52	258.74	263.79	245.58	261.41	268.08	247.61	251.29	235.12	250.53
Transport % of landed cost	41.6	47.5	50.7	53.2	48.2	39.5	45.2	48.2	51.1	46.0
	From Central Ukraine - Constanta									
	To Tunis, Tunisia —US\$/mt—									
	1st qtr. 2023	2nd qtr. 2023	3rd qtr. 2023	4th qtr. 2023	Average 2023					
Truck	56.7	73.5	79.8	85.3	73.8					
Barge Izmail-Constanta	27.2	21.7	35.8	28.0	28.2					
Ocean	22.1	22.2	22.9	26.1	23.3					
Total transportation	105.9	117.4	138.5	139.3	125.3					
Farm price	162.2	135.8	130.1	114.9	135.7					
Landed cost	268.1	253.2	268.6	254.2	261.0					
Transport % of landed cost	39.5	46.4	51.6	54.8	48.1					

Notes: Central Ukraine producing regions are as follows = Cherkasy, Chernihiv, Kherson, Kirovohrad, Kyiv, Mykolaiv, Odesa, Poltava, and Sumy provinces. Export ports - The Port of Odesa was closed during the second quarter of 2022. The freight average was calculated based on the first, third, and fourth quarters of 2022. The Port of Mykolaiv has remained closed to navigation since the second quarter of 2022.

Farm price = elevator price – handling costs – farm-to-elevator transportation.

qtr. = quarter; mt = metric ton; na = not available.

Sources: Centre for Transport Strategies (CFTS) Kyiv, Ukraine, and USDA, Agricultural Marketing Service.



Ukraine Grain Transportation

Table 7. Quarterly rail rates for selected Ukrainian grain and soybean export transportation routes, 2023

Route #	Origin (reference city)	Destination	Distance (miles)	Share (%)	Freight price (US\$/mt/100 miles)				
					1st qtr	2nd qtr	3rd qtr	4th qtr	Avg
1	Western Ukraine (Khmelnitskii, station Starokonstantinov 1)	Izmail	511	31.5	8.06	6.97	3.58	4.21	5.70
2	Western Ukraine (Khmelnitskii, station Starokonstantinov 1)	Odesa	339		8.72	7.52	3.89	4.53	6.17
3	Eastern Ukraine (Kharkiv, station Lihachevo)	Izmail	773	18.6	7.81	6.86	3.40	4.04	5.53
4	Eastern Ukraine (Kharkiv, station Lihachevo)	Odesa	521		7.99	7.07	3.53	4.16	5.69
5	Central Ukraine (Cherkasy, station Zolotonosha 1)	Izmail	593	49.9	8.04	6.96	3.54	4.17	5.68
6	Central Ukraine (Cherkasy, station Zolotonosha 1)	Odesa	341		8.67	7.48	3.87	4.51	6.13

Notes: Although each origin region comprises several cities, the major station at the center of each region is considered as a reference to establish the freight price. Western Ukraine producing regions are as follows = Chernivtsi, Ivano-Frankivsk, Khmel'nitskii, Lviv, Rivne, Ternopil, Vinnytsia, Volyn, Zakarpattia, and Zhytomyr provinces. Eastern Ukraine producing regions are as follows = Dnipropetrovsk, Donetsk, Kharkiv, Luhansk, and Zaporizhia provinces. Central Ukraine producing regions are as follows = Cherkasy, Chernihiv, Kherson, Kirovohrad, Kyiv, Mykolaiv, Odesa, Poltava, and Sumy provinces. Share is measured as a percentage of total production and illustrates the production in the region. Rail rates include the cost of delivery to the railway station and the cost of renting a grain hopper. However, rail rates do not include the cost of moving and positioning rail cars at the elevator and port, railway station fees, security service from loading to discharging port, or freight-forwarding service. (Any or all of these items could exceed the rail tariff rate.) Rail rates are estimated by using specialized software "TM-Karta" in accordance with Ukrainian Railways (Ukrzaliznytsia) tariff regulation. Average monthly exchange rate from the National Bank of Ukraine was used to convert Ukrainian Hryvnia to U.S. dollars.

qtr = quarter; mt = metric ton; Avg = average.

Sources: Centre for Transport Strategies (CFTS) Kyiv, Ukraine, and USDA, Agricultural Marketing Service.



Ukraine Grain Transportation

Table 8. Monthly Ukrainian grain and oilseeds export truck transportation cost index

Month	Freight price (US\$/mt/100 miles)	Index variation (%) (Base: prior month)	Index value (Base: Jan. 05 = 100)	Month	Freight price (US\$/mt/100 miles)	Index variation (%) (Base: prior month)	Index value (Base: Jan. 05 = 100)
Jan-19	18.65	0.0	100.00	Jan-22	14.96	-11.3	80.21
Feb-19	19.15	2.6	102.65	Feb-22	16.15	7.9	86.58
Mar-19	16.75	-12.5	89.81	Mar-22	17.17	6.3	92.06
Apr-19	14.92	-10.9	79.99	Apr-22	17.94	4.5	96.19
May-19	15.16	1.6	81.30	May-22	18.38	2.5	98.55
Jun-19	15.09	-0.5	80.93	Jun-22	19.15	4.2	102.68
Jul-19	15.53	2.9	83.28	Jul-22	16.93	-11.6	90.79
Aug-19	15.84	2.0	84.94	Aug-22	17.61	4.0	94.42
Sep-19	16.15	1.9	86.58	Sep-22	19.46	10.5	104.33
Oct-19	16.12	-0.2	86.45	Oct-22	19.81	1.8	106.22
Nov-19	18.47	14.5	99.01	Nov-22	20.16	1.8	108.11
Dec-19	17.80	-3.6	95.42	Dec-22	20.84	3.4	111.73
Jan-20	17.41	-2.2	93.36	Jan-23	12.11	-41.9	64.91
Feb-20	15.94	-8.5	85.45	Feb-23	11.86	-2.0	63.59
Mar-20	16.43	3.1	88.10	Mar-23	10.08	-15.0	54.05
Apr-20	13.58	-17.4	72.79	Apr-23	12.31	22.1	65.97
May-20	13.57	0.0	72.78	May-23	15.04	22.2	80.63
Jun-20	13.31	-1.9	71.39	Jun-23	16.13	7.3	86.50
Jul-20	10.74	-19.3	57.58	Jul-23	15.31	-5.1	82.10
Aug-20	7.63	-29.0	40.91	Aug-23	15.31	0.0	82.10
Sep-20	9.87	29.4	52.92	Sep-23	18.07	18.0	96.91
Oct-20	7.77	-21.3	41.66	Oct-23	17.52	-3.0	93.96
Nov-20	8.14	4.8	43.64	Nov-23	17.70	1.0	94.89
Dec-20	8.70	6.9	46.64	Dec-23	16.77	-5.2	89.91
Jan-21	6.22	-28.5	33.35				
Feb-21	6.99	12.4	37.48				
Mar-21	9.90	41.6	53.08				
Apr-21	8.70	-12.1	46.64				
May-21	7.41	-14.8	39.73				
Jun-21	11.47	54.8	61.50				
Jul-21	13.84	20.7	74.22				
Aug-21	14.91	7.7	79.92				
Sep-21	18.67	25.3	100.12				
Oct-21	20.94	12.1	112.26				
Nov-21	22.83	9.0	122.40				
Dec-21	16.87	-26.1	90.44				

Sources: Centre for Transport Strategies (CFTS) Kyiv, Ukraine, Zernovoz, Kyiv, Ukraine, and USDA, Agricultural Marketing Service.



Ukraine Grain Transportation

Table 9. Quarterly ocean freight rates for shipping grain and soybeans from selected Ukrainian ports (US\$/metric ton)

Cargo	Port	Destination	Vessel size --metric ton--	1st qtr 2021	2nd qtr 2021	3rd qtr 2021	4th qtr 2021
Wheat	Mykolaiv	Alexandria, Egypt	25,000-30,000	21.67	24.17	35.00	33.67
Wheat	Mykolaiv	Ciwandan/Cigading, Indonesia	50,000-55,000	45.50	51.00	72.83	61.33
Wheat	Odesa	Alexandria, Egypt	25,000-30,000	19.50	21.50	31.50	31.00
Wheat	Odesa	Ciwandan/Cigading, Indonesia	50,000-55,000	43.33	48.33	69.33	58.67
Corn	Mykolaiv	Alexandria, Egypt	25,000-30,000	21.67	24.17	35.00	33.67
Corn	Mykolaiv	Southern ports, China	50,000-55,000	42.25	49.42	66.42	56.75
Corn	Odesa	Alexandria, Egypt	25,000-30,000	19.50	21.50	31.50	31.00
Corn	Odesa	Southern ports, China	60,000-70,000	39.50	46.67	63.67	54.00
Soybeans	Mykolaiv	Southern ports, China	60,000-70,000	41.25	48.42	65.42	55.75
Soybeans	Odesa	Southern ports, China	60,000-70,000	39.50	46.67	63.67	54.00
Cargo	Port	Destination	Vessel size --metric ton--	1st qtr 2022	2nd qtr 2022	3rd qtr 2022	4th qtr 2022
Wheat	Mykolaiv	Alexandria, Egypt	25,000-30,000	36.98	--na--	--na--	--na--
Wheat	Mykolaiv	Ciwandan/Cigading, Indonesia	50,000-55,000	65.30	--na--	--na--	--na--
Wheat	Odesa	Alexandria, Egypt	25,000-30,000	34.09	--na--	58.93	68.93
Wheat	Odesa	Ciwandan/Cigading, Indonesia	50,000-55,000	62.41	--na--	91.27	101.27
Corn	Mykolaiv	Alexandria, Egypt	25,000-30,000	36.98	--na--	--na--	--na--
Corn	Mykolaiv	Southern ports, China	50,000-55,000	60.96	--na--	--na--	--na--
Corn	Odesa	Alexandria, Egypt	25,000-30,000	34.09	--na--	58.93	68.93
Corn	Odesa	Southern ports, China	60,000-70,000	57.78	--na--	85.99	95.99
Soybeans	Mykolaiv	Southern ports, China	60,000-70,000	59.81	--na--	--na--	--na--
Soybeans	Odesa	Southern ports, China	60,000-70,000	57.78	--na--	85.99	95.99
Cargo	Port	Destination	Vessel size --metric ton--	1st qtr 2023	2nd qtr 2023	3rd qtr 2023	4th qtr 2023
Wheat	Odesa	Alexandria, Egypt	25,000-30,000	32.70	33.83	47.25	41.57
Wheat	Odesa	Ciwandan/Cigading, Indonesia	50,000-55,000	51.93	49.50	52.75	64.50
Wheat	Izmail	Alexandria, Egypt	5,000-6,000	57.17	47.80	52.50	44.63
Wheat	Izmail	Marmara Sea ports, Turkey	5,000-6,000	45.90	36.43	40.00	34.10
Wheat	Constanta	Alexandria, Egypt	25,000-30,000	14.77	14.23	14.73	16.97
Corn	Odesa	Alexandria, Egypt	25,000-30,000	34.20	35.47	48.70	42.40
Corn	Odesa	Southern ports, China	60,000-70,000	54.90	55.80	61.33	66.17
Corn	Izmail	Alexandria, Egypt	5,000-6,000	58.67	49.43	53.93	45.43
Corn	Izmail	Marmara Sea ports, Turkey	3,000	49.23	38.30	41.43	34.97
Corn	Constanta	Tunis, Tunisia	25,000-30,000	22.07	22.20	22.87	26.07

Notes: China's main southern ports include Shanghai, Ningbo, Shenzhen, and Guangdong. na = not available.

The Port of Odesa was closed during the second quarter of 2022. The freight average was calculated based on the first, third, and fourth quarters of 2022. The Port of Mykolaiv has remained closed to navigation since the second quarter of 2022.

Sources: Centre for Transport Strategies (CFTS) Kyiv, Ukraine, and USDA, Agricultural Marketing Service.



Ukraine Grain Transportation

Acknowledgments:

For data, regional information, and maps of Ukraine, the author would like to thank the Centre for Transport Strategies in Kyiv, Ukraine. The author is, also, grateful for comments and critiques by Shawn Arita, Joanna Hitchner (USDA, Office of the Chief Economist); Rachel Trego, (USDA, FAS); Denys Sobolev (USDA, FAS, Office of Agricultural Affairs, Kyiv, Ukraine); and Andrew Sowell (Economic Research Service). Thanks, also, to USDA, Agricultural Marketing Service employees Maria Williams, editor, Jessica Ladd, graphic designer, and Kranti Mulik, Economist.

Contact Information:

Delmy L. Salin
Senior Economist, Project Manager
delmy.salin@usda.gov
202.720.0833

Jessica Ladd
Graphic Analyst
jessica.ladd@usda.gov
202.720.6494

Data Sets (XLS files):

- [Figure 1a. Ukrainian grain and oilseeds monthly maritime export, 2023](#)
- [Figure 1b. Ukrainian wheat, corn, and soybeans export truck cost index, 2021-23](#)
- [Figure 1c. Ukraine agricultural exports by mode of transport 2022-24](#)
- [Table 1a. Ukraine and U.S. Gulf wheat and corn prices, 2021-23](#)
- [Table 1b. Tonnages and modal shares for Ukrainian grain and oilseeds exports, 2018-23](#)
- [Table 1c. Export of grain and oilseeds from Ukraine through western routes, 2021-23](#)
- [Table 2a. Average costs of transporting Ukrainian wheat from the Black Sea ports \(using rail delivery to ports\) to Egypt, Indonesia, and Turkey, 2022-23](#)
- [Table 2b. Average costs of transporting Ukrainian wheat from the Black Sea ports \(using truck delivery to ports\) to Egypt, Indonesia, and Turkey, 2022-23](#)
- [Table 2c. Average costs of transporting corn from the Black Sea ports \(using rail delivery to ports\) to Egypt, China, Turkey, and Tunisia, 2022-23](#)
- [Table 2d. Average costs of transporting Ukrainian corn from the Black Sea ports \(using truck delivery to ports\) to Egypt, China, Turkey, and Tunisia, 2022-23](#)
- [Table 3. Quarterly costs of transporting Ukrainian wheat from the Black Sea ports \(using rail delivery to ports\) to Egypt, Indonesia, and Turkey, 2023](#)
- [Table 4. Quarterly costs of transporting Ukrainian wheat from the Black Sea ports \(using truck delivery to ports\) to Egypt, Indonesia, and Turkey, 2023](#)
- [Table 5. Quarterly costs of transporting Ukrainian corn from the Black Sea ports \(using rail delivery to ports\) to Egypt, China, Turkey, and Tunisia, 2023](#)
- [Table 6. Quarterly costs of transporting Ukrainian corn from the Black Sea ports \(using truck delivery to ports\) to Egypt, China, Turkey, and Tunisia, 2023](#)
- [Table 7. Quarterly rail rates for selected Ukrainian grain and soybean export transportation routes, 2023](#)
- [Table 8. Monthly Ukrainian grain and oilseeds export truck transportation cost index](#)

Preferred Citation:

Delmy Salin. June 2024. *Ukraine Grain Transportation*, U.S. Department of Agriculture, Agricultural Marketing Service. Web <<http://dx.doi.org/10.9752/TS260.06-2024>>

Photo Credit: USDA

USDA is an equal opportunity provider, employer, and lender.