



# **Grain Transportation Report**

A weekly publication of the Agricultural Marketing Service www.ams.usda.gov/GTR

WEEKLY HIGHLIGHTS

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The next release is September 1, 2022 FMC Seeks Comments on Potential Mandatory Information Sharing

The Federal Maritime Commission (FMC) seeks public comment by September 14 on whether supply chain congestion is dire enough to warrant an emergency order requiring information sharing to resolve the issue. The FMC emergency order under consideration would require common carriers and marine terminal operators to share key information with shippers, truckers, and railroads. The Ocean Shipping Reform Act of 2022 authorizes FMC to issue such an emergency order after seeking input on three questions, as follows: whether congestion has substantially impaired the competitiveness and reliability of the ocean transportation system; whether an FMC emergency order would alleviate the situation; and what the appropriate scope of an FMC emergency order would be.

#### BNSF To End Embargo on Shipments into California

BNSF railroad has announced it will end its restrictions on shipments into California on September 4. In late June, BNSF began limiting shipments of some commodities, including some agriculture, with the goal of improving performance. Since July, a number of grain commodities and food products have been exempted from the restrictions. BNSF said the embargo enabled the railroad to "significantly reduce backlogs and drive greater efficiencies for trains moving both towards and in California, and throughout our network." Across its network, BNSF's number of unfilled grain car orders has improved significantly since its peak in early June. However, BNSF's average number of grain shuttle train roundtrips into California remains well below average. In 2021, BNSF originated 51 percent of US Class I railroad grain carloads, so strong performance from BNSF will be necessary to minimize disruptions in the upcoming harvest.

#### ATRI Updates 2022 Report on Operational Costs of Trucking

The American Transportation Research Institute (ATRI) recently updated its 2022 annual report *An Analysis of the Operational Costs of Trucking* based on 2021 financial data from motor carriers. According to the report, the total marginal cost of trucking rose 12.7 percent in 2021 to \$1.855 per mile (\$74.65 per hour), the highest on record. Much of this increase stemmed from three factors: fuel, (35.4 percent higher than in 2020); repair and maintenance (18.2 percent higher than in 2020); and driver wages (10.8 percent higher than in 2020). Overall, fleets with 100 trucks or fewer spent 4.9 cents more per mile than fleets with more than 100 trucks—closing the 2020 gap between small and large fleets by 70 percent. Among other findings, empty mileage fell to 14.8 percent, and average truck fuel economy rose to 6.65 miles per gallon. Large fleets spent less than small fleets on insurance premiums per mile, but had higher out-of-pocket incident costs per mile. The full report can be accessed here.

**Snapshots by Sector** 

**Export Sales** 

For the week ending August 11, **unshipped balances** of wheat, corn, and soybeans totaled 12.64 mmt, up 6 percent from the same time last year and down 9 percent from the previous week. Net **corn export sales** were 0.099 mmt, down 48 percent from the previous week. Net **soybean export sales** were 0.097, up significantly from the previous week. Net weekly **wheat export sales** for marketing year 2022/23 were 0.207 mmt, down 42 percent from last week.

Rail

U.S. Class I railroads originated 21,408 grain carloads during the week ending August 13. This was a 7-percent increase from the previous week, 11 percent more than last year, and 2 percent more than the 3-year average.

Average September shuttle **secondary railcar** bids/offers (per car) were \$485 above tariff for the week ending August 18. This was \$25 more than last week and \$536 more than this week last year. There were no non-shuttle bids/offers this week.

Barge

For the week ending August 20, **barged grain movements** totaled 360,585 tons. This was 33 percent lower than the previous week and 10 percent lower the same period last year.

For the week ending August 20, 220 grain barges **moved down river**—121 fewer barges than last week. There were 649 grain barges **unloaded** in the New Orleans region, 37 percent more than last week.

Ocean

For the week ending August 18, 26 oceangoing grain vessels were loaded in the Gulf—8 percent more than the same period last year. Within the next 10 days (starting August 19), 32 vessels were expected to be loaded—3 percent more than the same period last year.

As of August 18, the rate for shipping a metric ton (mt) of grain from the U.S. Gulf to Japan was \$63.00. This was 4 percent less than the previous week. The rate from the Pacific Northwest to Japan was \$36.50 per mt, 4 percent less than the previous week

Fuel

For the week ending August 22, the U.S. average diesel fuel price decreased 0.2 cents from the previous week to \$4.909 per gallon, 158.5 cents above the same week last year.

#### Feature Article/Calendar

#### Transportation Costs Varied, But Landed Costs of Grain to Mexico Rose in Second Quarter 2022

Mexico is a major importer of U.S. grain (*GTR* tables 13, 14, and 15). Low transportation and landed costs for U.S.-Mexico routes are vital to the competitiveness of U.S. grain (corn, soybeans, and wheat) in Mexico and globally. U.S. grain is transported to Mexico either by cross-border land movements or by sea movements to Mexican ports for inland distribution. This article examines the costs of transporting U.S. grain to Mexico over land to Guadalajara (land routes) and by sea to Veracruz (water routes), tracking changes over time (table 1).

Table 1.	Quarterly	costs of t	ransporti	ng U.S. g	rain to Ver	acruz and	d Guadala	ajara, Me	xico	
								_		
			route (to V				<u>Land route (to Guadalajara)</u>			
			metric to			\$/metric ton				
	2021	2022	2022		t change	2021	2022	2022		t change
	2 <sup>nd</sup> qtr.	1 <sup>st</sup> qtr.	2 <sup>nd</sup> qtr.	Yr. to yr.	Qtr. to qtr.		1 <sup>st</sup> qtr.	2 <sup>nd</sup> qtr.	Yr. to yr.	Qtr. to qtr.
Origin			IL		Co	<u>rn</u>		IA		
Truck	13.99	16.67	23.40	67.3	40.4	4.98	5.58	7.13	43.2	27.8
Rail <sup>1</sup>	_	_	-	-	_	96.73	100.08	102.35	5.8	2.3
Barge	17.29	39.23	27.98	61.8	-28.7	-	-	-	-	-
Ocean <sup>2</sup>	23.75	22.51	26.27	10.6	16.7	_	-	_	_	-
Total transportation cost	55.03	78.41	77.65	41.1	-1.0	101.71	105.66	109.48	7.6	3.6
Farm value <sup>3</sup>	229.91	241.59	290.14	26.2	20.1	230.57	241.46	287.91	24.9	19.2
Landed cost <sup>4</sup>	284.94	320.00	367.79	29.1	14.9	332.28	347.12	397.39	19.6	14.5
Transport % of landed cost	19	25	21	1.80	-3.39	31	30	28	-3.06	-2.9
·					Soyb	eans				
Origin			IL		_			NE		
Truck	13.99	16.67	23.40	67.3	40.4	4.98	5.58	7.13	43.2	27.8
Rail	-	-	-	-	-	99.21	100.95	103.32	4.1	2.3
Barge	17.29	39.23	27.98	61.8	-28.7	-	-	-	-	-
Ocean	23.75	22.51	26.27	10.6	16.7	-	-	-	-	-
Total transportation cost	55.03	78.41	77.65	41.1	-1.0	104.19	106.53	110.45	6.0	3.7
Farm value	527.88	527.88	601.37	13.9	13.9	519.31	526.66	579.33	11.6	10.0
Landed cost	582.91	606.29	679.02	16.5	12.0	623.50	633.19	689.78	10.6	8.9
Transport % of landed cost	9	13	11	2.00	-1.50	17	17	16	-0.70	-0.8
					Wh	eat				
Origin			KS					KS		
Truck	4.98	5.58	7.13	43.2	27.8	4.98	5.58	7.13	43.2	27.8
Rail	42.07	43.80	44.47	5.7	1.5	83.37	85.63	87.24	4.6	1.9
Ocean	23.75	22.51	26.27	10.6	16.7	-	-	-		
Total transportation cost	70.80	71.89	77.87	10.0	8.3	88.35	91.21	94.37	6.8	3.5
Farm value	227.44	319.79	370.01	62.7	15.7	227.44	319.79	370.01	62.7	15.7
Landed cost	298.24	391.68	447.88	50.2	14.3	315.79	411.00	464.38	47.1	13.0
Transport % of landed cost	24	18	17	-6	-1	28	22	20	-8	-1.9

<sup>&</sup>lt;sup>1</sup>Rail rates include U.S. and Mexico portions of the movement. Mexico rail rates are estimated based on actual quoted market rates.

Due to tax changes in Mexico, all three Class I railroads that ship from the U.S. to Mexico (BNSF, Union Pacific, and

Kansas City Southern) are only reporting rates to the border for interchange, called Rule 11 rates. Because comparable data were not available,

it was assumed rail rates did not change from fourth quarter 2021 to first quarter 2022, and second quarter 2022 but fuel surcharges were still updated.

Note: "-" indicates data not required or applicable. Total may not add exactly because of rounding.

Source: Compiled by the USDA, Agricultural Marketing Service.

**Quarter-to-quarter transportation costs.** From first quarter 2022 to second quarter 2022 (quarter to quarter), total transportation costs decreased for corn and soybeans shipped through the water routes, but increased for waterborne wheat. Total transportation costs increased for U.S. corn, soybeans, and wheat through the land routes. Falling water-route shipping costs for corn and soybeans mainly reflected lower barge rates. Land-route shipping costs increased with rising truck and rail rates (public tariff, plus fuel surcharge).

**Grain Transportation Report** 

BNSF and Union Pacific quoted rail tariff rates are through rates for shuttle trains. Rail rates include fuel surcharges, but do not include

the cost of purchasing empty rail cars in the secondary market, which could exceed the rail tariff rate plus fuel surcharge shown in the table.

<sup>&</sup>lt;sup>2</sup>Source for ocean freight rates: O'Neil Commodity Consulting.

<sup>&</sup>lt;sup>3</sup>Source for farm values: USDA, National Agricultural Statistics Service.

<sup>&</sup>lt;sup>4</sup>Landed cost is total transportation cost plus farm value.

<sup>&</sup>lt;sup>1</sup> Water routes typically involve truck transportation to barge to oceangoing vessel, or truck to rail to oceangoing vessel.

Truck rates rose partly because of a quarter-toquarter rise in diesel fuel prices (GTR fig. 13). Rail rates rose in response to the increase in fuel surcharges amid a higher fuel prices. Reflecting extreme weather and fears of economic downturn, soft demand for barges led to falling barge rates. (Grain Transportation Report, July 28, 2022).

Year-to-year transportation costs. From second quarter 2021 to second quarter 2022 (year to year), total costs of shipping all grain to Mexico by the water routes rose because of higher truck, barge, and ocean freight rates. A rise in total costs of shipping all grain to Mexico by the land routes reflected higher truck and rail rates.

Dollars per metric ton

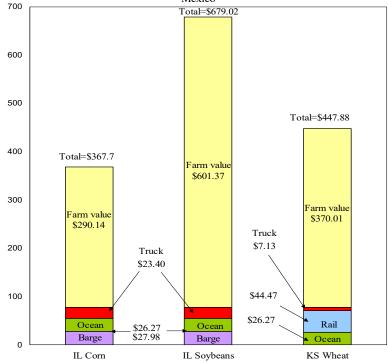
**Ouarter-to-guarter landed costs.** Ouarter to quarter, landed costs rose for all grain shipped via the water and land routes. For seaborne corn and soybeans, the higher landed costs reflected rising farm values. For seaborne wheat and all grain shipped through the land routes, landed costs rose because of increases in both transportation costs and farm values (table 1 and figs. 1 and 2). The share of landed costs comprising transportation ranged from 11 percent to 21 percent for the water routes and from 16 percent to 28 percent for the land routes. Transportation's share of the landed costs declined with rising farm values.

Year-to-year landed costs. Year to year, landed costs increased for all waterborne and land-route grain, because of both higher transportation costs and higher farm values.

U.S. Exports to Mexico. According to USDA's Federal Grain Inspection Service, the United States exported 4.06 million metric tons (mmt) of corn, 1.28 mmt of soybeans, and 0.90 mmt of wheat to Mexico in second quarter 2022. In first quarter 2022, the United States exported 4.00 mmt of corn, 1.28 mmt of soybeans, and 0.98 mmt of wheat to Mexico. Quarter to quarter, U.S. inspections for export to Mexico increased 1 percent for corn, remained the same for soybeans, and decreased 8 percent for wheat. Year to year, U.S. inspections destined to Mexico showed declines of 8 percent for corn and 10 percent for wheat, while soybean inspections rose 39 percent.

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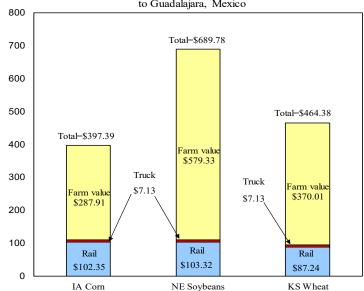
Figure 1. Second-quarter 2022 water-route landed costs to Veracruz, Mexico



Note: IL = Illinois; KS = Kansas.

Source: USDA, Agricultural Marketing Service.

Figure 2. Second-quarter 2022 land-route landed costs to Guadalajara, Mexico



Note: IA = Iowa: NE = Nebraska: KS = Kansas. Source: USDA, Agricultural Marketing Service.

### **Grain Transportation Indicators**

Table 1 Grain transport cost indicators<sup>1</sup>

	Truck	Rai	Rail		Ocean		
For the week ending		Non-Shuttle	Shuttle		Gulf	Pacific	
08/24/22	329	326	253	258	282	259	
08/17/22	330	326	241	249	293	270	

<sup>&</sup>lt;sup>1</sup>Indicator: Base year 2000 = 100. Weekly updates include truck = diesel (\$/gallon); rail = near-month secondary rail market bid and monthly tariff rate with fuel surcharge (\$/car); barge = Illinois River barge rate (index = percent of tariff rate); ocean = routes to Japan (\$/metric ton); n/a = not available.

Source: USDA, Agricultural Marketing Service.

Table 2 Market Update: U.S. origins to export position price spreads (\$/bushel)

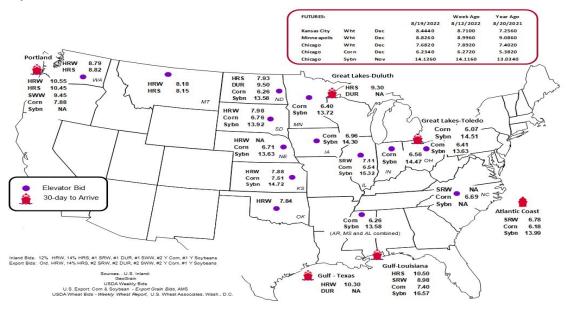
Commodity	Origin-destination	8/19/2022	8/12/2022
Corn	IL-Gulf	-0.86	-0.90
Corn	NE-Gulf	-0.69	-0.59
Soybean	IA-Gulf	-2.27	-2.85
HRW	KS-Gulf	-2.42	-2.31
HRS	ND-Portland	-2.52	-2.42

Note: nq = no quote; n/a = not available; HRW = hard red winter wheat; HRS = hard red spring wheat.

Source: USDA, Agricultural Marketing Service.

The grain bid summary illustrates the market relationships for commodities. Positive and negative adjustments in differential between terminal and futures markets, and the relationship to inland market points, are indicators of changes in fundamental market supply and demand. The map may be used to monitor market and time differentials.

Figure 1 Grain bid summary



### **Rail Transportation**

Table 3

Rail deliveries to port (carloads)<sup>1</sup>

	Mississippi		Pacific	Atlantic &			Cross-border
For the week ending	Gulf	Texas Gulf	Northwest	East Gulf	Total	Week ending	Mexico <sup>3</sup>
8/17/2022 <sup>p</sup>	321	674	3,173	105	4,273	8/13/2022	2,139
8/10/2022 <sup>r</sup>	451	1,104	2,952	154	4,661	8/6/2022	2,906
2022 YTD <sup>r</sup>	40,304	28,229	167,359	15,141	251,033	2022 YTD	88,428
2021 YTD <sup>r</sup>	36,249	44,319	185,610	10,147	276,325	2021 YTD	91,192
2022 YTD as % of 2021 YTD	111	64	90	149	91	% of 2021 YTD	97
Last 4 weeks as % of 2021 <sup>2</sup>	190	101	118	152	122	Last 4wks. % 2021	87
Last 4 weeks as % of 4-year avg. <sup>2</sup>	115	77	72	36	74	Last 4wks. % 4 yr.	90
Total 2021	53,554	68,335	305,865	21,913	449,667	Total 2021	145,883
Total 2020	45,177	63,348	296,060	24,202	428,787	Total 2020	126,407

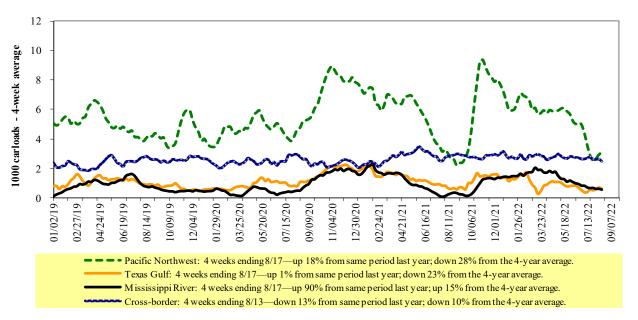
<sup>&</sup>lt;sup>1</sup>Data is incomplete as it is voluntarily provided.

YTD = year-to-date; p = preliminary data; r = revised data; n/a = not available; wks. = weeks; avg. = average.

Source: USDA, Agricultural Marketing Service.

Railroads originate approximately 24 percent of U.S. grain shipments. Trends in these loadings are indicative of market conditions and expectations.

Figure 2 Rail deliveries to port



Source: USDA, Agricultural Marketing Service.

<sup>&</sup>lt;sup>2</sup> Compared with same 4-weeks in 2021 and prior 4-year average.

<sup>&</sup>lt;sup>3</sup> Cross-border weekly data is approximately 15 percent below the Association of American Railroads' reported weekly carloads received by Mexican railroads to reflect switching between Kansas City Southern de Mexico (KCSM) and Grupo Mexico.

Table 4

Class I rail carrier grain car bulletin (grain carloads originated)

For the week ending:	E	ast		West		U.S. total	Ca	nada
8/13/2022	CSXT	NS	BNSF	KCS	UP	U.S. total	CN	CP
This week	1,704	2,383	9,349	1,151	6,821	21,408	2,063	3,023
This week last year	1,342	1,997	9,369	1,316	5,347	19,371	2,737	2,440
2022 YTD	57,750	78,653	351,795	38,638	184,189	711,025	110,178	109,962
2021 YTD	59,191	81,240	381,415	35,516	199,164	756,526	133,934	159,731
2022 YTD as % of 2021 YTD	98	97	92	109	92	94	82	69
Last 4 weeks as % of 2021*	125	111	108	92	110	109	106	83
Last 4 weeks as % of 3-yr. avg.**	114	101	93	94	109	100	84	69
Total 2021	93,935	120,693	609,890	64,818	318,002	1,207,338	210,044	242,533

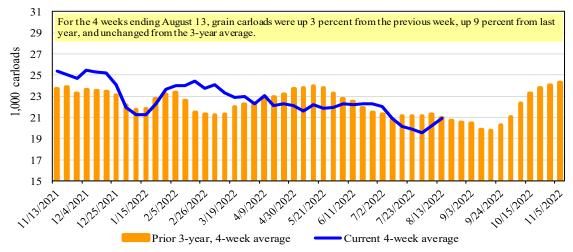
<sup>\*</sup>The past 4 weeks of this year as a percent of the same 4 weeks last year.

Note: NS = Norfolk Southern; KCS = Kansas City Southern; UP = Union Pacific; CN = Canadian National; CP = Canadian Pacific.

Source: Association of American Railroads.

Figure 3

Total weekly U.S. Class I railroad grain carloads



Source: Association of American Railroads.

Table 5
Railcar auction offerings 1 (\$/car)<sup>2</sup>

Fo	r the week ending:		<u>Delivery period</u>							
	8/18/2022	Sep-22	Sep-21	Oct-22	Oct-21	Nov-22	Nov-21	Dec-22	Dec-21	
BNSF <sup>3</sup>	COT grain units	48	0	73	0	31	no bids	17	no bids	
	COT grain single-car	126	0	156	0	170	0	80	0	
UP <sup>4</sup>	GCAS/Region 1	no offer	no offer	no offer	no offer	no offer	no offer	n/a	n/a	
	GCAS/Region 2	no offer	no offer	no offer	no offer	no offer	no offer	n/a	n/a	

Auction offerings are for single-car and unit train shipments only.

Region 1 includes: AR, IL, LA, MO, NM, OK, TX, WI, and Duluth, MN.

Region 2 includes: CO, IA, KS, MN, NE, WY, and Kansas City and St. Joseph, MO.

Source: USDA, Agricultural Marketing Service.

<sup>\*\*</sup>The past 4 weeks as a percent of the same period from the prior 3-year average. YTD = year-to-date; avg. = average; yr. = year.

 $<sup>^{2}</sup>$ Average premium/discount to tariff, last auction. n/a = not available.

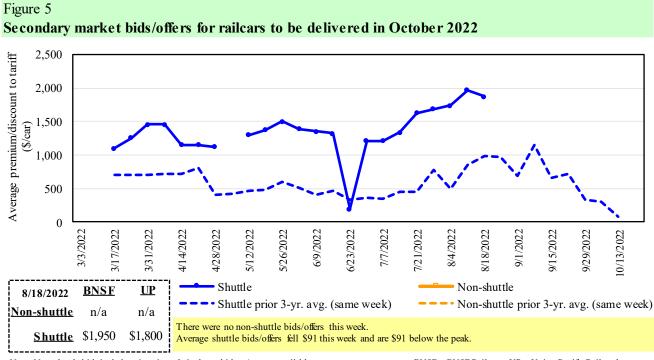
<sup>&</sup>lt;sup>3</sup>BNSF - COT = BNSF Railway Certificate of Transportation; north grain and south grain bids were combined effective the week ending 6/24/06.

<sup>&</sup>lt;sup>4</sup>UP - GCAS = Union Pacific Railroad Grain Car Allocation System.

The **secondary rail market** information reflects trade values for service that was originally purchased from the railroad carrier as some form of guaranteed freight. The **auction and secondary rail** values are indicators of rail service quality and demand/ supply.

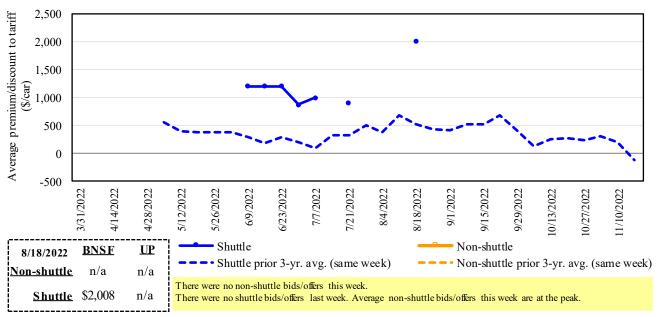
Figure 4 Secondary market bids/offers for railcars to be delivered in September 2022 600 Average premium/discount to tariff 500 400 300 (\$/car) 200 100 0 -100 -200 -300 4/7/2022 5/5/2022 6/2/2022 2/24/2022 3/10/2022 3/24/2022 5/19/2022 7/28/2022 8/11/2022 9/8/2022 1/27/2022 2/10/2022 4/21/2022 6/16/2022 6/3 0/2022 7/14/2022 8/25/2022 Shuttle Non-shuttle **BNSF** <u>UP</u> 8/18/2022 Shuttle prior 3-yr. avg. (same week) Non-shuttle prior 3-yr. avg. (same week) Non-shuttle n/a n/a There were no non-shuttle bids/offers this week. \$478 \$492 **Shuttle** Average shuttle bids/offers rose \$25 this week and are \$6 below the peak.

Note: Non-shuttle bids include unit-train and single-car bids. n/a = not available; avg. = average; yr. = year; BNSF = BNSF Railway; UP = Union Pacific Railroad. Source: USDA, Agricultural Marketing Service.



Note: Non-shuttle bids include unit-train and single-car bids. n/a = not available; avg. = average; yr. = year; BNSF = BNSF Rail way; UP = Union Pacific Railroad. Source: USDA, Agricultural Marketing Service.

Figure 6
Secondary market bids/offers for railcars to be delivered in November 2022



Note: Non-shuttle bids include unit-train and single-car bids. n/a = not available; avg. = average; yr. = year; BNSF = BNSF Railway; UP = Union Pacific Railroad. Source: USDA, Agricultural Marketing Service.

Table 6

Weekly secondary railcar market (\$/car)<sup>1</sup>

	For the week ending:			Del	ivery period		
	8/18/2022	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23
	BNSF-GF	n/a	n/a	n/a	n/a	n/a	n/a
<u>e</u>	Change from last week	n/a	n/a	n/a	n/a	n/a	n/a
shuttle	Change from same week 2021	n/a	n/a	n/a	n/a	n/a	n/a
Non-s	UP-Pool	n/a	n/a	n/a	n/a	n/a	n/a
ž	Change from last week	n/a	n/a	n/a	n/a	n/a	n/a
	Change from same week 2021	n/a	n/a	n/a	n/a	n/a	n/a
	BNSF-GF	478	1,950	2,008	600	n/a	n/a
	Change from last week	33	(181)	n/a	0	n/a	n/a
ttle	Change from same week 2021	504	1,203	1,689	n/a	n/a	n/a
Shuttle	UP-Pool	492	1,800	n/a	n/a	n/a	n/a
	Change from last week	17	0	n/a	n/a	n/a	n/a
	Change from same week 2021	567	969	n/a	n/a	n/a	n/a

<sup>&</sup>lt;sup>1</sup>Average premium/discount to tariff, \$/car-last week.

Note: Bids listed are market indicators only and are not guaranteed prices. n/a = not available; GF = guaranteed freight; Pool = guaranteed pool; BNSF = BNSF Railway; UP = Union Pacific Railroad.

Data from James B. Joiner Co., Tradewest Brokerage Co.

Source: USDA, Agricultural Marketing Service.

The **tariff rail rate** is the base price of freight rail service. Together with **fuel surcharges** and any **auction and secondary rail** values, the tariff rail rate constitutes the full cost of shipping by rail. Typically, auction and secondary rail values are a small fraction of the full cost of shipping by rail relative to the tariff rate. However, during times of high rail demand or short supply, high auction and secondary rail values can exceed the cost of the tariff rate plus fuel surcharge.

Table 7

Tariff rail rates for unit and shuttle train shipments 1

				Fuel			Percent
			Tariff	surcharge_	Tariff plus surc		change
August 2022	Origin region <sup>3</sup>	Destination region <sup>3</sup>	rate/car	per car	metric ton	bushel <sup>2</sup>	Y/Y <sup>4</sup>
<u>Unit train</u>							
Wheat	Wichita, KS	St. Louis, MO	\$3,695	\$374	\$40.41	\$1.10	7
	Grand Forks, ND	Duluth-Superior, MN	\$3,858	\$0	\$38.31	\$1.04	5
	Wichita, KS	Los Angeles, CA	\$7,490	\$0	\$74.38	\$2.02	5
	Wichita, KS	New Orleans, LA	\$4,600	\$659	\$52.22	\$1.42	11
	Sioux Falls, SD	Galveston-Houston, TX	\$7,226	\$0	\$71.76	\$1.95	5
	Colby, KS	Galveston-Houston, TX	\$4,850	\$722	\$55.33	\$1.51	11
	Amarillo, TX	Los Angeles, CA	\$5,121	\$1,004	\$60.83	\$1.66	12
Corn	Champaign-Urbana, IL	New Orleans, LA	\$4,000	\$744	\$47.11	\$1.20	15
	Toledo, OH	Raleigh, NC	\$8,130	\$808	\$88.76	\$2.25	14
	Des Moines, IA	Davenport, IA	\$2,505	\$158	\$26.44	\$0.67	6
	Indianapolis, IN	Atlanta, GA	\$6,227	\$607	\$67.87	\$1.72	14
	Indianapolis, IN	Knoxville, TN	\$5,247	\$393	\$56.01	\$1.42	12
	Des Moines, IA	Little Rock, AR	\$4,000	\$463	\$44.32	\$1.13	10
	Des Moines, IA	Los Angeles, CA	\$5,880	\$1,349	\$71.79	\$1.82	16
Soybeans	Minneapolis, MN	New Orleans, LA	\$4,431	\$1,169	\$55.61	\$1.51	44
	Toledo, OH	Huntsville, AL	\$6,714	\$576	\$72.40	\$1.97	11
	Indianapolis, IN	Raleigh, NC	\$7,422	\$820	\$81.84	\$2.23	16
	Indianapolis, IN	Huntsville, AL	\$5,367	\$389	\$57.16	\$1.56	10
	Champaign-Urbana, IL	New Orleans, LA	\$4,665	\$744	\$53.72	\$1.46	11
Shuttle train							
Wheat	Great Falls, MT	Portland, OR	\$4,393	\$0	\$43.62	\$1.19	5
	Wichita, KS	Galveston-Houston, TX	\$4,611	\$0	\$45.79	\$1.25	9
	Chicago, IL	Albany, NY	\$6,670	\$763	\$73.82	\$2.01	17
	Grand Forks, ND	Portland, OR	\$6,051	\$0	\$60.09	\$1.64	3
	Grand Forks, ND	Galveston-Houston, TX	\$5,399	\$0	\$53.61	\$1.46	-6
	Colby, KS	Portland, OR	\$5,923	\$1,183	\$70.57	\$1.92	11
Corn	Minneapolis, MN	Portland, OR	\$5,380	\$0	\$53.43	\$1.36	4
	Sioux Falls, SD	Tacoma, WA	\$5,340	\$0	\$53.03	\$1.35	4
	Champaign-Urbana, IL	New Orleans, LA	\$3,920	\$744	\$46.32	\$1.18	15
	Lincoln, NE	Galveston-Houston, TX	\$4,080	\$0	\$40.52	\$1.03	5
	Des Moines, IA	Amarillo, TX	\$4,420	\$582	\$49.68	\$1.26	11
	Minneapolis, MN	Tacoma, WA	\$5,380	\$0	\$53.43	\$1.36	4
	Council Bluffs, IA	Stockton, CA	\$5,300	\$0	\$52.63	\$1.34	4
Soybeans	Sioux Falls, SD	Tacoma, WA	\$6,050	\$0	\$60.08	\$1.64	3
-	Minneapolis, MN	Portland, OR	\$6,100	\$0	\$60.58	\$1.65	3
	Fargo, ND	Tacoma, WA	\$5,950	\$0	\$59.09	\$1.61	3
	Council Bluffs, IA	New Orleans, LA	\$4,895	\$858	\$57.13	\$1.55	12
	Toledo, OH	Huntsville, AL	\$4,954	\$576	\$54.92	\$1.49	12
	Grand Island, NE	Portland, OR	\$5,280	\$1,211	\$64.46	\$1.75	15

<sup>&</sup>lt;sup>1</sup>A unit train refers to shipments of at least 25 cars. Shuttle train rates are generally available for qualified shipments of

Source: BNSF Railway, Canadian National Railway, CSX Transportation, and Union Pacific Railroad.

<sup>75-120</sup> cars that meet railroad efficiency requirements.

<sup>&</sup>lt;sup>2</sup>Approximate load per car = 111 short tons (100.7 metric tons): corn 56 pounds per bushel (lbs/bu), wheat and soybeans 60 lbs/bu.

<sup>&</sup>lt;sup>3</sup>Regional economic areas are defined by the Bureau of Economic Analysis (BEA).

<sup>&</sup>lt;sup>4</sup>Percentage change year over year (Y/Y) calculated using tariff rate plus fuel surcharge.

Table 8

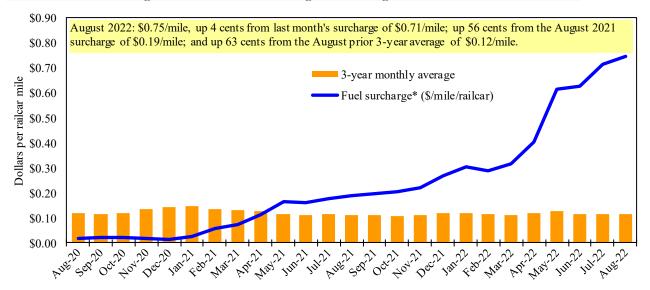
Tariff rail rates for U.S. bulk grain shipments to Mexico

Date	: December	: 2021		Fuel	Tarif	f rate plus	Percent
	Origin		Tariff rate	surcharge	fuel surc	harge per:	change <sup>4</sup>
Commodity	state	Destination region	per car <sup>1</sup>	per car <sup>2</sup>	metric ton <sup>3</sup>	bushel <sup>3</sup>	Y/Y
Wheat	MT	Chihuahua, CI	\$7,699	\$0	\$78.67	\$2.14	4
	OK	Cuautitlan, EM	\$6,900	\$230	\$72.85	\$1.98	6
	KS	Guadalajara, JA	\$7,619	\$719	\$85.19	\$2.32	7
	TX	Salinas Victoria, NL	\$4,420	\$138	\$46.57	\$1.27	4
Corn	IA	Guadalajara, JA	\$9,102	\$663	\$99.77	\$2.53	6
	SD	Celaya, GJ	\$8,300	\$0	\$84.81	\$2.15	2
	NE	Queretaro, QA	\$8,322	\$462	\$89.75	\$2.28	5
	SD	Salinas Victoria, NL	\$6,905	\$0	\$70.55	\$1.79	0
	MO	Tlalnepantla, EM	\$7,687	\$450	\$83.14	\$2.11	5
	SD	Torreon, CU	\$7,825	\$0	\$79.95	\$2.03	2
Soybeans	МО	Bojay (Tula), HG	\$8,647	\$614	\$94.63	\$2.57	5
	NE	Guadalajara, JA	\$9,207	\$646	\$100.67	\$2.74	5
	IA	El Castillo, JA	\$9,510	\$0	\$97.17	\$2.64	1
	KS	Torreon, CU	\$8,109	\$466	\$87.61	\$2.38	5
Sorghum	NE	Celaya, GJ	\$7,932	\$597	\$87.15	\$2.21	6
	KS	Queretaro, QA	\$8,108	\$287	\$85.77	\$2.18	3
	NE	Salinas Victoria, NL	\$6,713	\$231	\$70.94	\$1.80	3
	NE	Torreon, CU	\$7,225	\$438	\$78.29	\$1.99	6

<sup>&</sup>lt;sup>1</sup>Rates are based upon published tariff rates for high-capacity shuttle trains. Shuttle trains are available for qualified shipments of 75-110 cars that meet railroad efficiency requirements.

Sources: BNSF Railway, Union Pacific Railroad, Kansas City Southern.

Figure 7
Railroad fuel surcharges, North American weighted average 1



 $<sup>^{\</sup>rm 1}$  Weighted by each Class I railroad's proportion of grain traffic for the prior year.

Sources: BNSF Railway, Canadian National Railway, CSX Transportation, Canadian Pacific Railway, Union Pacific Railroad, Kansas City Southern Railway, Norfolk Southern Corporation.

<sup>&</sup>lt;sup>2</sup>Fuel surcharge adjusted to reflect the change in Ferrocarril Mexicano, S.A. de C.V railroad fuel surcharge policy as of 10/01/2009.

<sup>&</sup>lt;sup>3</sup>Approximate load per car = 97.87 metric tons: Corn & Sorghum 56 lbs/bu, Wheat & Soybeans 60 lbs/bu.

<sup>&</sup>lt;sup>4</sup>Percentage change calculated using tariff rate plus fuel surchage; Y/Y = year over year.

<sup>&</sup>lt;sup>5</sup> As of January 1, both BNSF and Union Pacific changed their billing and reporting of rates to Mexico. As we incorporate the change, Table 8 updates will be delayed.

<sup>\*</sup> Beginning January 2009, the Canadian Pacific fuel surcharge is computed by a monthly average of the bi-weekly fuel surcharge.

<sup>\*\*</sup>CSX strike price changed from \$2.00/gal. to \$3.75/gal. starting January 1,2015.

## **Barge Transportation**

Figure 8

Illinois River barge freight rate 1,2



<sup>&</sup>lt;sup>1</sup>Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); <sup>2</sup>4-week moving average of the 3-year average.

Table 9
Weekly barge freight rates: Southbound only

· · · · · · · · · · · · · · · · · · ·	ly sarge neigh		outhoound on					
		Twin Cities	Mid- Mississippi	Lower Illinois River	St. Louis	Cincinnati	Lower Ohio	Cairo- Memphis
Rate <sup>1</sup>	8/23/2022	556	490	464	388	450	450	378
	8/16/2022	568	492	448	390	443	443	378
\$/ton	8/23/2022	34.42	26.07	21.53	15.48	21.11	18.18	11.87
	8/16/2022	35.16	26.17	20.79	15.56	20.78	17.90	11.87
Curren	t week % change	e from the sa	me week:					
	Last year	25	27	23	27	32	32	14
	3-year avg. <sup>2</sup>	21	16	-	26	44	44	27
Rate <sup>1</sup>	September	757	709	694	639	671	671	593
	November	764	716	701	580	663	663	560

<sup>&</sup>lt;sup>1</sup>Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); <sup>2</sup>4-week moving average; ton = 2,000 pounds; "-" data not available. Source: USDA, Agricultural Marketing Service.

Figure 9 Benchmark tariff rates

#### Calculating barge rate per ton:

(Rate \* 1976 tariff benchmark rate per ton)/100

Select applicable index from market quotes are included in tables on this page. The 1976 benchmark rates per ton are provided in map.

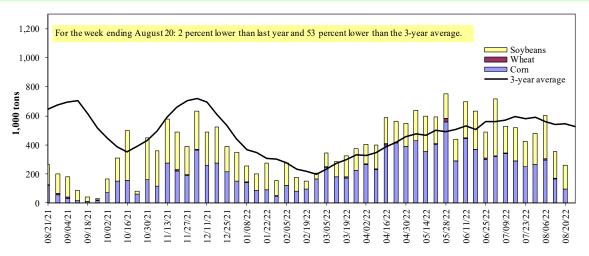




<sup>\*</sup>Source: USDA, Agricultural Marketing Service.

Figure 10

Barge movements on the Mississippi River¹ (Locks 27 - Granite City, IL)



<sup>&</sup>lt;sup>1</sup> The 3-year average is a 4-week moving average.

Note: The U.S. Army Corps of Engineers has recently migrated its lock and vessel database and has noted the latest data may be revised in coming weeks. Source: U.S. Army Corps of Engineers.

Table 10 **Barge grain movements (1,000 tons)** 

For the week ending 08/20/2022	Corn	Wheat	Soybeans	Other	Total
Mississippi River		.,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Rock Island, IL (L15)	14	0	147	0	161
Winfield, MO (L25)	73	0	165	0	238
Alton, IL (L26)	100	0	198	0	298
Granite City, IL (L27)	97	0	162	2	261
Illinois River (La Grange)	34	2	42	0	78
Ohio River (Olmsted)	23	18	29	0	69
Arkansas River (L1)	0	29	2	0	30
Weekly total - 2022	120	47	192	2	361
Weekly total - 2021	129	78	180	14	401
2022 YTD <sup>1</sup>	12,904	1,329	8,157	182	22,573
2021 YTD <sup>1</sup>	18,656	1,148	5,541	217	25,563
2022 as % of 2021 YTD	69	116	147	84	88
Last 4 weeks as % of 2021 <sup>2</sup>	88	106	163	54	112
Total 2021	23,516	1,634	11,325	297	36,772

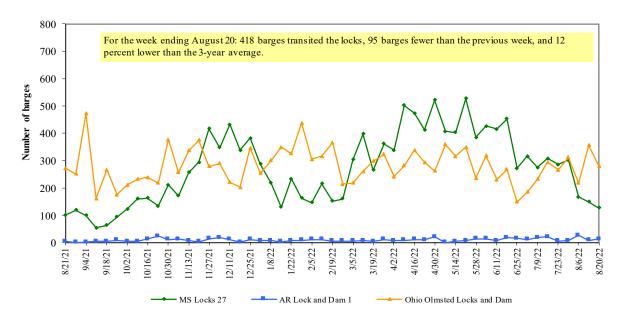
<sup>&</sup>lt;sup>1</sup> Weekly total, YTD (year-to-date), and calendar year total include MI/27, OH/Olmsted, and AR/1; Other refers to oats, barley, sorghum, and rye. Total may not add exactly due to rounding.

Note: L (as in "L15") refers to a lock, locks, or locks and dam facility. The U.S. Army Corps of Engineers has recently migrated its database and has noted the latest data may be revised in coming weeks.

Source: U.S. Army Corps of Engineers.

<sup>&</sup>lt;sup>2</sup> As a percent of same period in 2021.

Figure 11
Upbound empty barges transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam

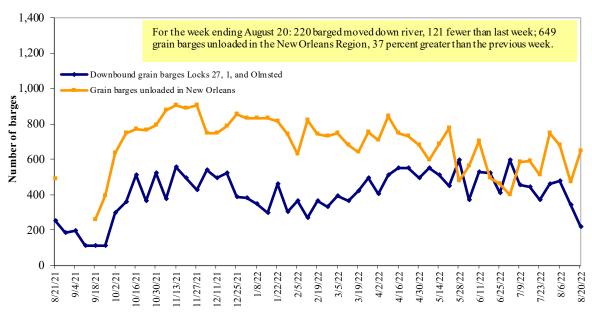


Note: The U.S. Army Corps of Engineers has recently migrated its lock and vessel database and has noted the latest data may be revised in coming weeks.

Source: U.S. Army Corps of Engineers.

Figure 12

Grain barges for export in New Orleans region



Note: Olmsted = Olmsted Locks and Dam. The U.S. Army Corps of Engineers has recently migrated its lock and vessel database and has noted the latest data may be revised in coming weeks.

Source: U.S. Army Corps of Engineers and USDA, Agricultural Marketing Service.

### **Truck Transportation**

The **weekly diesel price** provides a proxy for trends in U.S. truck rates as diesel fuel is a significant expense for truck grain movements.

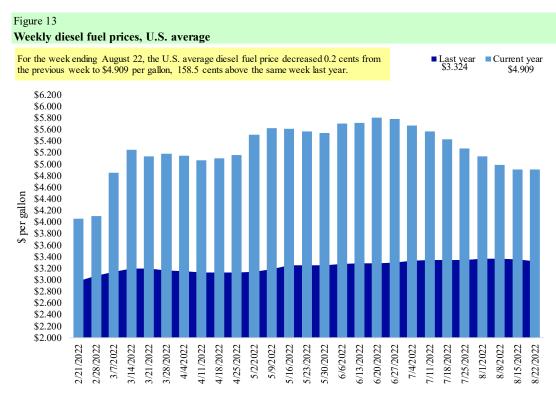
Table 11 Retail on-highway diesel prices, week ending 8/22/2022 (U.S. \$/gallon)

	·		Chang	e from
Region	Location	Price	Week ago	Year ago
I	East Coast	4.922	-0.028	1.625
	New England	5.122	-0.053	1.862
	Central Atlantic	5.209	-0.082	1.736
	Lower Atlantic	4.795	-0.007	1.609
II	Midwest	4.890	0.018	1.674
III	Gulf Coast	4.619	0.005	1.581
IV	Rocky Mountain	4.885	-0.078	1.246
V	West Coast	5.548	0.007	1.556
	West Coast less California	5.130	0.006	1.487
	California	6.029	0.010	1.745
Total	United States	4.909	-0.002	1.585

<sup>&</sup>lt;sup>1</sup>Diesel fuel prices include all taxes. Prices represent an average of all types of diesel fuel.

Note: On June 13, the Energy Information Administration implemented a new methodology to estimate weekly on-highway diesel fuel prices.

Source: U.S. Department of Energy, Energy Information Administration.



Note: On June 13, the Energy Information Administration implemented a new methodology to estimate weekly on-highway diesel fuel prices. Source: U.S. Department of Energy, Energy Information Administration, Retail On-Highway Diesel Prices.

## **Grain Exports**

Table 12
U.S. export balances and cumulative exports (1,000 metric tons)

		, ,	Who	eat			Corn	Soybeans	Total
For the week ending	HRW	SRW	HRS	SWW	DUR	All wheat			
Export balances <sup>1</sup>									
8/11/2022	1,471	866	1,489	1,420	109	5,355	3,209	4,076	12,640
This week year ago	1,631	889	1,271	877	8	4,677	4,906	2,381	11,964
Cumulative exports-marketing year <sup>2</sup>									
2021/22 YTD	1,163	745	1,011	521	18	3,458	57,741	55,482	116,681
2020/21 YTD	1,531	706	1,291	766	42	4,336	65,412	59,703	129,451
YTD 2021/22 as % of 2020/21	76	0	78	68	0	80	88	93	90
Last 4 wks. as % of same period 2020/21	95	112	119	162	1,347	120	84	216	124
Total 2020/21	8,331	1,744	7,337	6,281	654	24,347	66,702	60,287	151,336
Total 2019/20	9,526	2,318	6,960	4,751	922	24,477	42,622	43,994	111,094

<sup>&</sup>lt;sup>1</sup> Current uns hipped (outstanding) export sales to date.

Note: marketing year: wheat = 6/01-5/31, corn and so ybeans = 9/01-8/31. YTD = year-to-date; wks. = weeks; HRW= hard red winter; SRW = so fit red winter;

HRS=hard red spring; SWW=soft white wheat; DUR=durum.

Source: USDA, Foreign Agricultural Service.

Table 13 **Top 5 importers**<sup>1</sup> **of U.S. corn** 

For the week ending 08/11/2022	Total con	mmitments <sup>2</sup>		% change	Exports <sup>3</sup>	
	2022/23	2021/22	2020/21	current MY	3-yr. avg.	
	next MY	current MY	last MY	from last MY	2019-21	
		1,000 mt -				
Mexico	2783.3	16,879	15,620	8	14,817	
Japan	849.5	10,118	11,049	(8)	11,082	
China	3097.5	14,796	22,883	(35)	7,920	
Columbia	174	4,403	3,949	12	4,491	
Korea	0	1,476	3,527	0	3,302	
Top 5 importers	6,904	47,672	57,027	(16)	41,613	
Total U.S. corn export sales	8,798	60,950	70,318	(13)	53,145	
% of projected exports	15%	98%	101%			
Change from prior week <sup>2</sup>	750	99	216			
Top 5 importers' share of U.S. corn						
export sales	78%	78%	81%		78%	
USDA forecast August 2022	60,433	62,341	69,898	(11)		
Corn use for ethanol USDA forecast,						
August 2022	136,525	135,890	127,838	6		

 $<sup>^1</sup>Based on USDA, Foreign Agricultural Service (FAS) \ marketing \ year \ ranking \ reports \ for \ 2020/2 \ l; \ marketing \ year \ (MY) = Sep \ 1-Aug \ 31.$ 

Note: A red number in parentheses indicates a negative number; mt = metric ton.

 $Source: USDA, Foreign\ Agricultural\ Service.$ 

<sup>&</sup>lt;sup>2</sup> Shipped export sales to date.

<sup>&</sup>lt;sup>2</sup>Cumulative exports (shipped) + outstanding sales (unshipped), FAS weekly export sales report, or export sales query. Total commitments change (net sales) from prior week could include revisions from previous week's outstanding sales or accumulated sales.

<sup>&</sup>lt;sup>3</sup>FAS marketing year ranking reports (carryover plus accumulated export); yr. = year; avg. = average.

Table 14 **Top 5 importers** of U.S. soybeans

For the week ending 08/11/2022	Total commitr	nents <sup>2</sup>		% change	Exports <sup>3</sup>
	2022/23	2021/22	2020/21	current MY	3-yr. avg.
	next MY	current MY	last MY	from last MY	2018-20
					- 1,000 mt -
China	9,647	30,615	35,962	(15)	21,666
Mexico	1,082	5,465	4,805	14	4,754
Egypt	340	4,082	2,777	47	3,093
Indonesia	31	1,800	2,364	(24)	2,325
Japan	191	2,576	2,368	9	2,275
Top 5 importers	11,291	44,538	48,276	(8)	34,113
Total U.S. soybean export sales	17,046	59,558	62,085	(4)	50,758
% of projected exports	29%	101%	101%		
change from prior week <sup>2</sup>	1,303	97	68		
Top 5 importers' share of U.S.					
s oybean export sales	66%	75%	78%		67%
USDA forecast, August 2022	58,719	58,856	61,744	(5)	

Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2020/21; marketing year (MY) = Sep 1- Aug 31.

Note: A red number in parentheses indicates a negative number; mt = metric ton.

Source: USDA, Foreign Agricultural Service.

Table 15 **Top 10 importers** of all U.S. wheat

For the week ending 8/11/2022	Total Commi	tments <sup>2</sup>	% change	Exports <sup>3</sup>
	2022/23 current MY	2021/22 last MY	current MY from last MY	3-yr. avg. 2018-20
		1,000 mt -		- 1,000 mt -
Mexico	1,571	1,473	7	3,388
Philippines	1,236	1,325	(7)	3,121
Japan	810	889	(9)	2,567
Korea	605	580	4	1,501
Nigeria	408	687	(41)	1,490
China	273	809	(66)	1,268
Taiwan	269	343	(22)	1,187
Indonesia	81	0	40400	1,131
Thailand	182	177	3	768
Italy	122	72	69	681
Top 10 importers	5,557	6,355	(13)	17,102
Total U.S. wheat export sales	8,813	9,012	(2)	24,617
% of projected exports	39%	41%		
change from prior week <sup>2</sup>	207	307		
Top 10 importers' share of U.S.				
wheat export sales	63%	71%		69%
USDA forecast, August 2022	22,480	21,798	3	

Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2020/21; Marketing year (MY) = Jun 1-May 31.

Note: A red number in parentheses indicates a negative number.

 $Source: USDA, Foreign\ Agricultural\ Service.$ 

<sup>&</sup>lt;sup>2</sup>Cumulative exports (shipped) + outstanding sales (unshipped), FAS weekly export sales report, or export sales query. The total commitments change (net sales) from prior week could include revisions from previous week's outstanding sales and/or accumulated sales.

<sup>&</sup>lt;sup>3</sup>FAS marketing year ranking reports (carryover plus accumulated export); yr. = year; avg. = average.

<sup>&</sup>lt;sup>2</sup>Cumulative exports (shipped) + outstanding sales (unshipped), FAS weekly export sales report, or export sales query. The total commitments change (net sales) from prior week could include revisions from the previous week's outstanding and/or accumulated sales.

 $<sup>^3</sup>$  FAS marketing year final reports (carryo ver plus accumulated export); yr. = year; avg. = average.

Table 16

Grain inspections for export by U.S. port region (1.000 metric tons)

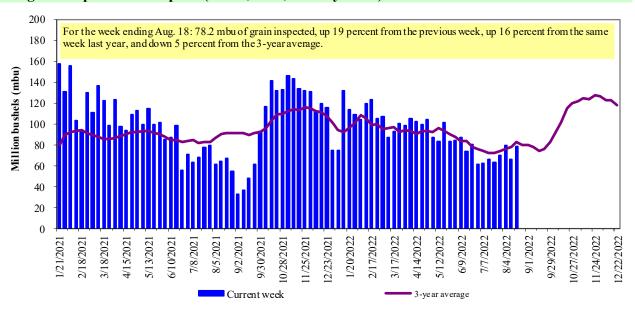
	For the week ending	Previous Current week				2022 YTD as	Last 4-we	eks as % of:	
Port regions	08/18/22	week*	as % of previous	2022 YTD*	2021 YTD*	% of 2021 YTD	Last year	Prior 3-yr. avg.	2021 total*
Pacific Northwest									
Wheat	420	170	247	5,929	10,174	58	67	71	13,243
Corn	64	0	n/a	8,686	12,322	70	110	80	13,420
Soybeans	144	215	67	4,925	3,758	131	n/a	100	14,540
Total	628	385	163	19,539	26,254	74	100	79	41,203
Mississippi Gulf									
Wheat	123	107	114	2,897	2,215	131	90	129	3,202
Corn	515	346	149	24,514	30,364	81	65	79	38,498
Soybeans	457	455	101	14,771	11,276	131	371	109	27,159
Total	1,095	908	121	42,183	43,855	96	115	96	68,858
Texas Gulf									
Wheat	32	46	71	2,062	2,594	80	110	78	3,888
Corn	31	28	110	522	378	138	105	93	627
Soybeans	0	0	n/a	2	656	0	n/a	0	1,611
Total	63	74	86	2,586	3,628	71	109	77	6,126
Interior									
Wheat	44	63	70	1,865	1,958	95	95	117	2,973
Corn	111	155	71	5,798	6,235	93	76	78	10,157
Soybeans	115	134	86	4,447	3,812	117	184	105	6,525
Total	270	352	77	12,109	12,005	101	103	93	19,656
Great Lakes									
Wheat	0	23	0	167	284	59	113	55	536
Corn	0	0	n/a	125	55	226	0	0	145
Soybeans	0	0	n/a	239	67	357	0	0	592
Total	0	23	0	531	407	131	71	21	1,273
Atlantic									
Wheat	6	1	n/a	119	92	129	786	676	128
Corn	7	0	n/a	217	34	644	73	219	85
Soybeans	7	6	117	1,566	1,077	145	208	44	2,184
Total	20	7	278	1,902	1,202	158	230	132	2,397
U.S. total from ports*									
Wheat	626	410	152	13,039	17,318	75	81	88	23,969
Com	727	530	137	39,861	49,388	81	71	79	62,932
Soybeans	723	809	89	25,950	20,645	126	357	102	52,612
Total	2,076	1,749	119	78,851	87,351	90	109	89	139,512

<sup>\*</sup>Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

Source: USDA, Federal Grain Inspection Service; YTD= year-to-date; n/a = not applicable or no change.

The United States exports approximately one-quarter of the grain it produces. On average, this includes nearly 45 percent of U.S.-grown wheat, 50 percent of U.S.-grown soybeans, and 20 percent of the U.S.-grown corn. Approximately 55 percent of the U.S. export grain shipments departed through the U.S. Gulf region in 2019.

Figure 14
U.S. grain inspected for export (wheat, corn, and soybeans)

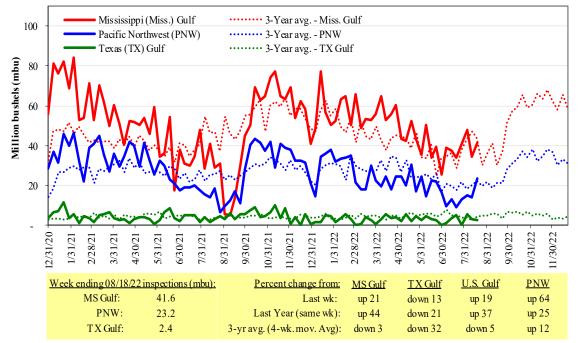


Note: 3-year average consists of 4-week running average.

Source: USDA, Federal Grain Inspection Service.

Figure 15

U.S. Grain inspections: U.S. Gulf and PNW<sup>1</sup> (wheat, corn, and soybeans)



Source: USDA, Federal Grain Inspection Service.

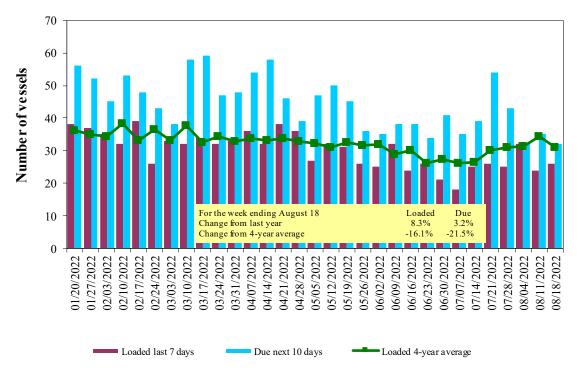
### **Ocean Transportation**

Table 17
Weekly port region grain ocean vessel activity (number of vessels)

				Pacific
		Gulf		Northwest
		Loaded	Due next	
Date	In port	7-days	10-days	In port
8/18/2022	21	26	32	13
8/11/2022	24	24	35	9
2021 range	(1057)	(548)	(1569)	(427)
2021 average	34	32	49	15

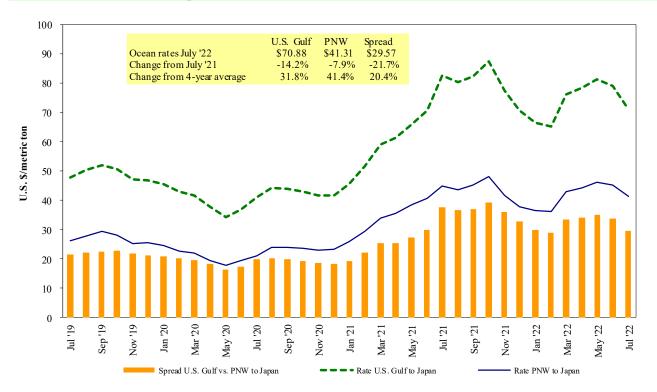
Source: USDA, Agricultural Marketing Service.

Figure 16
U.S. Gulf<sup>1</sup> vessel loading activity



<sup>1</sup>U.S. Gulf includes Mississippi, Texas, and East Gulf Source: USDA, Agricultural Marketing Service.

Figure 17 **Grain vessel rates, U.S. to Japan** 



Note: PNW = Pacific Northwest. Source: O'Neil Commodity Consulting.

Table 18

Ocean freight rates for selected shipments, week ending 08/20/2022

Export	Import	Grain	Loading	Volume loads	Freight rate
region	region	types	date	(metric tons)	(US \$/metric ton)
U.S. Gulf	Japan	Heavy grain	Jul 20/30, 2022	50,000	81.50
U.S. Gulf	Japan	Heavy grain	Jun 1/10, 2022	50,000	89.65
U.S. Gulf	Japan	Heavy grain	May 1/20, 2022	50,000	78.90
U.S. Gulf	S. China	Corn	Aug 1/10, 2022	68,000	71.00
U.S. Gulf	Djibouti	Wheat	Jun 5/15, 2022	37,150	190.81*
U.S. Gulf	Honduras	Soybean Meal	Feb 18/28, 2022	7,820	57.15*
U.S. Gulf	S. Korea	Heavy grain	Jun 1/Jul, 2022	55,000	82.75
U.S. Gulf	Sudan	Sorghum	Mar 1/10, 2022	35,790	149.97*
U.S. Gulf	Sudan	Sorghum	Feb 1/10, 2022	35,780	77.60*
PNW	Yemen	Wheat	Jul 10/20, 2022	27,000	169.50*
Brazil	N. China	Heavy grain	Mar 18/27, 2022	64,000	56.85
Argentina	Taiwan	Corn	May 1/Jun, 2022	65,000	85.00

\*50 percent of food aid from the United States is required to be shipped on U.S.-flag vessels.

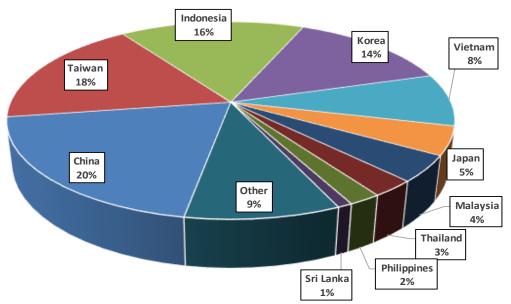
Note: Rates shown are per metric ton (2,204.62 lbs. = 1 metric ton), free on board (F.O.B), except where otherwise indicated; op = option.

Source: Maritime Research, Inc.

In 2020, containers were used to transport 10 percent of total U.S. waterborne grain exports. Approximately 66 percent of U.S. waterborne grain exports in 2020 went to Asia, of which 14 percent were moved in containers. Approximately 95 percent of U.S. waterborne containerized grain exports were destined for Asia.

Figure 18

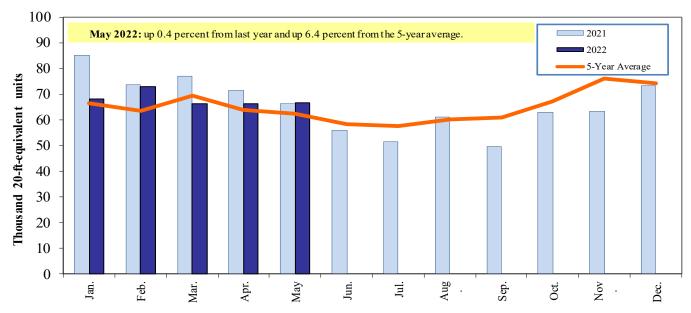
Top 10 destination markets for U.S. containerized grain exports, Jan-May 2022



Note: The following Harmonized Tariff Codes are used to calculate containerized grains movements: '1001', '100190', '1002', '100200', '1003', '100300', '1004', '100400', '1005', '100590', '1007', '100700', '110100', '1102', '110220', '110290', '1201', '120100', '120190', '120810', '230210',

Source: USDA, Agricultural Marketing Service, Transportation Services Division analysis of PIERS data.

Figure 19
Monthly shipments of U.S. containerized grain exports



Note: The following Harmonized Tariff Codes are used to calculate containerized grains movements: '1001', '100190', '1002', '100200', '10030', '100300', '10040', '100400', '1005', '100590', '10070', '100700', '110100', '11020', '110220', '110290', '1201', '120100', '120190', '120190', '120810', '230310', '230330', '2304', and '230990'.

Source: USDA, Agricultural Marketing Service, Transportation Services Division analysis of PIERS data.

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