United States Department of Agriculture

Grain Transportation Report

A weekly publication of the Agricultural Marketing Service
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Contact Us

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Contents

The next release is March 24, 2022

WEEKLY HIGHLIGHTS

Ocean Freight Rates Reach Highest Level Since Last November

Ocean freight rates for shipping bulk grains have risen for 5 consecutive weeks. As of March 10, 2022, the rate for shipping a metric ton (mt) of grain from the U.S. Gulf to Japan was $79.00—12 percent more than the beginning of the year, 37 percent more than the same period last year, and 70 percent above the 4-year average. The rate from the Pacific Northwest to Japan was $44.25 per mt—14 percent more than the beginning of the year, 36 percent more than the same period last year, and 72 percent above the 4-year average. At $29.50 per mt, the U.S-to-Europe rate was up 12 percent from the beginning of the year, up 39 percent from the same period last year, and up 75 percent from the 4-year average. According to the March 10 issue of the *Transportation and Export Report* by O'Neil Commodity Consulting, the rate hike is driven by rising crude oil prices caused by the war in Ukraine, affecting trade throughout the Black Sea region. According to Energy Information Administration's *Short-Term Energy Outlook*, Brent crude oil spot prices averaged $97 per barrel (b) in February—an $11/b increase from January—and are expected to average $117/b in March.

Downbound Barged Grain Spot Freight Rates Rise Sharply

Over the past 2 weeks, because of Russia's invasion of Ukraine, ocean vessel traffic (including for agricultural and energy commodities) has been largely halted through the Black Sea. Although U.S. barged grain volumes have not yet significantly risen (***GTR* table 10**), there may be signs global consumers are turning to U.S. grain (and other products) to substitute for imports from the Black Sea region that have become inaccessible. U.S. barge freight rates have skyrocketed as both immediate (spot) demand and April freight demand have surged. Likewise, an already limited supply of empty barges has grown even tighter. Also, sharply rising fuel prices will likely pressure barge operators to transfer some costs to customers by raising rates. Over the past 3 weeks, the spot rate for St. Louis rose from 470 percent of the benchmark tariff ($18.8 per ton) to 871 percent ($34.75 per ton)—220 percent higher than last year and 204 percent higher than 3-year average. Similarly, the Upper Ohio River freight rate jumped from 505 percent of the benchmark tariff ($23.6 per ton) to 1,060 percent ($49.7 per ton)—262 percent higher than last year and 225 percent higher than 3-year average (***GTR* table 9**).

Missouri and Minnesota DOTs Request Input on State Freight Plans

The Minnesota Department of Transportation (DOT) seeks public input about its District 6 freight plan by March 21. Comments can be submitted here. Input will help finalize the District 6 Freight Plan's recommended strategies to improve, long term, the movement of goods in southeast Minnesota. In a similar vein, the Missouri DOT is soliciting public comments to help finalize its draft 2022 Missouri State Freight and Rail Plan, through March 31. Missouri's Rail Plan was last updated in 2012, and its State Freight Plan was last updated in 2017. The 2022 plan combines both to improve the State's access to Federal funds and to become eligible for discretionary grants. The plan's information and guidance for investment decisions will improve all modes of freight movement in the State.

Snapshots by Sector

Export Sales

For the week ending March 3, **unshipped balances** of wheat, corn, and soybeans for marketing year 2021/22 totaled 37.5 million metric tons (mmt), down 16 percent from the same time last year, and up 5 percent from the previous week. Net **corn export sales** were 2.144 mmt, significantly up from the previous week. Net **soybean export sales** were 2.204 mmt, significantly up from the previous week. Net weekly **wheat export sales** were 0.307 mmt, up 2 percent from the previous week.

Rail

U.S. Class I railroads originated 24,880 **grain carloads** during the week ending March 5. This was a 12-percent increase from the previous week, 6 percent fewer than last year, and 10 percent more than the 3-year average.

Average March shuttle **secondary railcar** bids/offers (per car) were $1,450 above tariff for the week ending March 10. This was $896 more than last week and $1,122 more than this week last year. There were no non-shuttle bids/offers this week.

Barge

For the week ending March 12, **barged grain movements** totaled 567,522 tons. This was 11 percent less than the previous week and 30 percent less than the same period last year.

For the week ending March 12, 366 grain barges **moved down river**—29 fewer barges than the previous week. There were 682 grain barges **unloaded** in the New Orleans Region, 9 percent fewer than last week.

Ocean

For the week ending March 10, 32 **oceangoing grain vessels** were loaded in the Gulf—29 percent fewer than the same period last year. Within the next 10 days (starting March 11), 58 vessels were expected to be loaded—6 percent more than the same period last year.

Fuel

For the week ending March 14, the U.S. average **diesel fuel price** increased 40.1 cents from the previous week to $5.250 per gallon, 205.9 cents above the same week last year.

Preferred citation: U.S. Department of Agriculture, Agricultural Marketing Service. *Grain Transportation Report.* March 17, 2022.
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Feature Article/Calendar

Fourth-Quarter Landed Costs of Soybeans Fell in United States and Brazil

As the world's two leading producers of soybeans, the United States and Brazil compete for the same overseas markets. For both countries, the competitiveness of their soybeans depends on low transportation and landed costs (i.e., transportation costs plus farm values) to China and Europe, which are the key export destinations. This article compares quarterly and yearly changes in the costs of moving soybeans from the United States and Brazil to Shanghai, China (table 1) and to Hamburg, Germany (table 2).

Table 1-Quarterly costs of transporting soybeans from United States and Brazil to Shanghai, China

	2020 4th qtr.	2021 3rd qtr.	2021 4th qtr.	Percent change Yr. to yr.	Percent change Qtr. to qtr.	2020 4th qtr.	2021 3rd qtr.	2021 4th qtr.	Percent change Yr. to yr.	Percent change Qtr. to qtr
	United States (via U.S. Gulf)									
	Minneapolis, MN					Davenport, IA				
	--$/mt--					--$/mt--				
Truck	11.38	13.18	13.50	18.63	2.43	11.38	13.18	13.50	18.63	2.43
Rail[1]	-	-	-	-	-	-	-	-	-	-
Barge	41.35	32.62	35.21	-14.85	7.94	32.31	26.21	33.49	3.65	27.78
Ocean[2]	40.79	80.83	77.72	90.54	-3.85	40.79	80.83	77.72	90.54	-3.85
Total transportation	93.52	126.63	126.43	35.19	-0.16	84.48	120.22	124.71	47.62	3.73
Farm value[3]	364.86	483.79	448.27	22.86	-7.34	377.11	494.82	448.27	18.87	-9.41
Landed cost[4]	458.38	610.42	574.70	25.38	-5.85	461.59	615.04	572.98	24.13	-6.84
Transport % of landed cost	20.40	20.74	22.00	-	-	18.30	19.55	21.77	-	-
	Via PNW									
	Fargo, ND					Sioux Falls, SD				
Truck	11.38	13.18	13.50	18.63	2.43	11.38	13.18	13.50	18.63	2.43
Rail[1]	57.10	57.76	59.09	3.49	2.30	58.09	58.76	60.08	3.43	2.25
Ocean	22.65	43.98	42.01	85.47	-4.48	22.65	43.98	42.01	85.47	-4.48
Total transportation	91.13	114.92	114.60	25.75	-0.28	92.12	115.92	115.59	25.48	-0.28
Farm value	352.13	462.97	440.92	25.22	-4.76	356.29	483.79	447.05	25.47	-7.59
Landed cost	443.26	577.89	555.52	25.33	-3.87	448.41	599.71	562.64	25.47	-6.18
Transport % of landed cost	20.56	19.89	20.63	-	-	20.54	19.33	20.54	-	-
	Brazil									
	North MT[5] - Santos[6]					South GO[5] - Paranagua[6]				
	--$/mt--					--$/mt--				
Truck	54.20	59.59	50.42	-6.97	-15.39	30.89	34.66	29.58	-4.24	-14.66
Ocean[7]	31.67	64.00	62.00	95.77	-3.13	33.42	66.00	64.00	91.50	-3.03
Total transportation	85.87	123.59	112.42	30.92	-9.04	64.31	100.66	93.58	45.51	-7.03
Farm Value[8]	490.89	513.31	457.88	-6.72	-10.80	442.13	495.90	456.20	3.18	-8.01
Landed Cost	576.76	636.90	570.30	-1.12	-10.46	506.44	596.56	549.78	8.56	-7.84
Transport % of landed cost	14.89	19.40	19.71	-	-	12.70	16.87	17.02	-	-

[1]Rail rates include fuel surcharges, but do not include the cost of purchasing empty rail cars in the secondary rail markets, which could exceed the rail tariff rate plus fuel surcharge shown in the table.

[2]Source for the U.S. Ocean freight rates: O'Neil Commodity Consulting.

[3]Source for the U.S farm values: USDA, National Agricultural Statistivs Service.

[4]Landed cost is transportation cost plus farm value.

[5]Producing regions: MT= Mato Grosso, GO = Goiás.

[6]Export ports.

[7]Source for Brazil's ocean freight rates: University of São Paulo, Brazil and USDA, Agricultural Marketing Service.

[8]Source for Brazil's farm values: Companhia Nacional de Abastecimento.

Note: qtr. = quarter; yr. = year; mt = metric ton; "-" 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 third to fourth quarter 2021 (quarter to quarter), total transportation costs declined for exporting U.S. soybeans to China by all routes—except from Davenport, IA, via the U.S. Gulf (table 1). These declines were in response to falling ocean freight rates, which offset increases in truck, barge, and rail rates (public tariff, plus the fuel surcharge). For both U.S. Gulf routes to Europe, soybean transportation costs rose, with rising truck, barge, and ocean freight rates (table 2). Brazil's transportation costs to China and Europe fell in response to lower truck and ocean freight rates.

In the United States, truck rates increased partly because of higher diesel fuel prices during the quarter. Similarly, rail rates increased partly because of higher fuel surcharges. Barge rates increased in response to a high demand for empty barges and logistical challenges in repositioning empty barges upriver from New Orleans (*Grain Transportation Report (GTR)*, January 27, 2022). Fourth-quarter ocean freight rates varied—decreasing from the United States to China and increasing to Europe. These ocean rate differences (according to destination) may have reflected a global trade imbalance, as countries around the globe locked down and reopened their economies at different times, in response to pandemic.

Year-to-year transportation costs. From fourth quarter 2020 to fourth quarter 2021 (year to year), transportation costs increased in the United States and Brazil. In the United States, higher truck, barge, rail, and ocean freight rates pushed up total transportation costs. In Brazil, higher ocean rates pushed up total transportation costs.

Table 2-Quarterly costs of transporting soybeans from United States and Brazil to Hamburg, Germany

	2020 4th qtr.	2021 3rd qtr.	2021 4th qtr.	Percent change Yr. to yr.	Percent change Qtr. to qtr.	2020 4th qtr.	2021 3rd qtr.	2021 4th qtr.	Percent change Yr. to yr.	Percent change Qtr. to qtr.
	United States (via U.S. Gulf)									
	Minneapolis, MN --$/mt--					Davenport, IA --$/mt--				
Truck	11.38	13.18	13.50	18.63	2.43	11.38	13.18	13.50	18.63	2.43
Rail[1]	-	-	-	-	-	-	-	-	-	-
Barge	41.35	32.62	35.21	-14.85	7.94	32.31	26.21	33.49	3.65	27.78
Ocean[2]	19.02	28.21	30.09	58.20	6.66	19.02	28.21	30.09	58.20	6.66
Total transportation	71.75	74.01	78.80	9.83	6.47	62.71	67.60	77.08	22.92	14.02
Farm value[3]	364.86	483.79	448.27	22.86	-7.34	377.11	494.82	448.27	18.87	-9.41
Landed cost[4]	436.61	557.80	527.07	20.72	-5.51	439.82	562.42	525.35	19.45	-6.59
Transport % of landed cost	16.43	13.27	14.95	-	-	14.26	12.02	14.67	-	-
	Brazil									
	North MT[5] - Santos[6] --$/mt--					South GO[5] - Paranagua[6] --$/mt--				
Truck	54.20	59.59	50.42	-6.97	-15.39	30.89	34.66	29.58	-4.24	-14.66
Ocean[7]	25.25	54.00	52.50	107.92	-2.78	25.35	53.00	51.50	103.16	-2.83
Total transportation	79.45	113.59	102.92	29.54	-9.39	56.24	87.66	81.08	44.17	-7.51
Farm value[8]	490.89	513.31	457.88	-6.72	-10.80	442.13	495.90	456.20	3.18	-8.01
Landed cost	570.34	626.90	560.80	-1.67	-10.54	498.37	583.56	537.28	7.81	-7.93
Transport % of landed cost	13.93	18.12	18.35	-	-	11.28	15.02	15.09	-	-

[1]Rail rates include fuel surcharges, but do not include the cost of purchasing empty rail cars in the secondary rail markets, which could exceed the rail tariff rate plus fuel surcharge shown in the table.

[2]Source for the U.S. ocean rates: O'Neil Commodity Consulting.

[3]Source for the U.S. farm values: USDA/National Agrocultural Statistics Service.

[4]Landed cost is total cost plus farm value.

[5]Producing regions: MT= Mato Grosso, GO = Goiás.

[6]Export ports.

[7]Source for Brazil's ocean rates:University of São Paulo, Brazil and USDA/Agricultural Marketing Service.

[8]Source for Brazil's farm values: Companhia Nacional de Abastecimento.

Note: qtr. = quarter; yr. = year; mt = metric ton; "-" 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 landed costs. Quarter to quarter, landed costs decreased in the United States and in Brazil. For most routes from the United States to China, landed costs declined because of both falling transportation costs and falling farm values. However, for the IA-Gulf route, falling farm values (exceeding the rise in transportation costs) resulted in declining landed costs. For both routes from the United States to Europe, landed costs declined because of falling farm values. In Brazil, landed costs decreased because of both falling transportation costs and falling farm values. The share of fourth-quarter U.S. landed costs comprising transportation was 21-22 percent for shipments to China (table 1) and 15 percent for shipments to Europe (table 2). The transportation share of Brazil's total landed costs was 17-20 percent for shipments to China (table 1) and 15-18 percent for shipments to Europe (table 2).

Year-to-year landed costs. Year to year, landed costs rose in the United Sates, but varied in Brazil. For exports out of the United States and South Goiás, Brazil, increased landed costs reflected both higher transportation costs and higher soybean farm values. However, landed costs for shipments out of North Mato Grosso, Brazil, fell because of declining farm values, which exceeded the increases in transportation costs.

U.S. exports to China. According to USDA's Federal Grain Inspection Service, China imported 18.63 million metric tons (mmt) of U.S. soybeans in fourth quarter 2021, versus 1.18 mmt in the previous quarter and 24.18 mmt in fourth quarter 2020. Total U.S. soybean exports are projected at 56.88 mmt in marketing year (MY) 2021/22, down from 61.52 mmt in MY 2020/21, according to USDA's March *World Agricultural Supply and Demand Estimates*. On the other hand, Brazil is projected to export 85.50 mmt in MY 2021/22, up from 81.65 mmt in MY 2020/21. For more on soybean transportation in Brazil, see the quarterly *Brazil Soybean Transportation* report. *surajudeen.olowlayemo@usda.gov*

Grain Transportation Indicators

Table 1

Grain transport cost indicators[1]

	Truck	Rail		Barge	Ocean	
For the week ending		Non-Shuttle	Shuttle		Gulf	Pacific
03/16/22	352	298	272	550	353	314
03/09/22	325	298	246	496	318	278

[1]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)

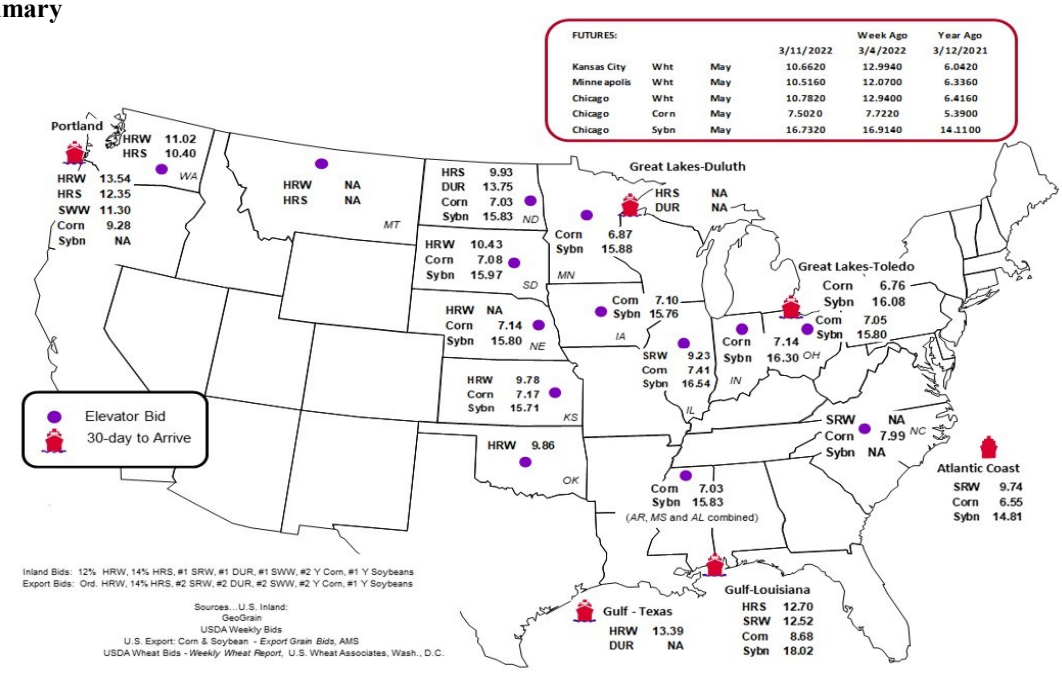
Commodity	Origin–destination	3/11/2022	3/4/2022
Corn	IL–Gulf	-1.27	-1.35
Corn	NE–Gulf	-1.54	-1.49
Soybean	IA–Gulf	-2.26	-2.08
HRW	KS–Gulf	-3.61	-4.28
HRS	ND–Portland	-2.42	-2.56

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)[1]

For the week ending	Mississippi Gulf	Texas Gulf	Pacific Northwest	Atlantic & East Gulf	Total	Week ending	Cross-border Mexico[3]
3/9/2022[p]	2,180	553	6,482	628	9,843	3/5/2022	2,865
3/2/2022[r]	2,098	43	5,092	436	7,669	2/26/2022	2,741
2022 YTD[r]	15,710	10,359	58,901	6,234	91,204	2022 YTD	26,030
2021 YTD[r]	16,968	16,380	61,019	7,077	101,444	2021 YTD	20,406
2022 YTD as % of 2021 YTD	93	63	97	88	90	% change YTD	128
Last 4 weeks as % of 2021[2]	122	49	104	104	99	Last 4wks. % 2021	129
Last 4 weeks as % of 4-year avg.[2]	273	56	110	190	120	Last 4wks. % 4 yr.	136
Total 2021	54,982	69,213	311,407	22,567	458,169	Total 2021	147,859
Total 2020	45,294	64,116	299,882	24,458	433,750	Total 2020	128,714

[1]Data is incomplete as it is voluntarily provided.

[2] Compared with same 4-weeks in 2021 and prior 4-year average.

[3] 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.

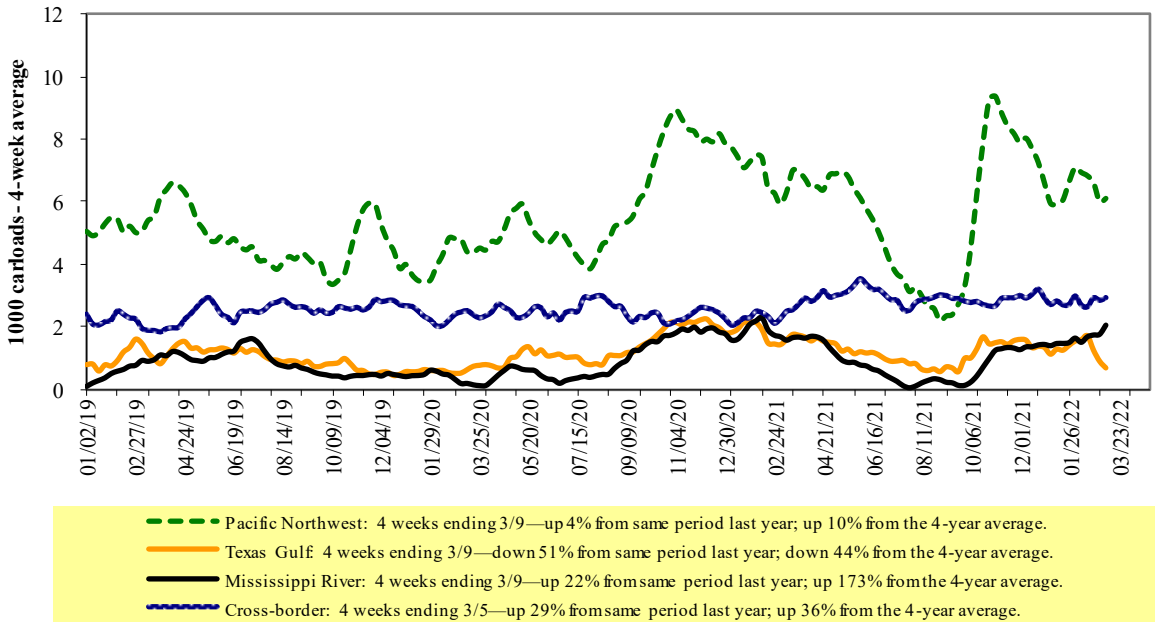
YTD = year-to-date; p = preliminary data; r = revised data; n/a = not available; wks. = weeks; avg. = average.

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.

Table 4

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

For the week ending:	East		West			U.S. total	Canada	
3/5/2022	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	1,929	2,609	12,790	1,175	6,377	24,880	3,864	4,541
This week last year	1,999	2,381	14,775	1,053	6,244	26,452	4,937	5,764
2022 YTD	16,528	20,610	107,227	12,131	57,865	214,361	32,258	33,102
2021 YTD	18,895	24,143	117,749	8,990	57,884	227,661	43,360	43,119
2022 YTD as % of 2021 YTD	87	85	91	135	100	94	74	77
Last 4 weeks as % of 2021*	97	104	101	141	111	105	97	89
Last 4 weeks as % of 3-yr. avg.**	103	102	110	124	127	114	107	101
Total 2021	93,935	120,912	609,890	64,818	318,002	1,207,557	210,315	242,533

*The past 4 weeks of this year as a percent of the same 4 weeks last year.

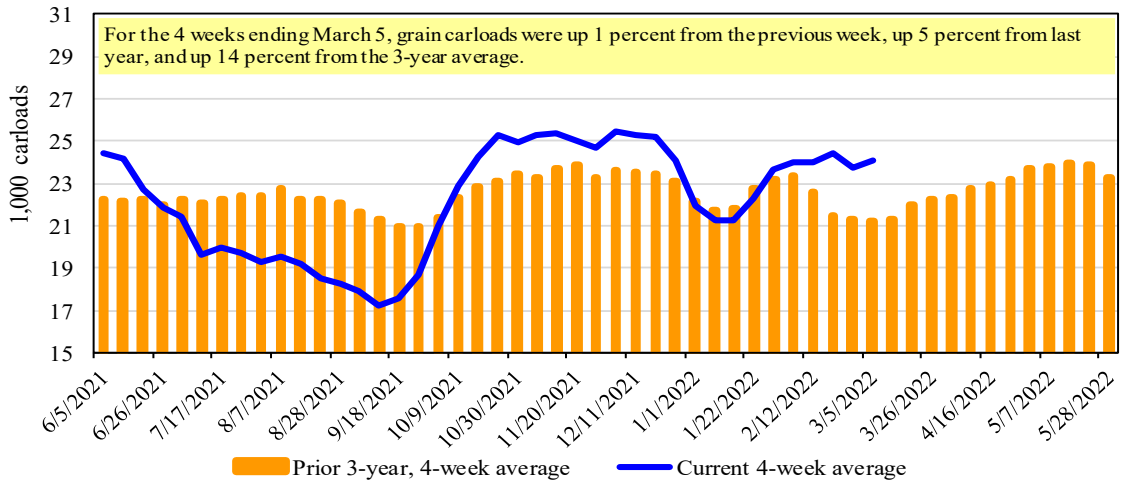
**The past 4 weeks as a percent of the same period from the prior 3-year average. YTD = year-to-date; avg. = average; yr. = year.

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)[2]

For the week ending:		Delivery period							
3/10/2022		Mar-22	Mar-21	Apr-22	Apr-21	May-22	May-21	Jun-22	Jun-21
BNSF[3]	COT grain units	no bids	no bids	0	0	no bids	0	no bids	no bids
	COT grain single-car	no bids	no bids	4	0	0	0	0	0
UP[4]	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

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

[2]Average premium/discount to tariff, last auction. n/a = not available.

[3]BNSF - COT = BNSF Railway Certificate of Transportation; north grain and south grain bids were combined effective the week ending 6/24/06.

[4]UP - GCAS = Union Pacific Railroad Grain Car Allocation System.

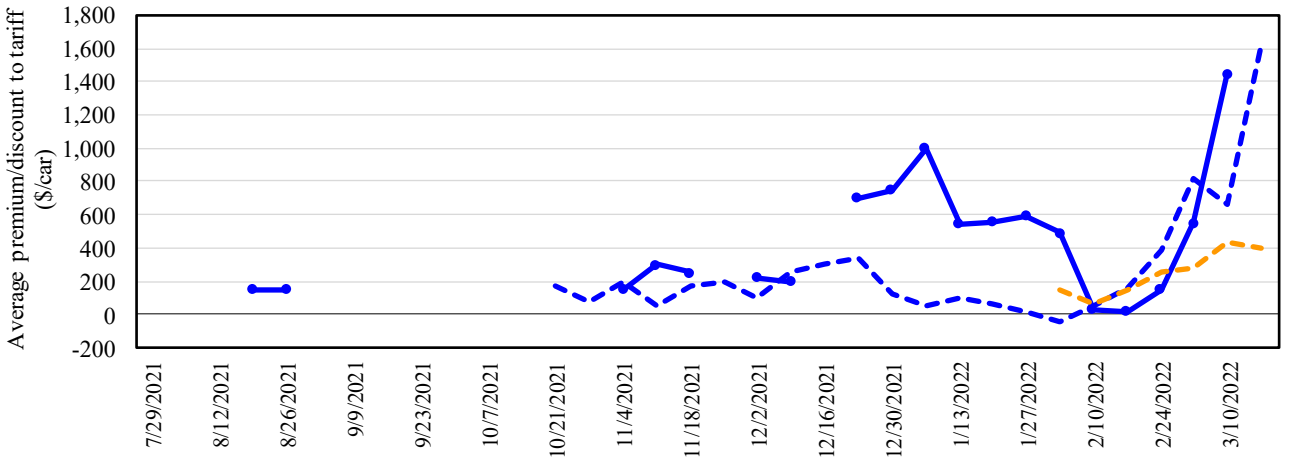
Region 1 includes: AR, IL, LA, MO, NM, OK, TX, WI, and Duluth, MN.

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

Source: USDA, Agricultural Marketing Service.

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 March 2022

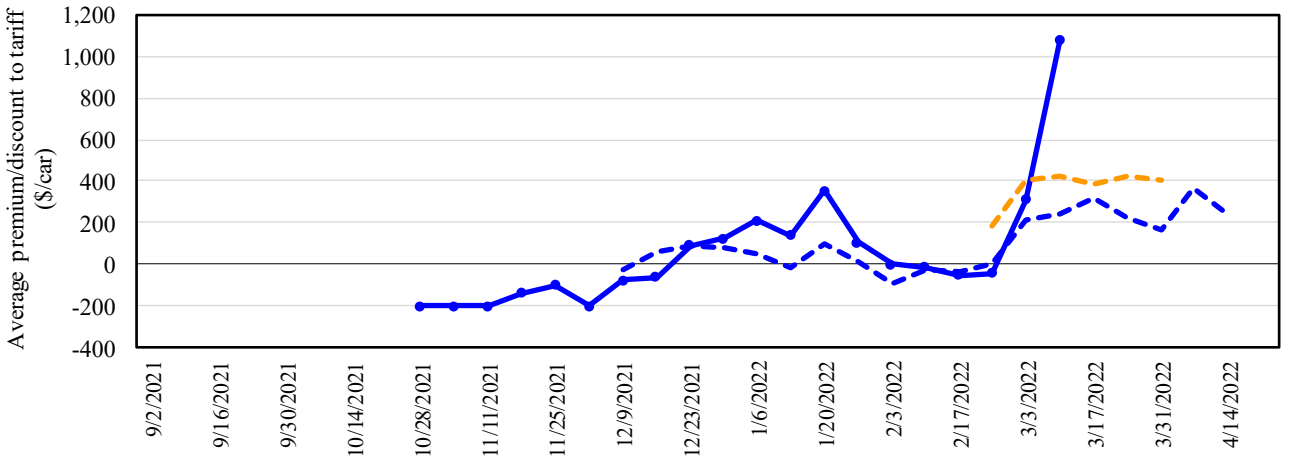


3/10/2022	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$1,450	$1,450

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers rose $896 this week and are at 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.

Figure 5
Secondary market bids/offers for railcars to be delivered in April 2022



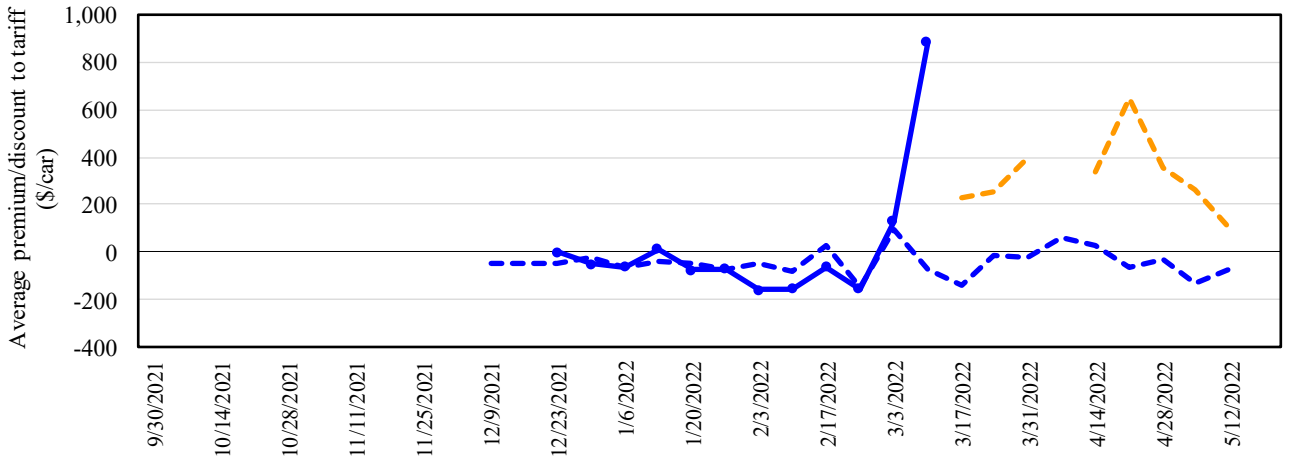
3/10/2022	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$1,350	$800

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers rose $763 this week and are at 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.

Figure 6

Secondary market bids/offers for railcars to be delivered in May 2022



3/10/2022	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$1,267	$500

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers rose $754 this week and are at 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.

Table 6

Weekly secondary railcar market ($/car)[1]

	For the week ending:	Delivery period					
	3/10/2022	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22
Non-shuttle	**BNSF-GF**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**
	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
	UP-Pool	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**
	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
Shuttle	**BNSF-GF**	**1,450**	**1,350**	**1,267**	**575**	**267**	**200**
	Change from last week	917	1,025	1,109	n/a	n/a	275
	Change from same week 2021	1,213	1,406	1,408	775	417	350
	UP-Pool	**1,450**	**800**	**500**	**n/a**	**n/a**	**n/a**
	Change from last week	875	500	400	n/a	n/a	n/a
	Change from same week 2021	1,031	775	613	n/a	n/a	n/a

[1]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]

March 2022	Origin region[3]	Destination region[3]	Tariff rate/car	Fuel surcharge per car	Tariff plus surcharge per: metric ton	Tariff plus surcharge per: bushel[2]	Percent change Y/Y[4]
Unit train							
Wheat	Wichita, KS	St. Louis, MO	$3,695	$167	$38.35	$1.04	3
	Grand Forks, ND	Duluth-Superior, MN	$3,658	$0	$36.33	$0.99	-13
	Wichita, KS	Los Angeles, CA	$7,290	$0	$72.39	$1.97	2
	Wichita, KS	New Orleans, LA	$4,436	$294	$46.97	$1.28	2
	Sioux Falls, SD	Galveston-Houston, TX	$7,026	$0	$69.77	$1.90	3
	Colby, KS	Galveston-Houston, TX	$4,712	$322	$49.99	$1.36	2
	Amarillo, TX	Los Angeles, CA	$5,121	$448	$55.30	$1.51	5
Corn	Champaign-Urbana, IL	New Orleans, LA	$4,000	$332	$43.02	$1.09	8
	Toledo, OH	Raleigh, NC	$8,130	$0	$80.73	$2.05	4
	Des Moines, IA	Davenport, IA	$2,505	$70	$25.57	$0.65	4
	Indianapolis, IN	Atlanta, GA	$6,227	$0	$61.84	$1.57	4
	Indianapolis, IN	Knoxville, TN	$5,247	$0	$52.11	$1.32	4
	Des Moines, IA	Little Rock, AR	$4,000	$207	$41.77	$1.06	6
	Des Moines, IA	Los Angeles, CA	$5,880	$602	$64.37	$1.63	8
Soybeans	Minneapolis, MN	New Orleans, LA	$3,631	$479	$40.82	$1.11	10
	Toledo, OH	Huntsville, AL	$6,714	$0	$66.67	$1.81	2
	Indianapolis, IN	Raleigh, NC	$7,422	$0	$73.70	$2.01	4
	Indianapolis, IN	Huntsville, AL	$5,367	$0	$53.30	$1.45	2
	Champaign-Urbana, IL	New Orleans, LA	$4,665	$332	$49.62	$1.35	5
Shuttle train							
Wheat	Great Falls, MT	Portland, OR	$4,193	$0	$41.64	$1.13	4
	Wichita, KS	Galveston-Houston, TX	$4,411	$0	$43.80	$1.19	4
	Chicago, IL	Albany, NY	$6,670	$0	$66.24	$1.80	5
	Grand Forks, ND	Portland, OR	$5,851	$0	$58.10	$1.58	3
	Grand Forks, ND	Galveston-Houston, TX	$5,199	$0	$51.63	$1.41	-13
	Colby, KS	Portland, OR	$5,923	$528	$64.06	$1.74	4
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	$332	$42.22	$1.07	8
	Lincoln, NE	Galveston-Houston, TX	$4,080	$0	$40.52	$1.03	5
	Des Moines, IA	Amarillo, TX	$4,420	$260	$46.47	$1.18	6
	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	$383	$52.41	$1.43	5
	Toledo, OH	Huntsville, AL	$4,954	$0	$49.20	$1.34	0
	Grand Island, NE	Portland, OR	$5,280	$540	$57.80	$1.57	7

[1]A unit train refers to shipments of at least 25 cars. Shuttle train rates are generally available for qualified shipments of 75-120 cars that meet railroad efficiency requirements.

[2]Approximate load per car = 111 short tons (100.7 metric tons): corn 56 pounds per bushel (lbs/bu), wheat and soybeans 60 lbs/bu.

[3]Regional economic areas are defined by the Bureau of Economic Analysis (BEA).

[4]Percentage change year over year (Y/Y) calculated using tariff rate plus fuel surcharge.

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

Table 8

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

Date: December 2021							
Commodity	Origin state	Destination region	Tariff rate per car[1]	Fuel surcharge per car[2]	Tariff rate plus fuel surcharge per: metric ton[3]	bushel[3]	Percent change[4] 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	MO	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

[1]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.

[2]Fuel surcharge adjusted to reflect the change in Ferrocarril Mexicano, S.A. de C.V railroad fuel surcharge policy as of 10/01/2009.

[3]Approximate load per car = 97.87 metric tons: Corn & Sorghum 56 lbs/bu, Wheat & Soybeans 60 lbs/bu.

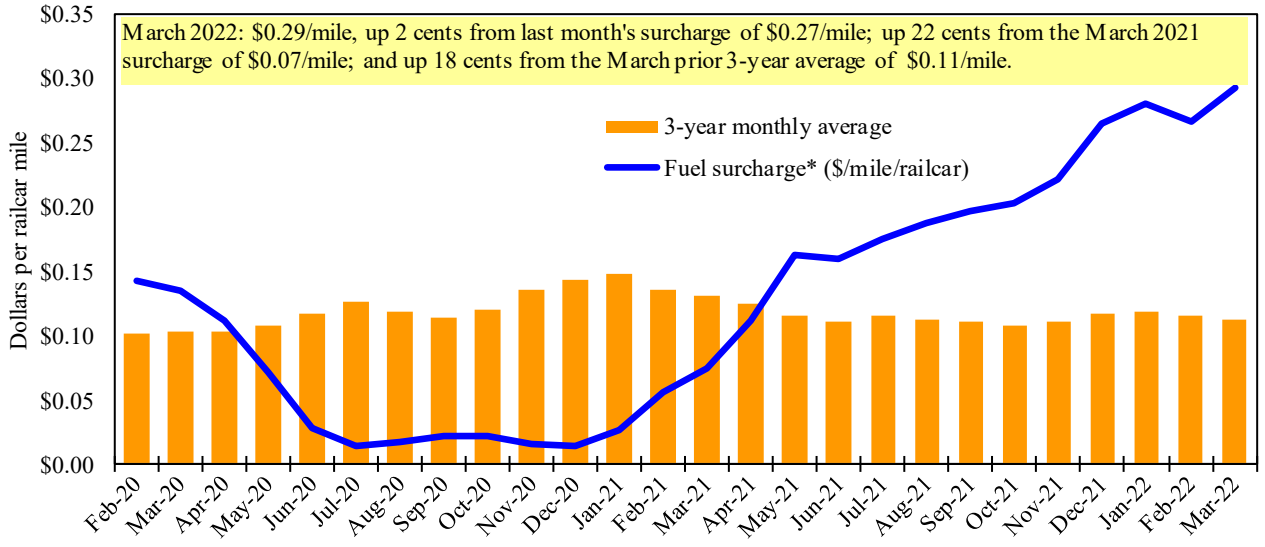
[4]Percentage change calculated using tariff rate plus fuel surchage; Y/Y = year over year.

[5] 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.

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

Figure 7

Railroad fuel surcharges, North American weighted average[1]



[1] Weighted by each Class I railroad's proportion of grain traffic for the prior year.

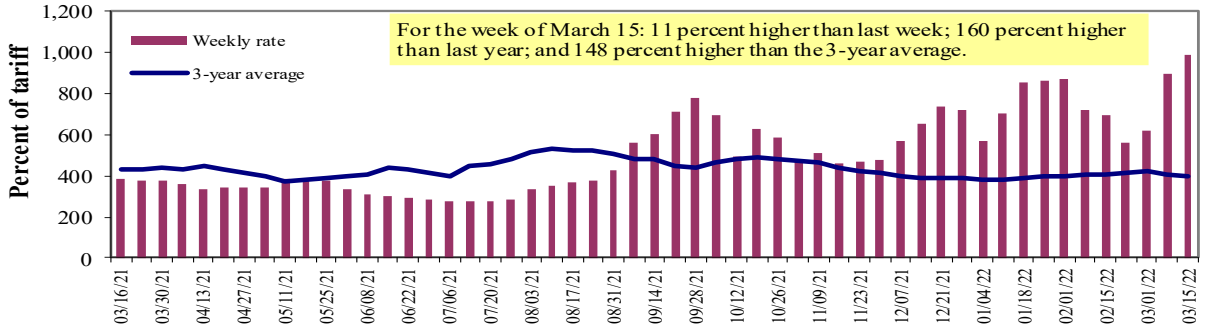
* Beginning January 2009, the Canadian Pacific fuel surcharge is computed by a monthly average of the bi-weekly fuel surcharge.

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

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

Barge Transportation

Figure 8
Illinois River barge freight rate[1,2]



[1]Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); [2]4-week moving average of the 3-year average.
*Source: USDA, Agricultural Marketing Service.

Table 9
Weekly barge freight rates: Southbound only

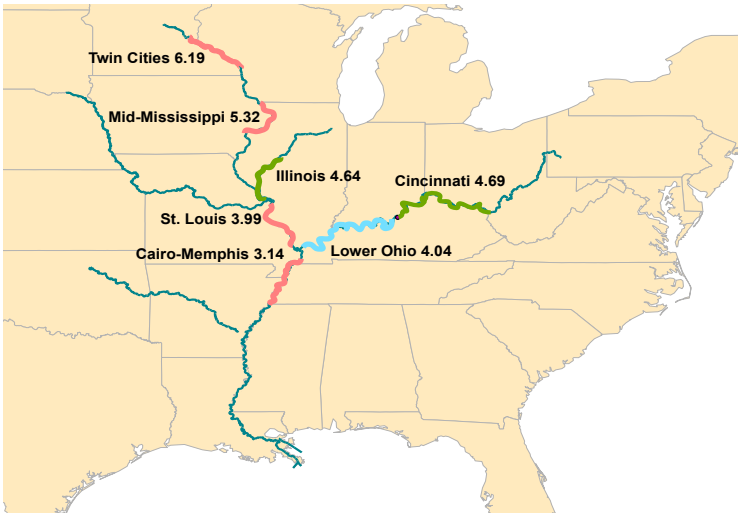
		Twin Cities	Mid-Mississippi	Lower Illinois River	St. Louis	Cincinnati	Lower Ohio	Cairo-Memphis
Rate[1]	3/15/2022	-	1000	990	871	1060	1060	765
	3/8/2022	-	882	893	768	904	904	664
$/ton	3/15/2022	-	53.20	45.94	34.75	49.71	42.82	24.02
	3/8/2022	-	46.92	41.44	30.64	42.40	36.52	20.85
Current week % change from the same week:								
	Last year	-	-	160	220	262	262	219
	3-year avg. [2]	-	-	148	204	225	225	187
Rate[1]	April	875	745	850	733	865	865	670
	June	675	640	600	525	585	585	505

[1]Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); [2]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

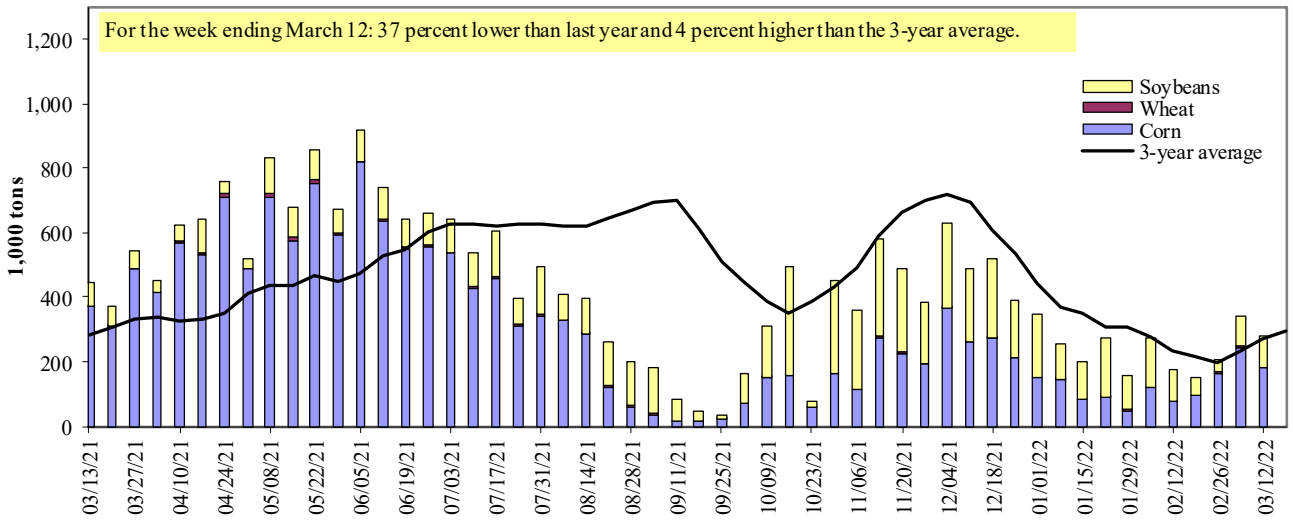
Select applicable index from market quotes are included in tables on this page. The 1976 benchmark rates per ton are provided in map.



Map Credit: USDA, Agricultural Marketing Service

Figure 10

Barge movements on the Mississippi River[1] (Locks 27 - Granite City, IL)



[1] The 3-year average is a 4-week moving average.

Source: U.S. Army Corps of Engineers.

Table 10

Barge grain movements (1,000 tons)

For the week ending 03/12/2022	Corn	Wheat	Soybeans	Other	Total
Mississippi River					
Rock Island, IL (L15)	0	0	5	0	5
Winfield, MO (L25)	55	2	30	0	87
Alton, IL (L26)	150	0	119	0	268
Granite City, IL (L27)	179	0	104	0	283
Illinois River (La Grange)	115	0	116	0	231
Ohio River (Olmsted)	167	4	82	2	254
Arkansas River (L1)	4	14	12	0	30
Weekly total - 2022	350	18	198	2	568
Weekly total - 2021	615	33	162	0	810
2022 YTD[1]	3,000	259	2,294	32	5,584
2021 YTD[1]	4,956	160	2,561	87	7,763
2022 as % of 2021 YTD	61	162	90	37	72
Last 4 weeks as % of 2021[2]	75	170	126	322	88
Total 2021	23,516	1,634	11,325	297	36,772

[1] 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.

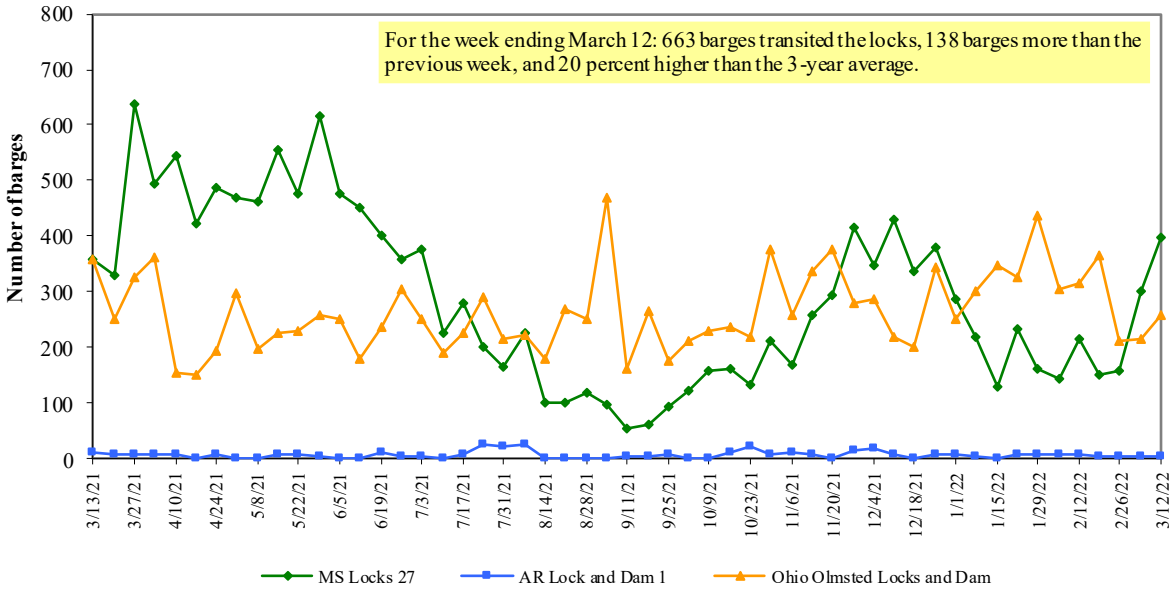
[2] As a percent of same period in 2020.

Note: L (as in "L15") refers to a lock, locks, or locks and dam facility.

Source: U.S. Army Corps of Engineers.

Figure 11

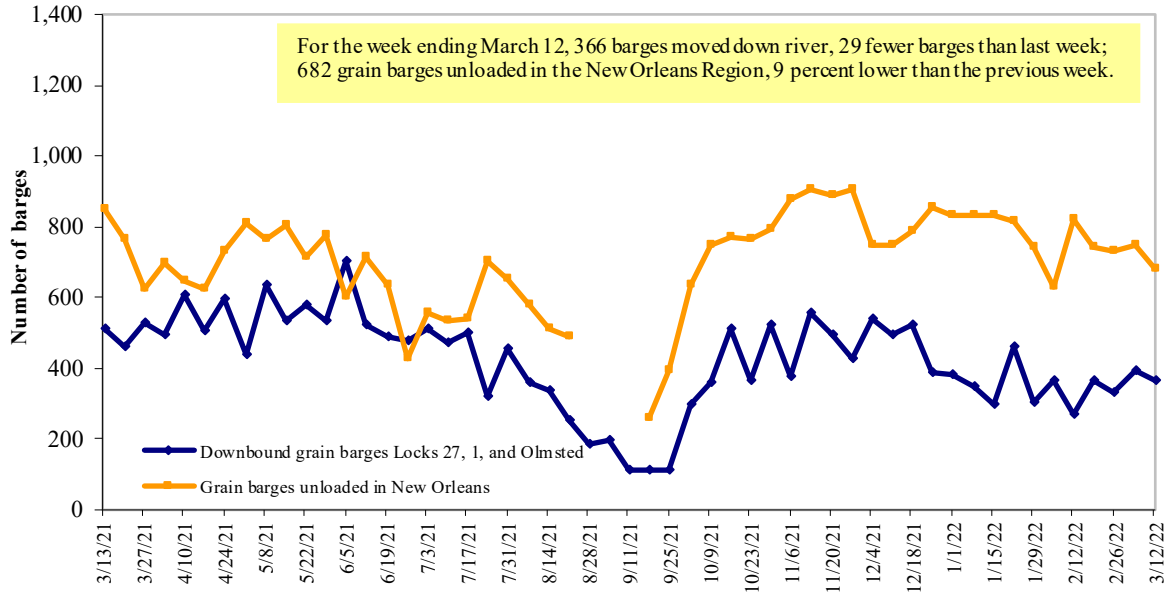
Upbound empty barges transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam



Source: U.S. Army Corps of Engineers.

Figure 12

Grain barges for export in New Orleans region



Note: Olmsted = Olmsted Locks and Dam.

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 3/14/2022 (U.S. $/gallon)

Region	Location	Price	Change from Week ago	Change from Year ago
I	East Coast	5.334	0.364	2.186
	New England	5.231	0.416	2.149
	Central Atlantic	5.474	0.381	2.182
	Lower Atlantic	5.264	0.345	2.200
II	Midwest	5.044	0.395	1.875
III	Gulf Coast	5.110	0.407	2.122
IV	Rocky Mountain	4.966	0.424	1.690
V	West Coast	5.867	0.474	2.226
	West Coast less California	5.416	0.438	2.146
	California	6.264	0.505	2.313
Total	United States	5.250	0.401	2.059

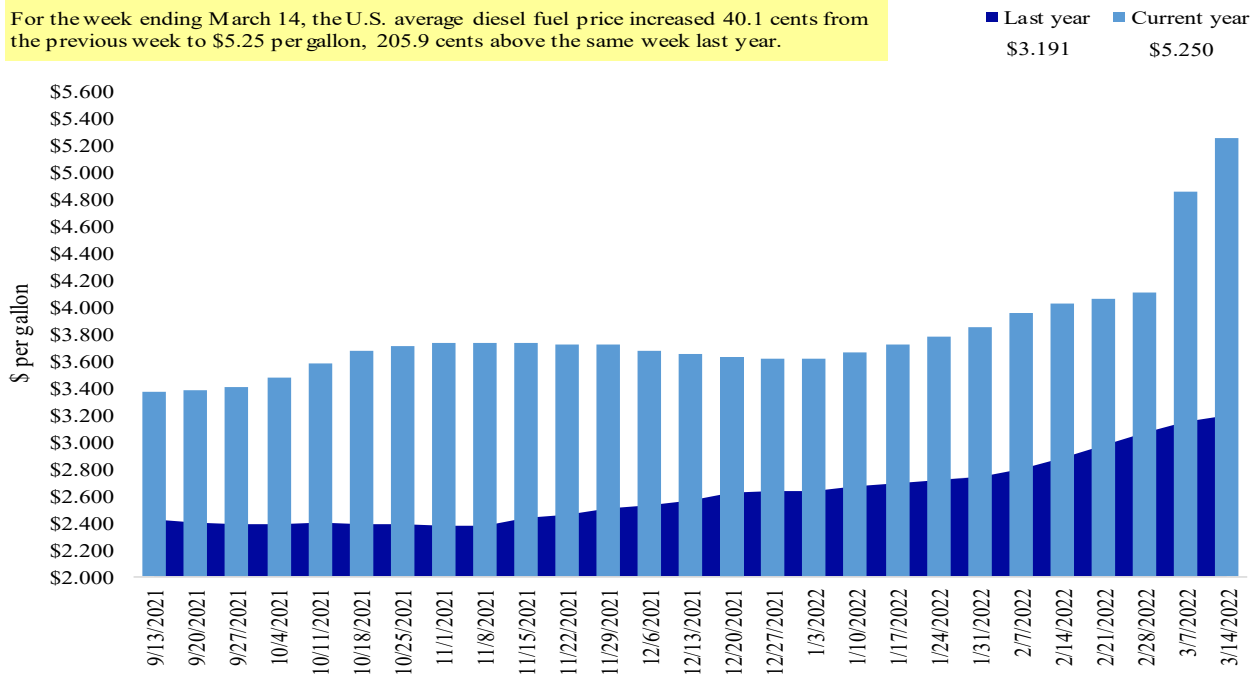
[1]Diesel fuel prices include all taxes. Prices represent an average of all types of diesel fuel.

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

Figure 13

Weekly diesel fuel prices, U.S. average

For the week ending March 14, the U.S. average diesel fuel price increased 40.1 cents from the previous week to $5.25 per gallon, 205.9 cents above the same week last year.



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)

	Wheat						Corn	Soybeans	Total
For the week ending	HRW	SRW	HRS	SWW	DUR	All wheat			
Export balances[1]									
3/3/2022	1,775	585	1,128	551	19	4,058	22,669	10,760	37,487
This week year ago	1,376	414	1,942	2,138	154	6,024	31,756	7,111	44,892
Cumulative exports-marketing year[2]									
2021/22 YTD	5,655	2,102	3,895	2,709	170	14,531	27,533	41,611	83,675
2020/21 YTD	6,783	1,341	5,219	4,236	518	18,097	27,763	53,243	99,103
YTD 2021/22 as % of 2020/21	83	157	75	64	33	80	99	78	84
Last 4 wks. as % of same period 2020/21*	134	147	56	28	18	69	73	136	82
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

[1] Current unshipped (outstanding) export sales to date.

[2] Shipped export sales to date; 2021/22 marketing year now in effect for wheat, corn and soybeans.

Note: marketing year: wheat = 6/01-5/31, corn and soybeans = 9/01-8/31. YTD = year-to-date; wks. = weeks; HRW= hard red winter; SRW = soft red winter; HRS= hard red spring; SWW= soft white wheat; DUR= durum.

Source: USDA, Foreign Agricultural Service.

Table 13

Top 5 importers[1] of U.S. corn

For the week ending 3/3/2022	2021/22 current MY	Total commitments[2] 2020/21 last MY	% change current MY from last MY	Exports[3] 3-yr. avg. 2019-21
	1,000 mt -			
Mexico	14,149	12,143	17	14,817
Japan	7,531	8,425	(11)	11,082
China	12,102	18,739	(35)	7,920
Columbia	3,310	2,647	25	4,491
Korea	213	1,761	(88)	3,302
Top 5 importers	**37,305**	**43,714**	**(15)**	**41,613**
Total U.S. corn export sales	**50,202**	**59,519**	**(16)**	**53,145**
% of projected exports	79%	85%		
Change from prior week[2]	**2,144**	**396**		
Top 5 importers' share of U.S. corn export sales	74%	73%		78%
USDA forecast March 2022	**63,613**	**70,051**	**(9)**	
Corn use for ethanol USDA forecast, March 2022	**135,890**	**127,838**	**6**	

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

[2] 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.

[3] FAS marketing year ranking reports (carryover plus accumulated export); yr. = year; avg. = average.

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

Source: USDA, Foreign Agricultural Service.

Table 14

Top 5 importers[1] of U.S. soybeans

For the week ending 3/3/2022	Total commitments[2] 2021/22 current MY	2020/21 last MY	% change current MY from last MY	Exports[3] 3-yr. avg. 2018-20
				- 1,000 mt -
China	27,291	35,775	(24)	21,666
Mexico	4,749	4,432	7	4,754
Egypt	3,108	2,388	30	3,093
Indonesia	1,118	1,704	(34)	2,325
Japan	1,811	1,779	2	2,275
Top 5 importers	**38,077**	**46,079**	**(17)**	**34,113**
Total U.S. soybean export sales	**52,371**	**60,355**	**(13)**	**50,758**
% of projected exports	92%	98%		
change from prior week[2]	**2,204**	**351**		
Top 5 importers' share of U.S. soybean export sales	73%	76%		**67%**
USDA forecast, March 2022	**56,948**	**61,608**	**(8)**	

[1] Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2020/21; marketing year (MY) = Sep 1 - Aug 31.
[2] 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.
[3] FAS marketing year ranking reports (carryover plus accumulated export); yr. = year; avg. = average.
Note: A red number in parentheses indicates a negative number; mt = metric ton.
Source: USDA, Foreign Agricultural Service.

Table 15

Top 10 importers[1] of all U.S. wheat

For the week ending 3/3/2022	Total Commitments[2] 2021/22 current MY	2020/21 last MY	% change current MY from last MY	Exports[3] 3-yr. avg. 2018-20
		1,000 mt -		- 1,000 mt -
Mexico	3,367	3,274	3	3,388
Philippines	2,719	2,957	(8)	3,121
Japan	2,243	2,336	(4)	2,567
Korea	1,196	1,605	(25)	1,501
Nigeria	1,999	1,348	48	1,490
China	848	2,918	(71)	1,268
Taiwan	823	1,051	(22)	1,187
Indonesia	67	994	(93)	1,131
Thailand	537	756	(29)	768
Italy	209	570	(63)	681
Top 10 importers	**14,007**	**17,809**	(21)	**17,102**
Total U.S. wheat export sales	**18,589**	**24,120**	(23)	**24,617**
% of projected exports	85%	89%		
change from prior week[2]	**307**	**330**		
Top 10 importers' share of U.S. wheat export sales	75%	74%		69%
USDA forecast, March 2022	**21,798**	**27,030**	(19)	

[1] Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2020/21; Marketing year (MY) = Jun 1 - May 31.
[2] 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.
[3] FAS marketing year final reports (carryover plus accumulated export); yr. = year; avg. = average.
Note: A red number in parentheses indicates a negative number.
Source: USDA, Foreign Agricultural Service.

Table 16

Grain inspections for export by U.S. port region (1,000 metric tons)

Port regions	For the week ending 03/10/22	Previous week*	Current week as % of previous	2022 YTD*	2021 YTD*	2022 YTD as % of 2021 YTD	Last 4-weeks as % of: Last year	Last 4-weeks as % of: Prior 3-yr. avg.	2021 total*
Pacific Northwest									
Wheat	133	297	45	2,196	3,073	71	70	71	13,243
Corn	180	131	137	2,292	3,311	69	63	108	13,420
Soybeans	142	144	98	3,399	3,685	92	102	106	14,540
Total	**455**	**573**	**80**	**7,887**	**10,069**	**78**	**74**	**92**	**41,203**
Mississippi Gulf									
Wheat	86	50	172	739	381	194	244	110	3,202
Corn	753	1,217	62	8,264	9,661	86	83	130	38,498
Soybeans	433	442	98	6,150	8,139	76	113	99	27,159
Total	**1,272**	**1,709**	**74**	**15,153**	**18,180**	**83**	**93**	**118**	**68,858**
Texas Gulf									
Wheat	10	0	n/a	591	628	94	76	57	3,888
Corn	6	0	n/a	121	107	113	14	14	627
Soybeans	0	1	n/a	2	619	0	3	9	1,611
Total	**16**	**1**	**n/a**	**714**	**1,355**	**53**	**60**	**51**	**6,126**
Interior									
Wheat	65	77	84	595	496	120	140	178	2,972
Corn	182	199	92	1,759	1,658	106	111	121	10,147
Soybeans	158	148	107	1,481	1,471	101	116	110	6,525
Total	**405**	**424**	**96**	**3,834**	**3,625**	**106**	**117**	**124**	**19,644**
Great Lakes									
Wheat	4	0	n/a	22	19	115	672	n/a	536
Corn	0	0	n/a	0	0	n/a	n/a	n/a	145
Soybeans	0	0	n/a	0	0	n/a	n/a	n/a	592
Total	**4**	**0**	**n/a**	**22**	**19**	**115**	**672**	**n/a**	**1,273**
Atlantic									
Wheat	0	0	n/a	4	35	13	0	0	128
Corn	3	7	40	35	0	n/a	n/a	548	85
Soybeans	81	74	108	668	767	87	171	269	2,184
Total	**83**	**82**	**102**	**708**	**802**	**88**	**148**	**248**	**2,397**
U.S. total from ports*									
Wheat	297	424	70	4,148	4,632	90	88	82	23,969
Corn	1,125	1,555	72	12,471	14,737	85	80	123	62,921
Soybeans	813	809	101	11,699	14,682	80	112	108	52,612
Total	**2,235**	**2,788**	**80**	**28,318**	**34,051**	**83**	**90**	**109**	**139,501**

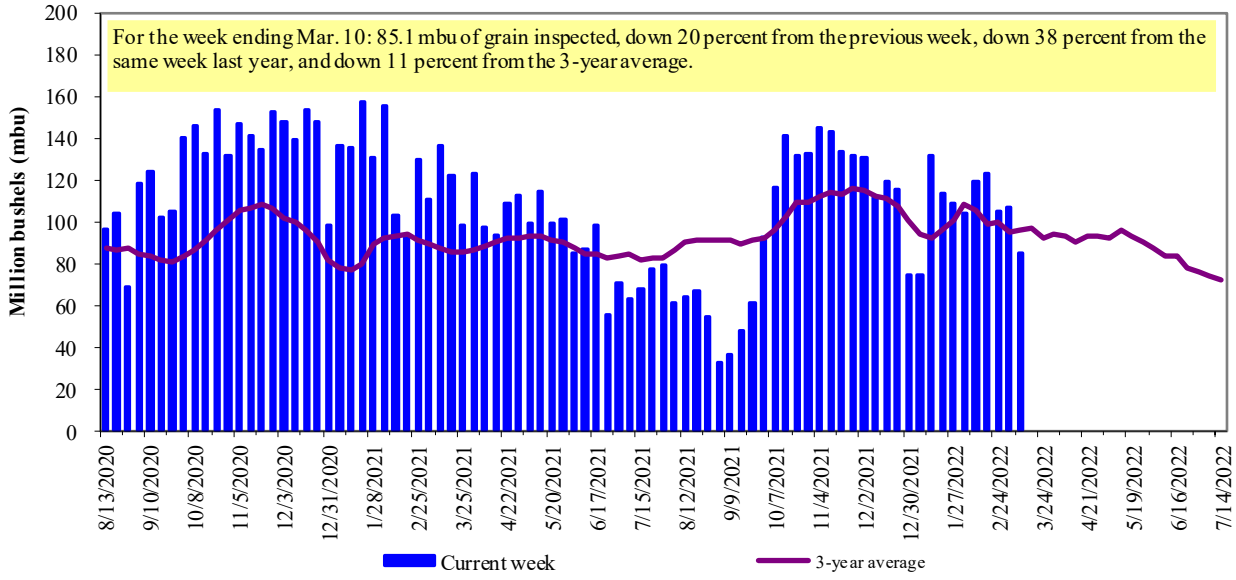
*Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

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)

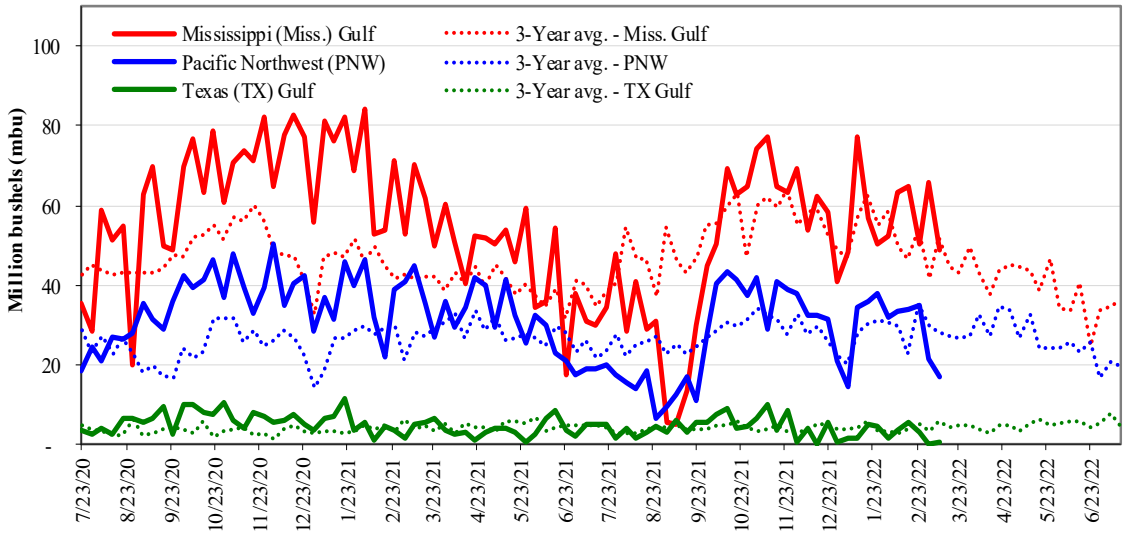


Note: 3-year average consists of 4-week running average.

Source: USDA, Federal Grain Inspection Service.

Figure 15

U.S. Grain inspections: U.S. Gulf and PNW[1] (wheat, corn, and soybeans)



Week ending 03/10/22 inspections (mbu):	
MS Gulf:	48.7
PNW:	17.2
TX Gulf:	0.6

Percent change from:	MS Gulf	TX Gulf	U.S. Gulf	PNW
Last wk:	down 26	up 1973	down 25	down 20
Last Year (same wk):	down 31	down 88	down 35	down 62
3-yr avg. (4-wk. mov. Avg):	unchanged	down 86	down 7	down 41

Source: USDA, Federal Grain Inspection Service.

Table 17

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

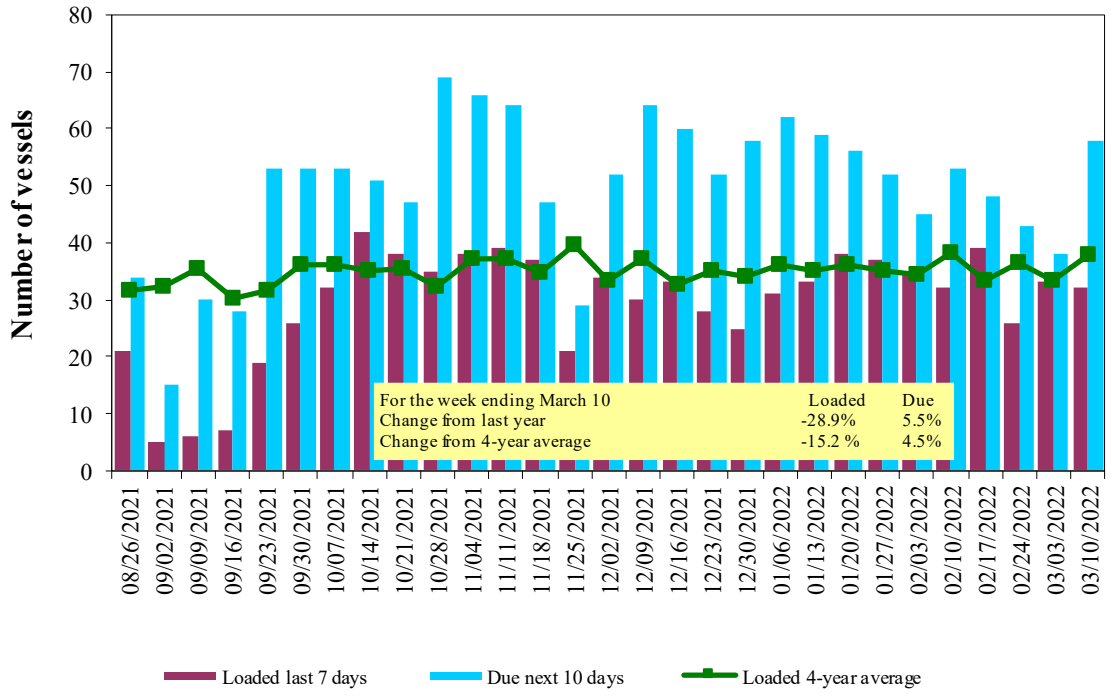
	Gulf			Pacific Northwest
Date	In port	Loaded 7-days	Due next 10-days	In port
3/10/2022	26	32	58	10
3/3/2022	30	33	38	8
2021 range	(10…57)	(5...48)	(15...69)	(4…27)
2021 average	34	32	49	15

Note: n/a = not available due to the holiday

Source: USDA, Agricultural Marketing Service.

Figure 16

U.S. Gulf[1] vessel loading activity

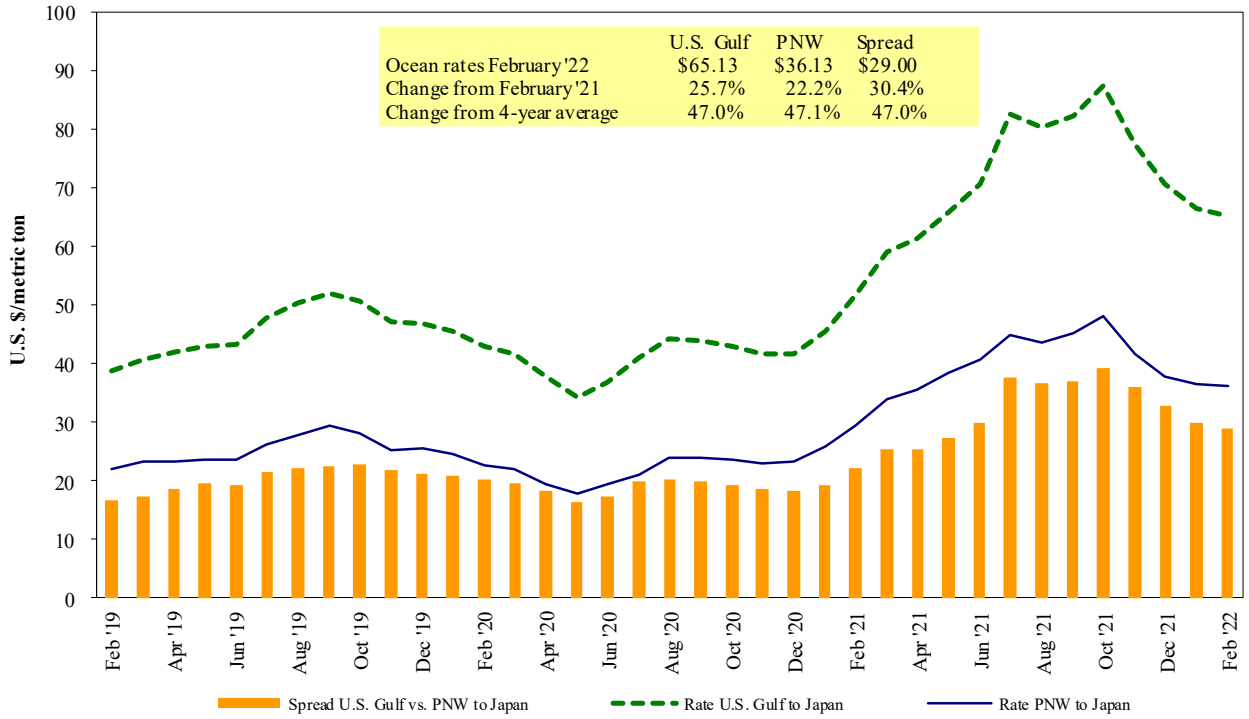


[1]U.S. Gulf includes Mississippi, Texas, and East Gulf

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 03/12/2022

Export region	Import region	Grain types	Loading date	Volume loads (metric tons)	Freight rate (US$/metric ton)
U.S. Gulf	Japan	Heavy grain	May 1/20, 2022	50,000	78.90
U.S. Gulf	China	Heavy grain	Dec 1/10, 2021	65,000	76.00
U.S. Gulf	China	Heavy grain	Nov 1/10, 2021	66,000	89.00
U.S. Gulf	Djibouti	Sorghum	Mar 1/10, 2022	10,000	209.97*
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	Japan	Wheat	Sep 1, 2021	52,170	56.55*
PNW	Yemen	Wheat	Jan 24/Feb 4, 2022	29,960	124.00*
Brazil	N. China	Heavy grain	Mar 18/27, 2022	64,000	56.85
Brazil	N. China	Heavy grain	Jan 1/5, 2022	64,000	58.25
Argentina	Taiwan	Corn	May 1/Jun, 2022	65,000	85.00
Australia	Japan	Barley	Nov 1/10, 2021	55,000	65.50

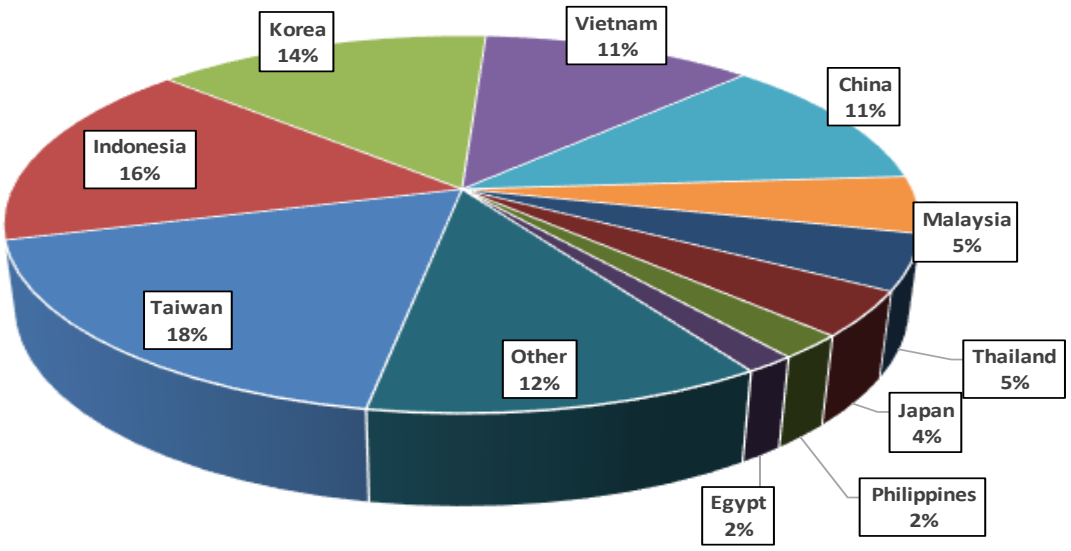
*50 percent of food aid from the United States is required to be shipped on U.S.-flag vessels.

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.

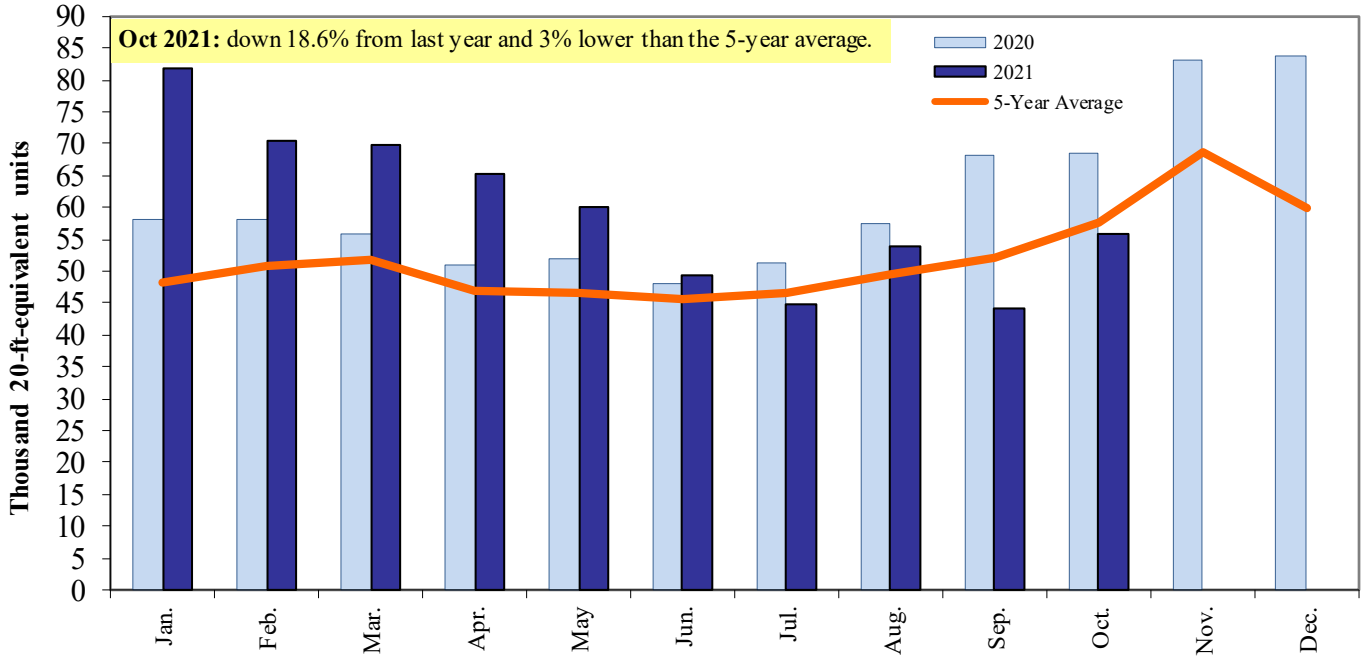
Figure 18
Top 10 destination markets for U.S. containerized grain exports, Jan-Oct 2021



Note: The following Harmonized Tariff Codes are used to calculate containerized grains movements: 1001, 100190, 1002, 1003 100300, 1004, 100400, 1005, 100590, 1007, 100700, 1102, 110100, 230310, 110220, 110290, 1201, 120100, 230210, 230990, 230330, 120810, and 120190.

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: 100190, 100200, 100300, 100400, 100590, 100700, 110100, 110220, 110290, 1201, 120100, 120190, 120810, 230210, 230310, 230330, and 230990.

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

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