



Grain Transportation Report

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

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May 4, 2023

WEEKLY HIGHLIGHTS

California Approves Strict New Clean-Air Regulations for Rail and Trucking

On April 27, the California Air Resources Board (CARB) passed the [In-Use Locomotive](#) regulation aimed at reducing emissions from locomotives within the State. Among other rules, the regulation would set idling time-limits and require Class I line-haul locomotives built after 2035 to be zero-emissions to operate in California. On April 28, CARB also approved its [Advanced Clean Fleets \(ACF\)](#) regulation to accelerate deployment of medium- and heavy-duty, zero-emissions trucks. ACF would set rules on drayage fleets and certain “high-priority” fleets to push many trucks toward zero-emissions around 2035. Agriculture stakeholders are concerned that the majority of farmers and livestock workers live in rural areas with limited access to the electric infrastructure required by ACF. Plus, the time needed to charge vehicles could hinder the transport of perishable agricultural commodities. To help address stakeholder concerns, CARB has specified [certain exemptions](#) for motor carriers, and California offers [some funding](#) for zero-emissions vehicles. CARB must submit the rules for public comment and obtain approval from the U.S. Environmental Protection Agency before the rules can be enforced.

GTR Railcar Secondary Market Data To Be Expanded

Starting this week, May 4, [GTR figs. 3-5](#) and [tables 1](#) and [5](#) include additional railcar secondary market data. The secondary railcar market consists of bids and offers among grain shippers for guaranteed railcar service in upcoming months. Since 2019, the *Grain Transportation Report (GTR)* has reported secondary market car values only for shuttle trains (i.e., trains with 75 or more cars carrying only grain). The updated data will now include secondary market car values for non-shuttle trains (i.e., single cars or unit trains) going back to December 2020. Additionally, table 5 will now include secondary market car values for Canadian Pacific shuttle trains. On April 14, the Canadian Pacific Railway (CP) merged with the Kansas City Southern Railway (KCS) to form Canadian Pacific Kansas City (CPKC). However, until the CP and KCS shuttle train fleets have been integrated into CPKC, the *GTR* will continue to report CP secondary market car values. The new data are also available for download on [AgTransport](#).

Northwest Seaport Alliance Launches Rail Cargo Incentive Program

Beginning on May 1, [a new rail cargo incentive program](#) of the Northwest Seaport Alliance (NWSA) will provide ocean container carriers a \$50 incentive per rail lift for eligible rail volumes moving through the Ports of Seattle and Tacoma, WA. NWSA—the marine cargo operating partnership for the gateway—expects its new rail cargo program to generate approximately 60,000 additional rail lifts, or roughly 15 percent of NWSA’s international intermodal lifts in 2022. The fourth-largest container gateway in the United States, NWSA shows an international [container trade imbalance](#)—in 2022, loaded container exports were less than half of loaded container imports. Roughly half of the import cargo that moves through the NWSA gateway is bound for destinations outside of the Puget Sound region—primarily, the Midwest. Along with improving NWSA’s trade balance, the incentive program has strong potential to benefit agricultural shippers. Most inland ramp locations served and/or operated by the BNSF and Union Pacific Railroads will be eligible for the incentive program, including ramps in Minot, ND; Pocatello, ID; Millersburg, OR; and Wallula, WA.

Snapshots by Sector

Export Sales

For the week ending April 20, [unshipped balances](#) of wheat, corn, and soybeans for marketing year (MY) 2022/23 totaled 21.18 million metric tons (mmt), down 4 percent from last week and down 35 percent from the same time last year. Net [corn export sales](#) for MY 2022/23 were 0.400 mmt, up 28 percent from last week. Net [soybean export sales](#) were 0.311 mmt, up significantly from last week. Net weekly [wheat export sales](#) were 0.156 mmt, down 40 percent from last week.

Rail

U.S. Class I railroads originated 22,013 [grain carloads](#) during the week ending April 22. This was a 1-percent increase from the previous week, 4 percent fewer than last year, and 6 percent fewer than the 3-year average.

Average May [shuttle secondary railcar bids/offers](#) (per car) were \$304 below tariff for the week ending April 27. This was \$98 less than last week and \$1,829 lower than this week last year. Average non-shuttle secondary railcar bids/offers per car were \$56 above tariff. This was \$69 less than last week, and \$644 lower than this week last year.

Barge

For the week ending April 29, [barged grain movements](#) totaled 594,950 tons. This was 9 percent less than the previous week and 25 percent less than the same period last year.

For the week ending April 29, 388 grain barges [moved down river](#)—25 fewer than last week. There were 622 grain barges [unloaded](#) in the New Orleans region, 2 percent fewer than last week.

Ocean

For the week ending April 27, 32 [oceangoing grain vessels](#) were loaded in the Gulf—11 percent fewer than the same period last year. Within the next 10 days (starting April 28), 35 vessels were expected to be loaded—10 percent fewer than the same period last year.

As of April 27, the rate for shipping a metric ton (mt) of grain from the U.S. Gulf to Japan was \$54.75. This was unchanged from the previous week. The rate from the Pacific Northwest to Japan was \$30.00 per mt, unchanged from the previous week.

Fuel

For the week ending May 1, the U.S. average [diesel fuel price](#) decreased 5.9 cents from the previous week to \$4.018 per gallon, 149.1 cents below the same week last year.

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Feature Article/Calendar

Seasonal Lull in Demand Softened First Quarter 2023 Ocean Freight Rates

Typically, ocean freight rates for shipping bulk commodities, including grain, tend to fall during the first quarter, and first quarter 2023 was no exception: rates fell, as various holidays around the world lowered demand. This article examines monthly changes in rates during the first quarter, as well as current rates and possible future trends.

In first quarter 2023, ocean freight rates for shipping bulk grain (wheat, corn, and soybeans) from the U.S. Gulf to Japan averaged \$51.12 per metric ton (mt). Having declined steadily since third quarter 2022, this rate was down 13 percent from fourth quarter 2022 to first quarter 2023 (quarter to quarter), down 26 percent from first quarter 2022 to first quarter 2023 (year to year), and down 1 percent from the 4-year average (see table and figure). From the Pacific Northwest (PNW) to Japan, rates averaged \$28.39 per mt—down 17 percent quarter to quarter, down 26 percent year to year, and down 1 percent from the 4-year average. From the U.S. Gulf to Europe, rates averaged \$26.09 per mt—down 11 percent quarter to quarter, up 1 percent year to year, and up 35 percent from the 4-year average. The significant rise in the U.S. Gulf-to-Europe rate compared to the 4-year average reflects recent rising trade between United States and Europe ([Grain Transportation Report, January 26, 2023](#)).

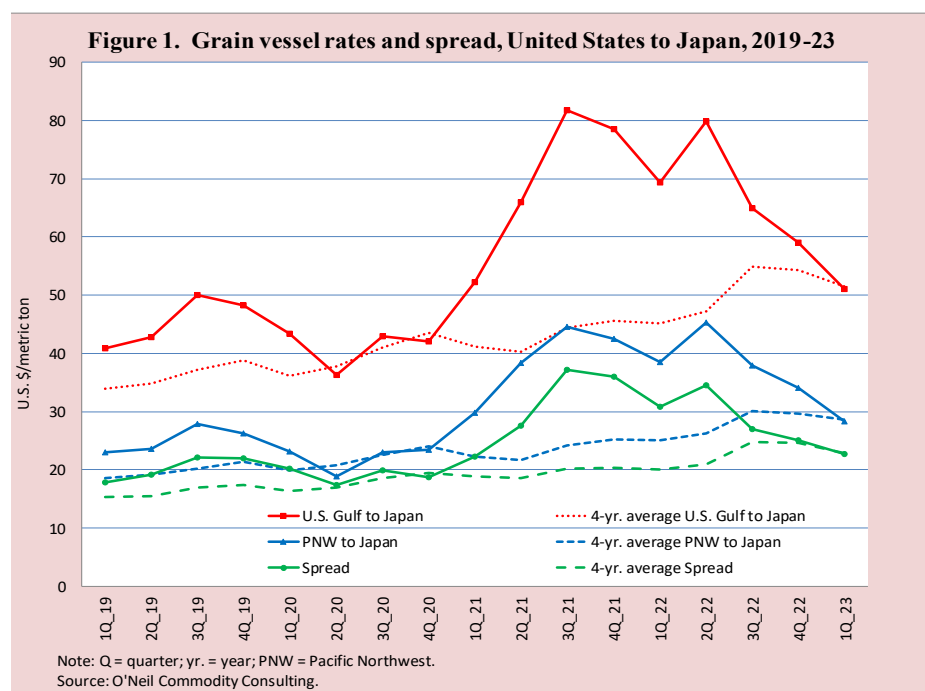
Ocean freight rates for grain routes first quarter 2023							
Route	Jan.	Feb.	Mar.	1 st quarter 2023	Change from		
					4 th qtr. '22	1 st qtr. '22	4-yr. avg.
	--\$/mt--			--\$/mt--	Percent		
U.S. Gulf to Japan	52.31	48.56	52.50	51.12	-13	-26	-1
PNW to Japan	28.81	27.06	29.30	28.39	-17	-26	-1
Spread*	23.50	21.50	23.20	22.73	-9	-26	0
U.S. Gulf to Europe	27.19	24.38	26.70	26.09	-11	1	35

Note: qtr. = quarter; avg. = average; mt = metric ton; yr. = year; PNW = Pacific Northwest.
 *Spread is the difference between ocean freight rates for shipping grain from the U.S. Gulf to Japan and PNW to Japan.
 Source: O'Neil Commodity Consulting.

Monthly Changes In Rates

January. The Chinese Lunar New Year holidays occurred 1 week earlier than usual this year, driving down shipping demand and ocean freight rates. The early holiday caused the market to soften sooner than it typically does with the annual worldwide New Year celebrations.

February. The holidays continued into February. Additionally, another circumstance negatively affected the bulk market and pushed down rates: ahead of



China's annual parliamentary meeting, policy uncertainty around future stimulus measures produced market anxiety (*Shipping Insight, Drewry Maritime Research* (Drewry), March 6, 2023). Further pushing down rates, severe weather in Brazil delayed the soybean harvest and lowered exports. In Vale, one of Brazil's largest iron mines, heavy rainfall significantly curtailed iron ore production. In February, one notable factor exerted upward pressure on rates: China imported a [record volume](#) of iron ore in the first 2 months of 2023—a 7-percent increase from the same 2022 period (Reuters). However, China's iron purchases were not enough to offset the downward pressures on ocean freight rates, especially for smaller size vessels.

March. Rates rose in March as market activity rebounded after the Lunar Year holidays. China's production Purchasing Managers Index was high, signaling heightened industrial activity. Also, sales of new houses in China rose for 2 consecutive months—February and March. After lifting restrictions on Australian coal in February, China expected its utilities' demand for coal to recover. To meet that demand, China [imported](#) 41.17 million tons of coal in March—the highest level since January 2020 and a 151-percent increase over March 2022 (*Energyworld*). In some parts of China, steel production curbs were lifted, which probably translated into higher demand for iron ore and coking coal (*Shipping Insight, Drewry*, March 6, 2023).

China's iron ore inventory was down 6 percent from February to March and down 14 percent year to year (*Shipping Insight, Drewry*, April 7, 2023). Such declines signaled a surge in import demand, putting upward pressure on ocean freight rates. Hoping to boost the country's steel making industry, China [imported](#) 100.23 million tons of iron ore in March—up 15 percent year to year (Reuters). China also exported 7.89 million tons of steel products in March, and its total exports for the quarter were 20.08 million tons—up 53 percent year to year.

In Brazil, improving weather, along with the approaching export season, accelerated soybean exports, which in turn, lifted Panamax rates. Brazil [exported](#) 14.2 million metric tons (mmt) of soybeans in March—up 17 percent year to year. Also, the renewal of the Black Sea Grain Initiative on March 18 could have boosted trade and spurred shipping demand by making it safer for ships to operate in the region. The [UN-brokered deal](#) was aimed at supplying markets with food and fertilizer amid global shortages and high prices.

Current Market Analysis and Outlook

As of April 27, 2023, the rate for shipping 1 mt of grain from the U.S. Gulf to Japan was \$54.75—1 percent more than the first available rate at the beginning of the year and 31 percent less than the same period in 2022. The rate from PNW to Japan was \$30.00 per mt—2 percent less than the first available rate at the beginning of the year and 32 percent less than the same period in 2022. Also, as of April 27, the rate from the U.S. Gulf to Europe was \$29.00 per mt—2 percent more than the first available rate in the beginning of the year and 9 percent less than the same 2022 period.

Ocean freight rates are currently low. However, some factors suggest they may soon rise. A [recent agreement](#) between Ukraine and the European Commission to allow Ukrainian grain shipments to resume may boost rates. In addition, if renewed, the Black Sea Grain Initiative agreement (set to expire on May 18) could continue to stimulate shipping demand by lowering the risk of operating in the region. Economic activity in China—including the recent surges in coal and iron-ore imports—will likely continue to increase, boosting the demand for bulk items.

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Grain Transportation Indicators

Table 1

Grain transport cost indicators¹

For the week ending	Truck		Rail		Barge	Ocean	
		Non-Shuttle	Shuttle			Gulf	Pacific
05/03/23	270	327	242		194	245	213
04/26/23	274	331	246		228	245	213

¹Indicator: 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 due to holiday.

Source: USDA, Agricultural Marketing Service.

Table 2

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

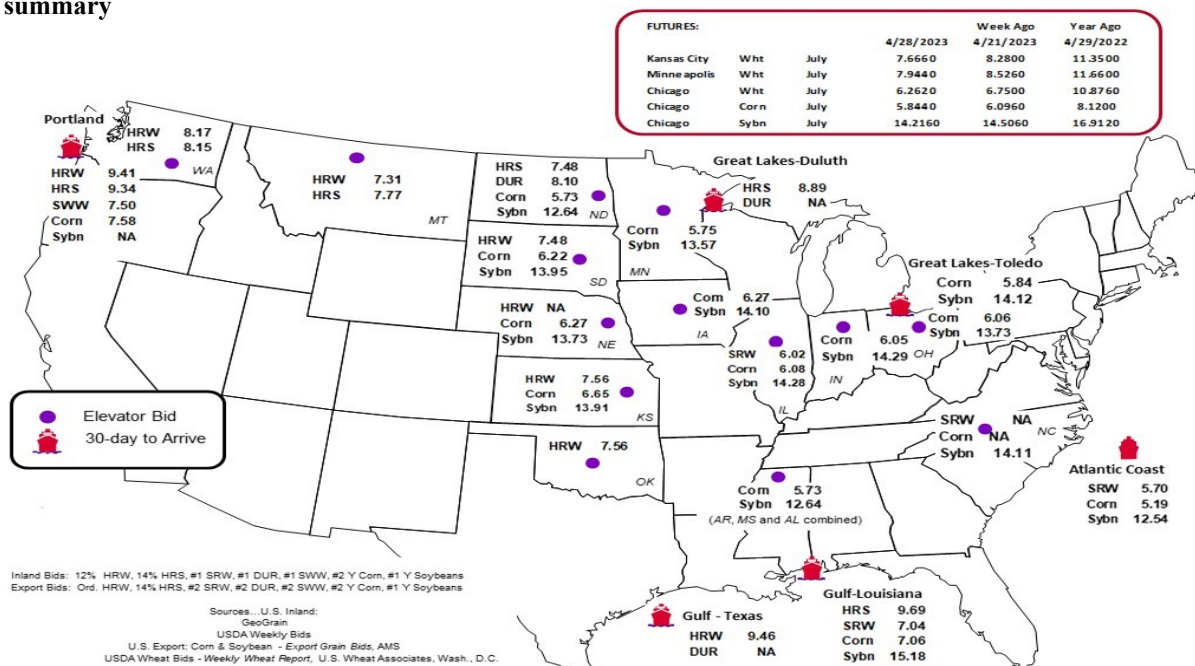
Commodity	Origin-destination	4/28/2023	4/21/2023
Corn	IL-Gulf	-0.98	-1.06
Corn	NE-Gulf	-0.79	-0.93
Soybean	IA-Gulf	-1.08	-1.15
HRW	KS-Gulf	-1.90	-2.10
HRS	ND-Portland	-1.86	-1.76

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

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

For the week ending: 4/22/2023	East		West			U.S. total	Canada	
	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	1,973	2,780	9,670	1,381	6,209	22,013	4,678	4,970
This week last year	1,842	2,050	12,798	1,085	5,272	23,047	4,053	4,007
2023 YTD	32,717	42,477	157,826	21,297	92,225	346,542	82,904	74,252
2022 YTD	29,730	36,965	187,117	20,197	96,568	370,577	57,137	59,985
2023 YTD as % of 2022 YTD	110	115	84	105	96	94	145	124
Last 4 weeks as % of 2022*	105	105	83	120	107	95	133	130
Last 4 weeks as % of 3-yr. avg.**	111	101	79	134	101	92	110	97
Total 2022	93,313	130,282	570,232	66,338	296,945	1,157,110	214,308	214,010

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

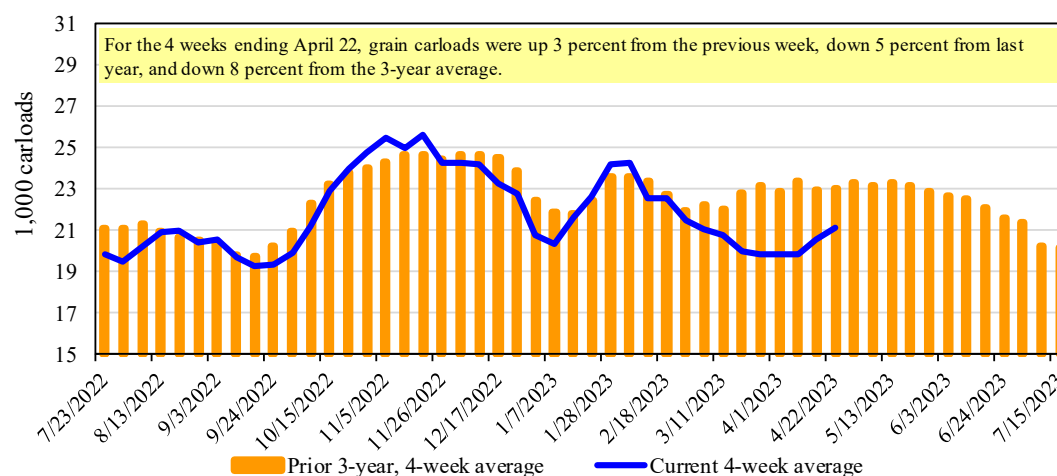
**The past 4 weeks as a percent of the same period from the prior 3-year average. YTD = year-to-date; avg. = average; yr. = year.

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

Source: Association of American Railroads.

Figure 2

Total weekly U.S. Class I railroad grain carloads



Source: Association of American Railroads.

Table 4

Railcar auction offerings¹ (\$/car)²

For the week ending: 4/27/2023		Delivery period							
		May-23	May-22	Jun-23	Jun-22	Jul-23	Jul-22	Aug-23	Aug-22
BNSF ³	COT grain units	0	no offer	0	no offer	no bids	0	no bids	0
	COT grain single-car	0	no offer	0	no offer	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.

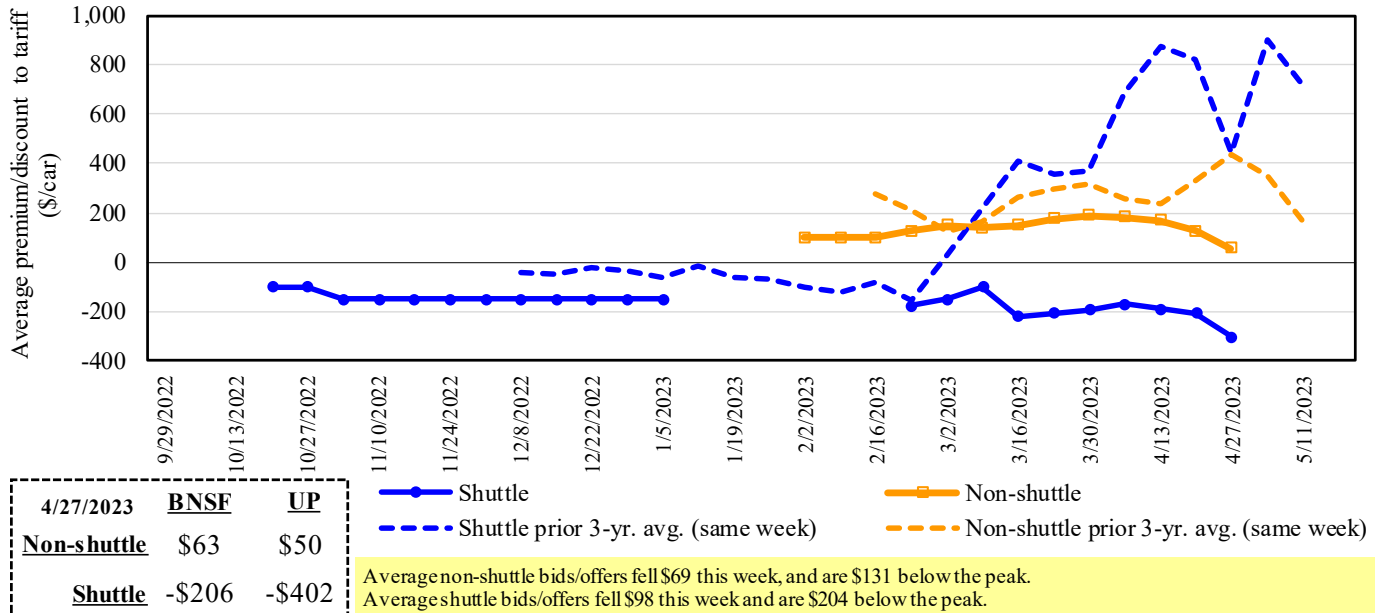
Region 1 includes: AR, IL, LA, MO, NM, OK, TX, WI, and Duluth, MN.

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

Source: USDA, Agricultural Marketing Service.

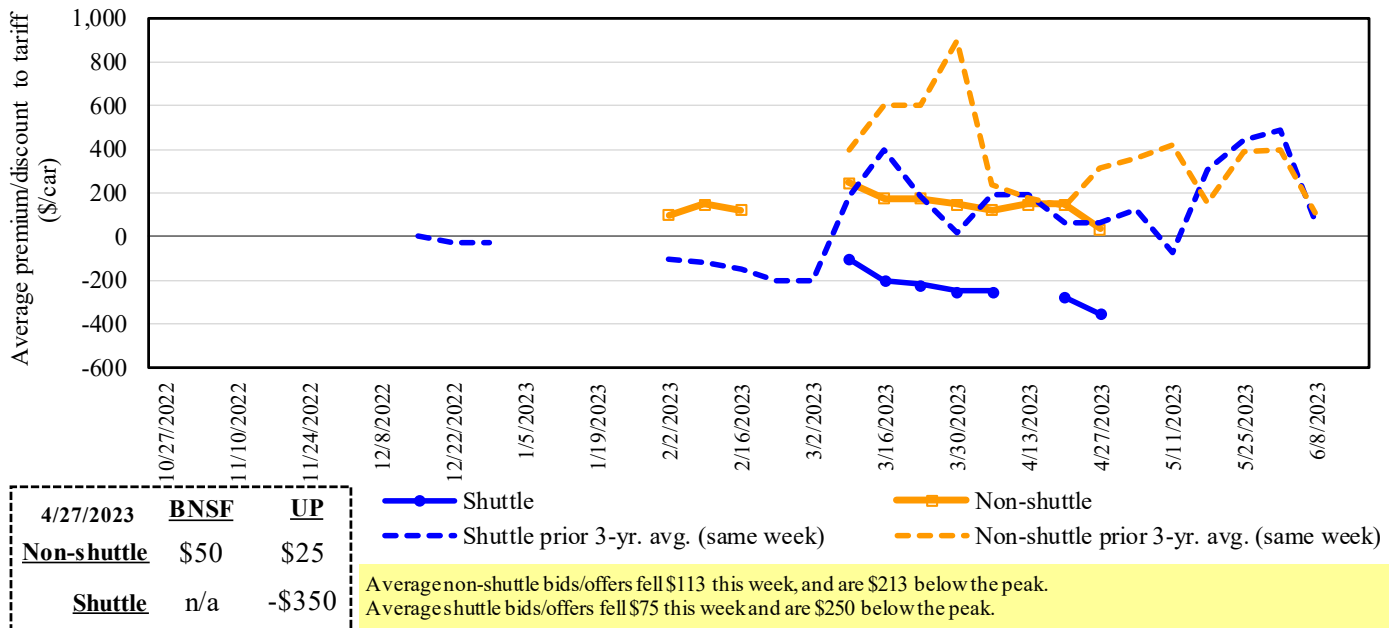
The **secondary rail market** information reflects trade values for service that was originally purchased from the railroad carrier as some form of guaranteed freight. The **auction and secondary rail** values are indicators of rail service quality and demand/supply.

Figure 3
Secondary market bids/offers for railcars to be delivered in May 2023



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.

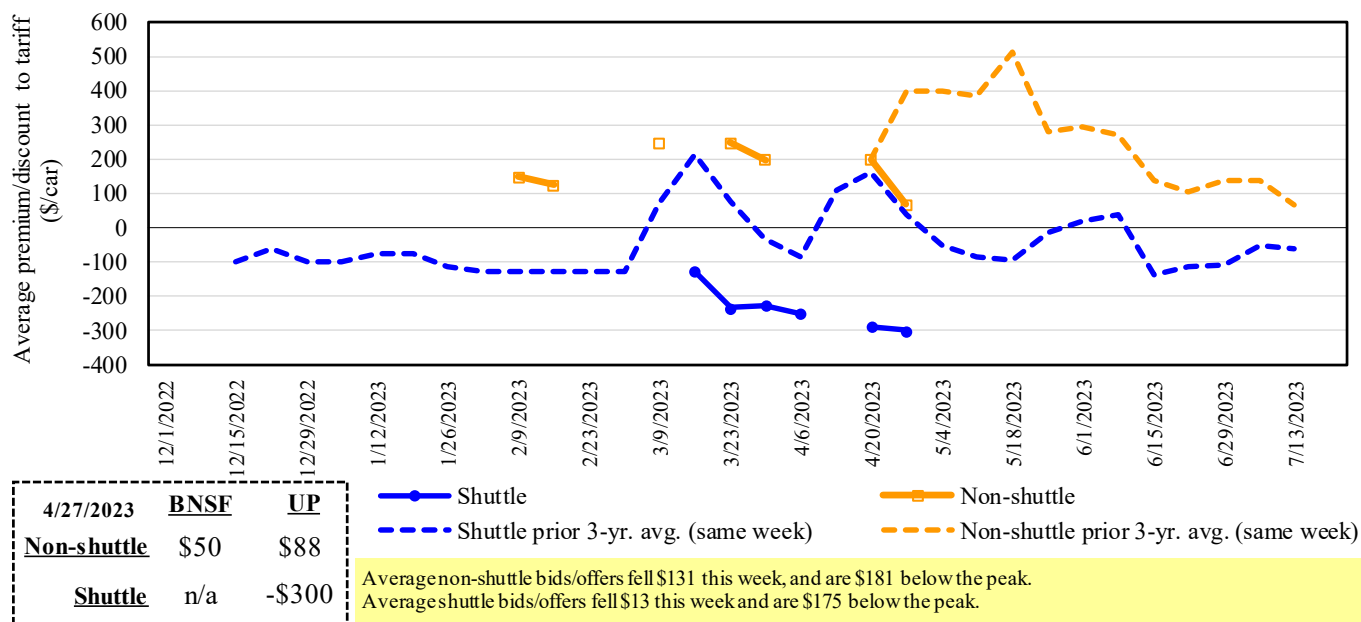
Figure 4
Secondary market bids/offers for railcars to be delivered in June 2023



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 July 2023



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 5

Weekly secondary railcar market (\$/car)¹

For the week ending: 4/27/2023		Delivery period					
		May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23
Non-shuttle	BNSF-GF	63	50	50	n/a	n/a	n/a
	Change from last week	(12)	(50)	n/a	n/a	n/a	n/a
	Change from same week 2022	(438)	(400)	n/a	n/a	n/a	n/a
	UP-Pool	50	25	88	150	n/a	n/a
	Change from last week	(125)	(175)	(113)	n/a	n/a	n/a
Change from same week 2022	(850)	(475)	(313)	n/a	n/a	n/a	
Shuttle	BNSF-GF	(206)	n/a	n/a	(200)	(183)	n/a
	Change from last week	(114)	n/a	n/a	0	(225)	n/a
	Change from same week 2022	(1,019)	n/a	n/a	(150)	(558)	n/a
	UP-Pool	(402)	(350)	(300)	(250)	n/a	n/a
	Change from last week	(81)	(75)	(25)	(50)	n/a	n/a
	Change from same week 2022	(2,640)	(1,150)	(700)	(550)	n/a	n/a
	CP-GF	(100)	(100)	n/a	n/a	n/a	n/a
Change from last week	0	0	n/a	n/a	n/a	n/a	
Change from same week 2022	(400)	(300)	n/a	n/a	n/a	n/a	

¹Average premium/discount to tariff, \$/car-last week.

Note: Bids listed are market indicators only and are not guaranteed prices. n/a = not available; a red number in parentheses indicates a negative number;

GF = guaranteed freight; Pool = guaranteed pool; BNSF = BNSF Railway; UP = Union Pacific Railroad; CP = Canadian Pacific Railway.

Data from The Malsam Co., Tradewest Brokerage Co.

Source: USDA, Agricultural Marketing Service.

Table 6

Tariff rail rates for unit and shuttle train shipments¹

May 2023	Origin region ³	Destination region ³	Tariff rate/car	Fuel surcharge per car	Tariff plus surcharge per:		Percent change Y/Y ⁴
					metric ton	bushel ²	
Unit train							
Wheat	Wichita, KS	St. Louis, MO	\$3,695	\$218	\$38.85	\$1.06	-2
	Grand Forks, ND	Duluth-Superior, MN	\$3,858	\$75	\$39.05	\$1.06	4
	Wichita, KS	Los Angeles, CA	\$7,490	\$383	\$78.18	\$2.13	-2
	Wichita, KS	New Orleans, LA	\$4,600	\$383	\$49.48	\$1.35	0
	Sioux Falls, SD	Galveston-Houston, TX	\$7,226	\$314	\$74.88	\$2.04	-1
	Colby, KS	Galveston-Houston, TX	\$4,850	\$419	\$52.33	\$1.42	-1
	Amarillo, TX	Los Angeles, CA	\$5,121	\$584	\$56.65	\$1.54	-4
Corn	Champaign-Urbana, IL	New Orleans, LA	\$4,000	\$433	\$44.02	\$1.12	-4
	Toledo, OH	Raleigh, NC	\$8,551	\$482	\$89.70	\$2.28	3
	Des Moines, IA	Davenport, IA	\$2,655	\$92	\$27.27	\$0.69	4
	Indianapolis, IN	Atlanta, GA	\$6,593	\$362	\$69.06	\$1.75	3
	Indianapolis, IN	Knoxville, TN	\$5,564	\$234	\$57.58	\$1.46	4
	Des Moines, IA	Little Rock, AR	\$4,250	\$269	\$44.88	\$1.14	3
	Des Moines, IA	Los Angeles, CA	\$6,130	\$784	\$68.66	\$1.74	-1
Soybeans	Minneapolis, MN	New Orleans, LA	\$4,242	\$648	\$48.56	\$1.32	-9
	Toledo, OH	Huntsville, AL	\$7,037	\$343	\$73.29	\$1.99	3
	Indianapolis, IN	Raleigh, NC	\$7,843	\$488	\$82.73	\$2.25	3
	Indianapolis, IN	Huntsville, AL	\$5,689	\$232	\$58.80	\$1.60	4
	Champaign-Urbana, IL	New Orleans, LA	\$4,865	\$433	\$52.61	\$1.43	0
Shuttle train							
Wheat	Great Falls, MT	Portland, OR	\$4,393	\$220	\$45.81	\$1.25	0
	Wichita, KS	Galveston-Houston, TX	\$4,311	\$171	\$44.51	\$1.21	-5
	Chicago, IL	Albany, NY	\$7,090	\$455	\$74.92	\$2.04	3
	Grand Forks, ND	Portland, OR	\$6,051	\$380	\$63.86	\$1.74	-2
	Grand Forks, ND	Galveston-Houston, TX	\$5,399	\$396	\$57.54	\$1.57	-2
	Colby, KS	Portland, OR	\$5,923	\$688	\$65.65	\$1.79	-4
	Minneapolis, MN	Portland, OR	\$5,660	\$463	\$60.80	\$1.54	-2
Corn	Sioux Falls, SD	Tacoma, WA	\$5,620	\$424	\$60.02	\$1.52	-2
	Champaign-Urbana, IL	New Orleans, LA	\$4,170	\$433	\$45.71	\$1.16	2
	Lincoln, NE	Galveston-Houston, TX	\$4,360	\$247	\$45.75	\$1.16	1
	Des Moines, IA	Amarillo, TX	\$4,670	\$338	\$49.74	\$1.26	2
	Minneapolis, MN	Tacoma, WA	\$5,660	\$459	\$60.76	\$1.54	-2
	Council Bluffs, IA	Stockton, CA	\$5,580	\$475	\$60.13	\$1.53	-2
	Sioux Falls, SD	Tacoma, WA	\$6,350	\$424	\$67.27	\$1.83	-1
	Minneapolis, MN	Portland, OR	\$6,400	\$463	\$68.15	\$1.85	-2
	Fargo, ND	Tacoma, WA	\$6,250	\$377	\$65.81	\$1.79	0
	Council Bluffs, IA	New Orleans, LA	\$5,095	\$499	\$55.55	\$1.51	0
Soybeans	Toledo, OH	Huntsville, AL	\$5,277	\$343	\$55.81	\$1.52	3
	Grand Island, NE	Portland, OR	\$5,730	\$704	\$63.89	\$1.74	2

¹A 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.

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

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

⁴Percentage 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 7

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

Date: December 2021			Tariff rate per car ¹	Fuel surcharge per car ²	Tariff rate plus fuel surcharge per:		Percent change ⁴ Y/Y
Commodity	Origin state	Destination region			metric ton ³	bushel ³	
Wheat	MT	Chihuahua, CI	\$7,699	\$0	\$78.67	\$2.14	4
	OK	Cuautilan, 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
Soybeans	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
Sorghum	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

¹Rates 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.

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

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

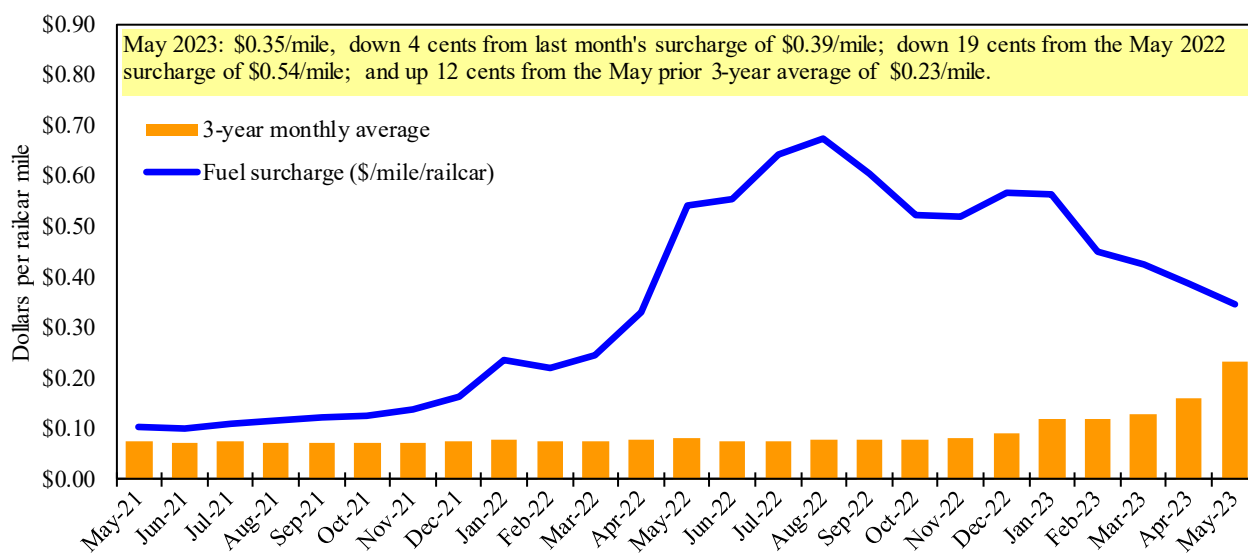
⁴Percentage change calculated using tariff rate plus fuel surcharge; Y/Y = year over year.

⁵ As of January 1, 2022, both BNSF and Union Pacific changed their billing and reporting of rates to Mexico.

As we incorporate the change, Table 7 updates will be delayed.

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

Figure 6

Railroad fuel surcharges, North American weighted average¹

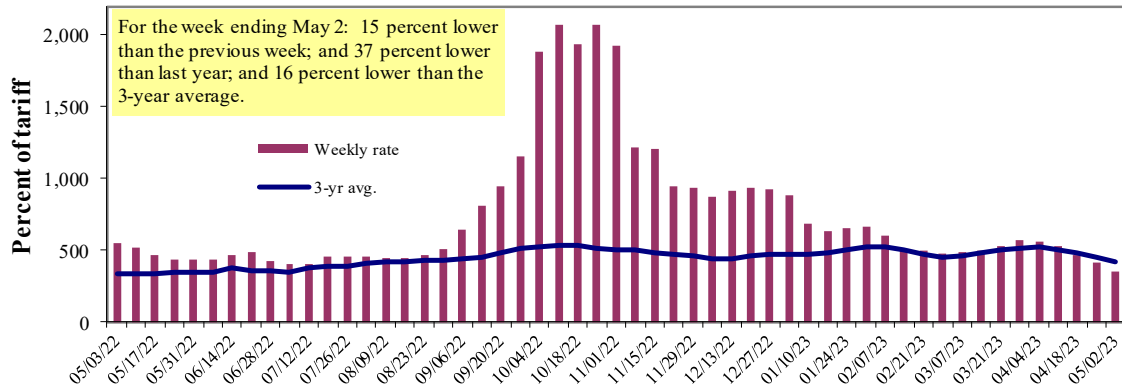
¹ Weighted by each Class I railroad's proportion of grain traffic for the prior year.

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

Barge Transportation

Figure 7

Illinois River barge freight rate^{1,2}



¹Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); ²4-week moving average of the 3-year average.
Source: USDA, Agricultural Marketing Service.

Table 8

Weekly barge freight rates: Southbound only

		Twin Cities	Mid-Mississippi	Lower Illinois River	St. Louis	Cincinnati	Lower Ohio	Cairo-Memphis
Rate ¹	5/2/2023	487	440	350	265	297	297	251
	4/25/2023	-	-	411	308	330	330	274
\$/ton	5/2/2023	30.15	23.41	16.24	10.57	13.93	12.00	7.88
	4/25/2023	-	-	19.07	12.29	15.48	13.33	8.60
Current week % change from the same week:								
	Last year	-27	-30	-37	-34	-44	-44	-36
	3-year avg. ²	-2	0	-16	-14	-18	-18	-13
Rate ¹	June	484	419	367	270	298	298	254
	August	531	494	488	434	463	463	406

¹Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); ²4-week moving average; ton = 2,000 pounds; "-" data not available.
Source: USDA, Agricultural Marketing Service.

Figure 8 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

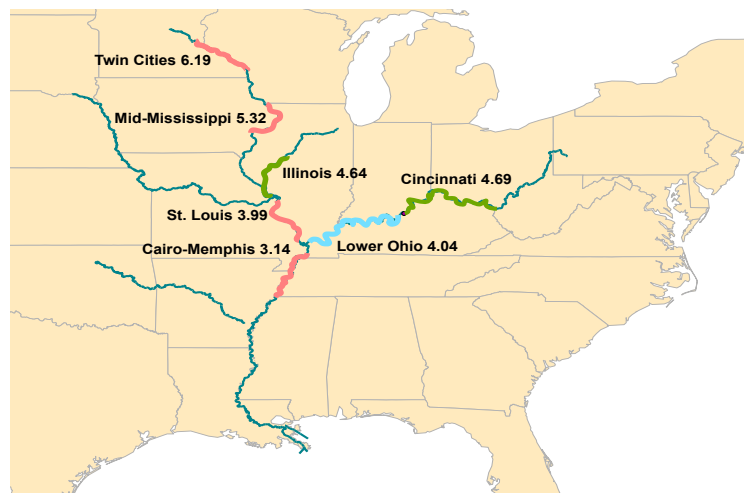
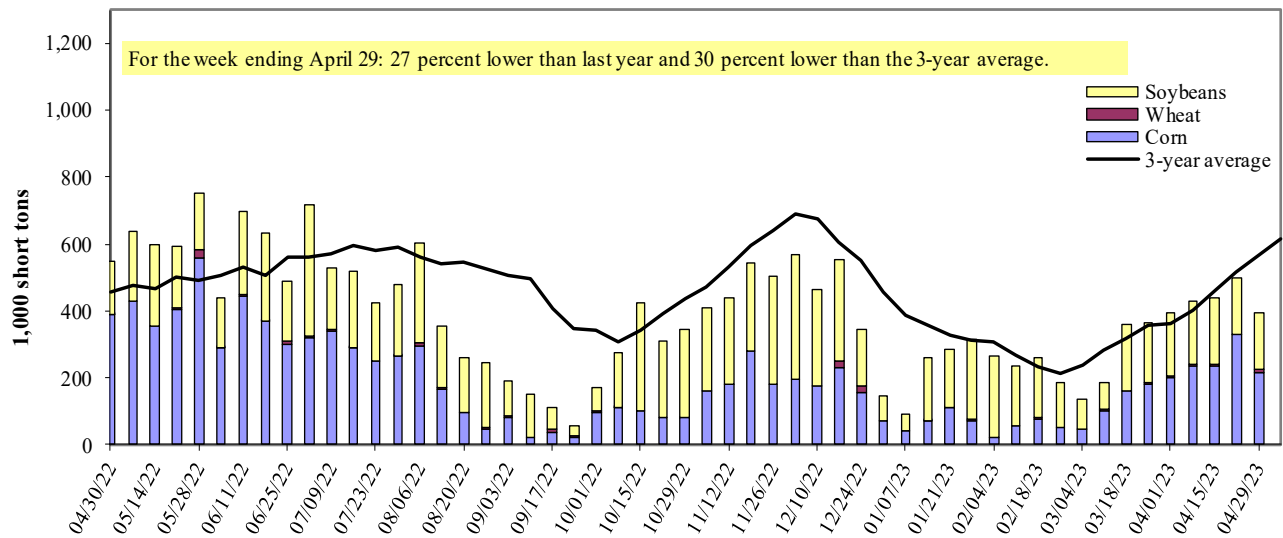


Figure 9

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



¹ 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 9

Barged grain movements (1,000 tons)

For the week ending 04/29/2023	Corn	Wheat	Soybeans	Other	Total
Mississippi River					
Rock Island, IL (L15)	0	0	0	0	0
Winfield, MO (L25)	133	3	151	2	289
Alton, IL (L26)	208	5	186	2	400
Granite City, IL (L27)	217	8	171	5	401
Illinois River (La Grange)	47	0	21	0	68
Ohio River (Olmsted)	126	9	44	0	179
Arkansas River (L1)	0	14	1	0	15
Weekly total - 2023	343	31	217	5	595
Weekly total - 2022	525	29	225	12	791
2023 YTD ¹	4,597	445	4,721	145	9,907
2022 YTD ¹	6,412	556	3,980	118	11,065
2023 as % of 2022 YTD	72	80	119	123	90
Last 4 weeks as % of 2022 ²	74	71	100	69	81
Total 2022	16,437	1,594	14,464	232	32,727

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.

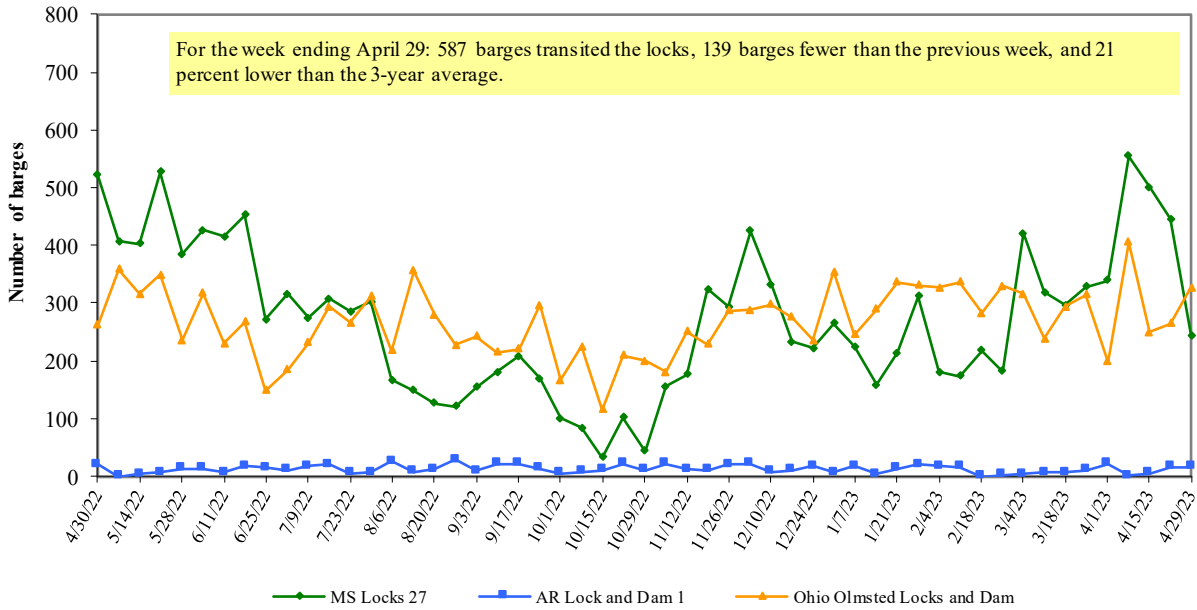
² As a percent of same period in 2022.

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 lock and vessel database and has noted the latest data may be revised in coming weeks.

Source: U.S. Army Corps of Engineers.

Figure 10

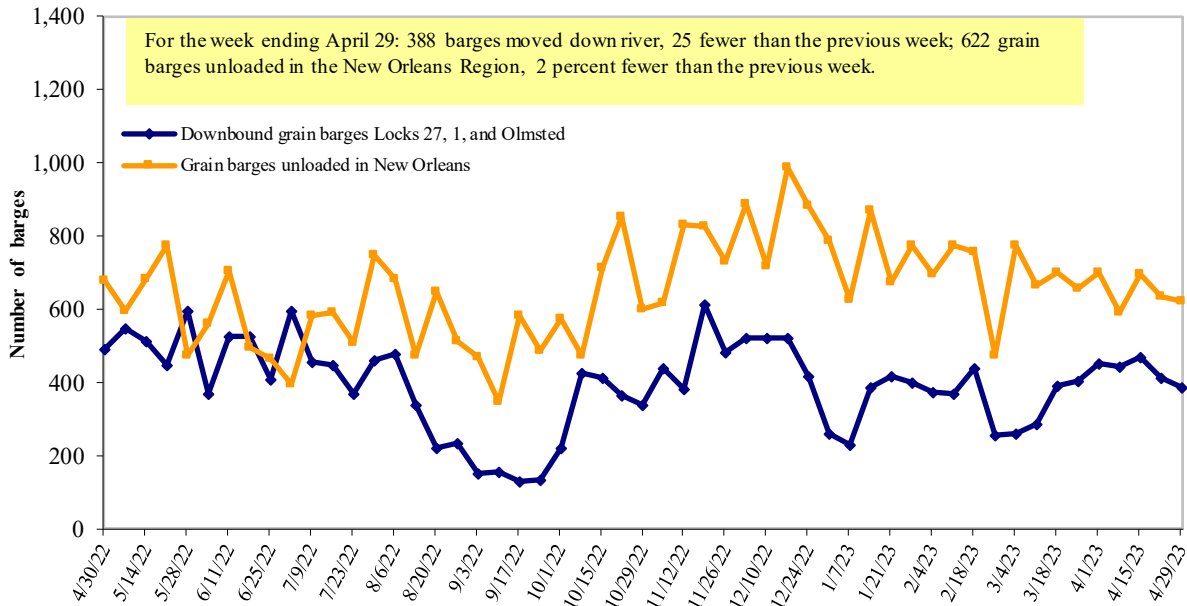
Upbound empty barges transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam



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 11

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 10

Retail on-highway diesel prices, week ending 5/1/2023 (U.S. \$/gallon)

Region	Location	Price	Change from	
			Week ago	Year ago
I	East Coast	4.073	-0.078	-1.628
	New England	4.496	-0.026	-1.605
	Central Atlantic	4.338	-0.107	-1.742
	Lower Atlantic	3.931	-0.073	-1.470
II	Midwest	3.917	-0.067	-1.412
III	Gulf Coast	3.754	-0.069	-1.456
IV	Rocky Mountain	4.146	0.022	-1.260
	West Coast	4.681	-0.011	-1.340
V	West Coast less California	4.489	0.030	-1.088
	California	4.903	-0.057	-1.509
	Total	United States	4.018	-0.059

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

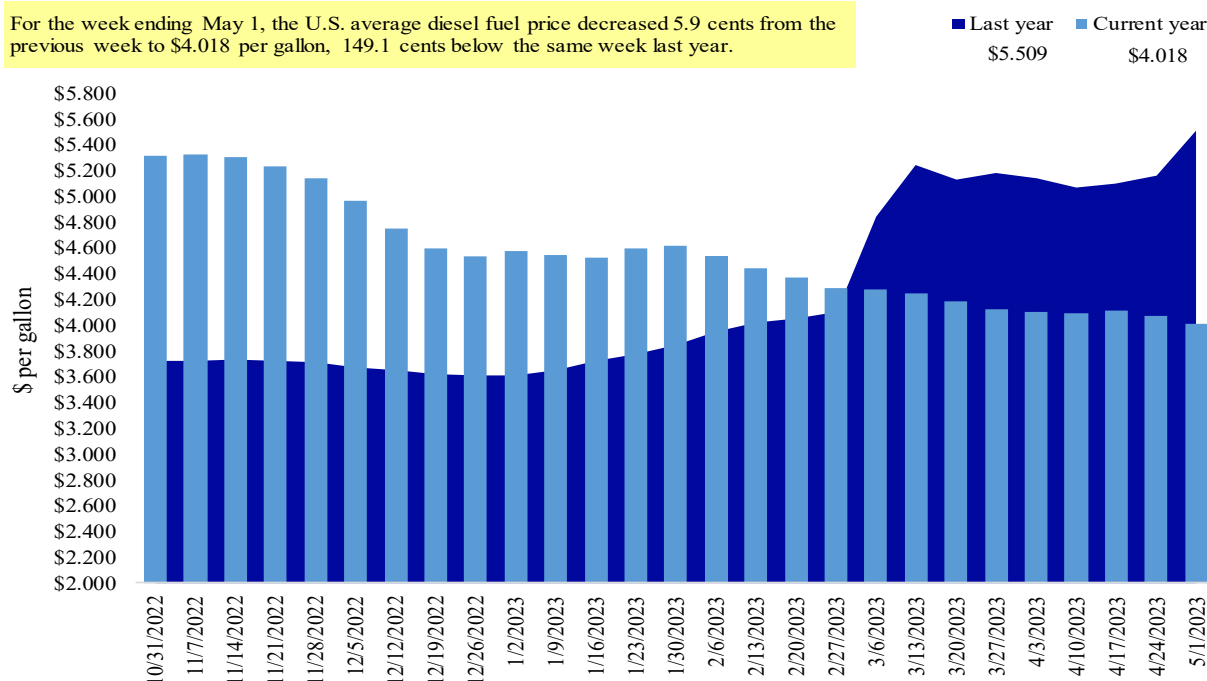
Note: On June 13, the Energy Information Administration implemented a new methodology to estimate weekly on-highway diesel fuel prices.

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

Figure 12

Weekly diesel fuel prices, U.S. average

For the week ending May 1, the U.S. average diesel fuel price decreased 5.9 cents from the previous week to \$4.018 per gallon, 149.1 cents below the same week last year.



Note: On June 13, 2022 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 11

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

For the week ending	Wheat						Corn	Soybeans	Total
	HRW	SRW	HRS	SWW	DUR	All wheat			
Export balances¹									
4/20/2023	576	408	804	597	113	2,497	14,781	3,905	21,183
This week year ago	1,018	370	700	313	1	2,401	19,383	10,849	32,633
Cumulative exports-marketing year²									
2022/23 YTD	4,480	2,438	4,879	4,076	322	16,194	23,671	46,722	86,587
2021/22 YTD	6,472	2,484	4,721	3,023	195	16,896	38,132	46,728	101,756
YTD 2022/23 as % of 2021/22	69	98	103	135	165	96	62	100	85
Last 4 wks. as % of same period 2021/22	59	117	126	198	16,720	109	82	40	70
Total 2021/22	7,172	2,786	5,254	3,261	196	18,669	59,764	57,189	135,622
Total 2020/21	8,422	1,790	7,500	6,438	656	24,807	66,958	60,571	152,335

¹ Current unshipped (outstanding) export sales to date.

² Shipped export sales to date.

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 12

Top 5 importers¹ of U.S. corn

For the week ending 4/20/2023	Total commitments ²		% change current MY from last MY	Exports ³ 3-yr. avg. 2019-21
	2022/23 current MY	2021/22 last MY		
	1,000 mt -			-1,000 mt -
Mexico	13,863	15,635	(11)	15,227
China	8,597	14,182	(39)	12,616
Japan	5,272	8,681	(39)	10,273
Columbia	1,892	3,918	(52)	4,398
Korea	714	1,128	(37)	2,563
Top 5 importers	30,337	43,544	(30)	45,077
Total U.S. corn export sales	38,452	57,515	(33)	56,665
% of YTD current month's export projection	82%	91%		
Change from prior week ²	400	867		
Top 5 importers' share of U.S. corn export sales	79%	76%		80%
USDA forecast April 2023	47,074	62,875	(25)	
Corn use for ethanol USDA forecast, April 2023	133,350	135,281	(1)	

¹Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2021/22; marketing year (MY) = Sep 1 - Aug 31.

²Cumulative 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.

³FAS marketing year ranking reports (carry over plus accumulated export); yr. = year; avg. = average; YTD = year to date.

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

Source: USDA, Foreign Agricultural Service.

Table 13

Top 5 importers¹ of U.S. soybeans

For the week ending 4/20/2023	Total commitments ²		% change current MY from last MY	Exports ³ 3-yr. avg. 2019-21
	2022/23 current MY	2021/22 last MY		
	1,000 mt -			-1,000 mt -
China	31,045	29,845	4	27,283
Mexico	4,311	5,031	(14)	4,929
Egypt	1,102	3,656	(70)	3,553
Japan	1,960	2,047	(4)	2,266
Indonesia	1,277	1,374	(7)	2,116
Top 5 importers	39,695	41,952	(5)	40,147
Total U.S. soybean export sales	50,627	57,577	(12)	54,231
% of projected exports	92%	98%		
change from prior week ²	311	481		
Top 5 importers' share of U.S. soybean export sales	78%	73%		74%
USDA forecast, April 2023	54,905	58,801	(7)	

¹Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2021/22; marketing year (MY) = Sep 1 - Aug 31.

²Cumulative 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.

³FAS marketing year ranking reports (carry over plus accumulated export); yr. = year; avg. = average; YTD = year to date.

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

Source: USDA, Foreign Agricultural Service.

Table 14

Top 10 importers¹ of all U.S. wheat

For the week ending 4/20/2023	Total commitments ²		% change current MY from last MY	Exports ³ 3-yr. avg. 2019-21
	2022/23 current MY	2021/22 last MY		
	1,000 mt -			-1,000 mt -
Mexico	3,188	3,677	(13)	3,566
Philippines	2,235	2,724	(18)	2,985
Japan	2,220	2,351	(6)	2,453
China	1,098	848	30	1,537
Nigeria	767	1,819	(58)	1,528
Korea	1,303	1,249	4	1,459
Taiwan	847	951	(11)	1,106
Indonesia	345	122	183	711
Thailand	636	557	14	703
Colombia	534	687	(22)	621
Top 10 importers	13,173	14,984	(12)	16,669
Total U.S. wheat export sales	18,691	19,297	(3)	22,763
% of projected exports	89%	89%		
change from prior week ²	156	32		
Top 10 importers' share of U.S. wheat export sales	70%	78%		73%
USDA forecast, April 2023	21,117	21,798	(3)	

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

²Cumulative 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.

³FAS marketing year ranking reports (carry over plus accumulated export); yr. = year; avg. = average.

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

Source: USDA, Foreign Agricultural Service.

Table 15

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

Port regions	For the week ending 04/27/23	Previous week*	Current week as % of previous	2023 YTD*	2022 YTD*	2023 YTD as % of 2022 YTD	Last 4-weeks as % of:		2022 total*
							Last year	Prior 3-yr. avg.	
Pacific Northwest									
Wheat	104	201	52	3,715	3,329	112	89	47	9,836
Corn	370	186	199	1,833	4,553	40	69	60	9,615
Soybeans	0	0	n/a	3,441	4,121	83	49	57	14,178
Total	473	387	122	8,988	12,003	75	72	55	33,629
Mississippi Gulf									
Wheat	119	46	257	1,010	1,358	74	81	89	4,053
Corn	891	585	152	8,819	14,987	59	76	81	30,781
Soybeans	353	290	122	11,915	9,158	130	77	128	31,283
Total	1,362	922	148	21,744	25,503	85	77	93	66,116
Texas Gulf									
Wheat	118	105	113	892	1,087	82	102	132	3,421
Corn	0	0	n/a	68	235	29	0	0	648
Soybeans	0	0	n/a	52	2	n/a	n/a	0	685
Total	118	105	113	1,012	1,324	76	79	99	4,754
Interior									
Wheat	34	30	115	850	966	88	108	105	2,912
Corn	224	146	153	3,152	3,071	103	95	97	8,961
Soybeans	63	92	68	2,394	2,555	94	53	63	7,109
Total	321	268	120	6,396	6,592	97	80	86	18,982
Great Lakes									
Wheat	0	0	n/a	79	84	94	27	21	395
Corn	0	0	n/a	0	39	0	0	0	158
Soybeans	0	0	n/a	31	90	34	40	108	760
Total	0	0	n/a	110	212	52	26	36	1,312
Atlantic									
Wheat	2	1	153	41	37	111	14	42	169
Corn	7	5	151	55	76	72	66	88	309
Soybeans	8	15	50	1,120	1,070	105	23	48	2,867
Total	17	21	79	1,217	1,183	103	25	51	3,345
U.S. total from ports*									
Wheat	377	383	98	6,586	6,860	96	88	68	20,786
Corn	1,492	922	162	13,928	22,961	61	75	76	50,471
Soybeans	423	398	106	18,953	16,996	112	65	99	56,882
Total	2,292	1,703	135	39,467	46,817	84	74	79	128,139

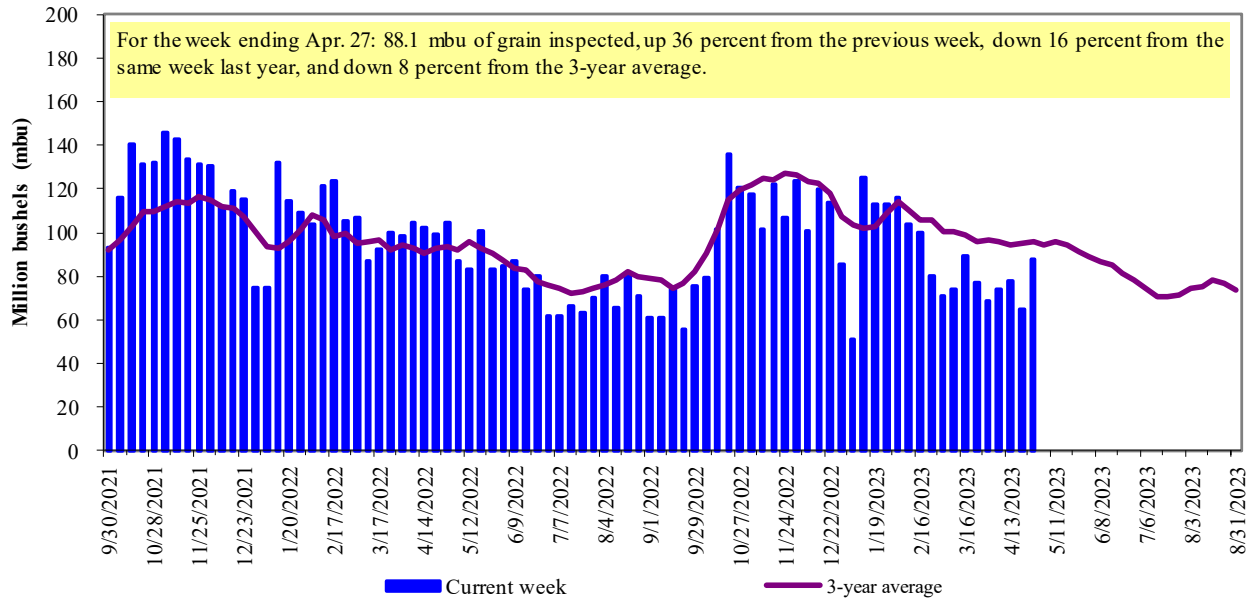
*Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

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 13

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

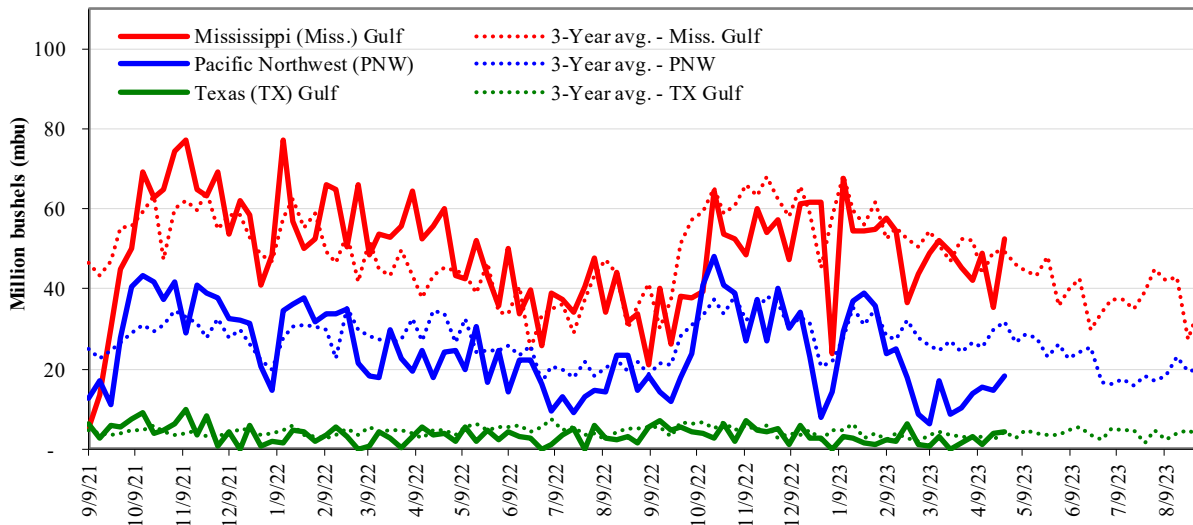


Note: 3-year average consists of 4-week running average.

Source: USDA, Federal Grain Inspection Service.

Figure 14

U.S. Grain inspections: U.S. Gulf and PNW¹ (wheat, corn, and soybeans)



Week ending 04/27/23 inspections (mbu):		Percent change from:			
		MS Gulf	TX Gulf	U.S. Gulf	PNW
MS Gulf:	52.4	Last wk: up 48	up 13	up 45	up 25
PNW:	18.4	Last Year (same wk): down 13	up 9	down 12	down 24
TX Gulf:	4.3	3-yr avg. (4-wk. mov. Avg): up 8	up 38	up 10	down 35

Source: USDA, Federal Grain Inspection Service.

Ocean Transportation

Table 16

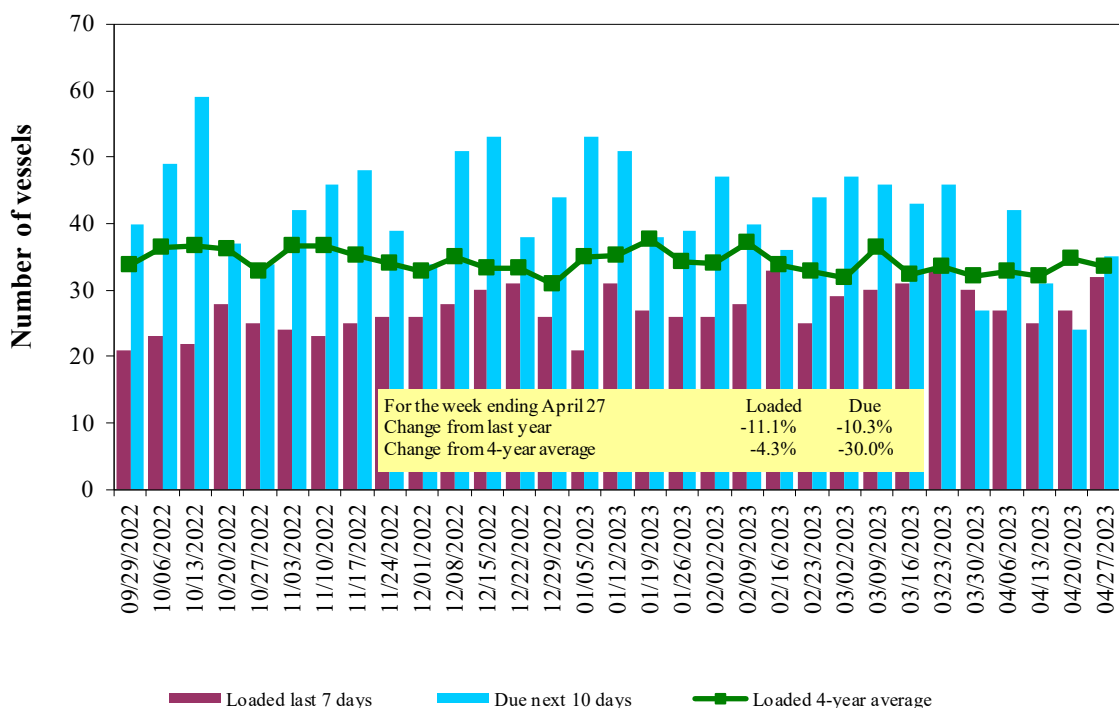
Weekly port region grain ocean vessel activity (number of vessels)

Date	Gulf			Pacific Northwest
	In port	Loaded	Due next	In port
		7-days	10-days	
4/27/2023	14	32	35	8
4/20/2023	20	27	24	9
2022 range	(14...61)	(18...39)	(28...62)	(5...23)
2022 average	30	28	44	13

Source: USDA, Agricultural Marketing Service.

Figure 15

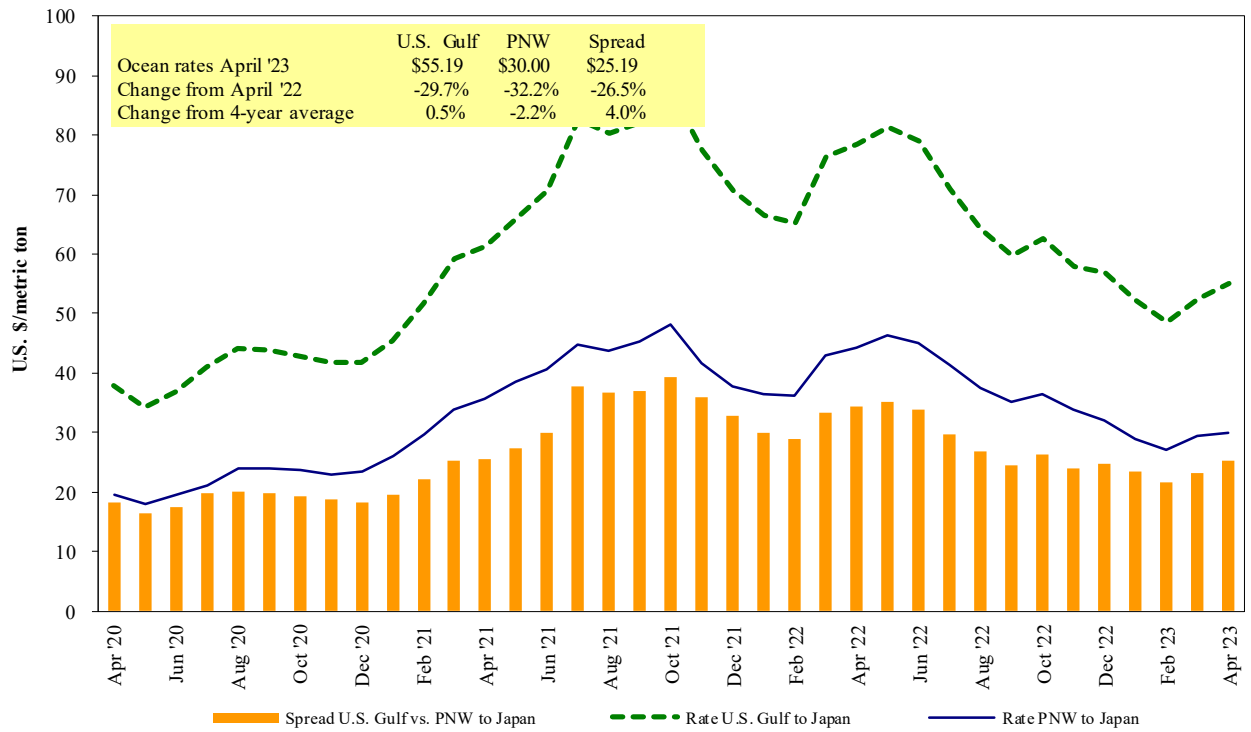
U.S. Gulf¹ vessel loading activity



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

Figure 16

Grain vessel rates, U.S. to Japan



Note: PNW = Pacific Northwest.

Source: O'Neil Commodity Consulting.

Table 17

Ocean freight rates for selected shipments, week ending 04/29/2023

Export region	Import region	Grain types	Loading date	Volume loads (metric tons)	Freight rate (US\$/metric ton)
U.S. Gulf	Japan	Heavy grain	May 2, 2023	50,000	56.70
U.S. Gulf	Japan	Heavy grain	May 1, 2023	50,000	54.80
U.S. Gulf	Japan	Heavy grain	Nov 1/10, 2022	50,000	79.25
U.S. Gulf	S. China	Corn	Aug 1/10, 2022	68,000	71.00
U.S. Gulf	Kenya	Sorghum	Feb 15/25, 2023	22,820	63.30*
U.S. Gulf	Djibouti	Wheat	Nov 5/15, 2022	22,500	102.88*
PNW	N. China	Heavy grain	Apr 21/27, 2023	63,000	28.00
PNW	N. China	Heavy grain	May 1/4, 2023	66,000	29.00
WC US	Japan	Wheat	Feb 1/Mar 1, 2023	34,500	47.75
Brazil	S. Korea	Heavy grain	Jun 15/Jul 15, 2023	68,000	45.15
Brazil	China	Heavy grain	May 5/10	65,000	36.50
Brazil	N. China	Heavy grain	Apr 21/30, 2023	66,000	40.60
Brazil	Vietnam	Heavy grain	Apr 11/29, 2023	66,000	37.00
Australia	Vietnam	Heavy grain	Feb 24/Apr 9, 2023	60,000	20.80

*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;

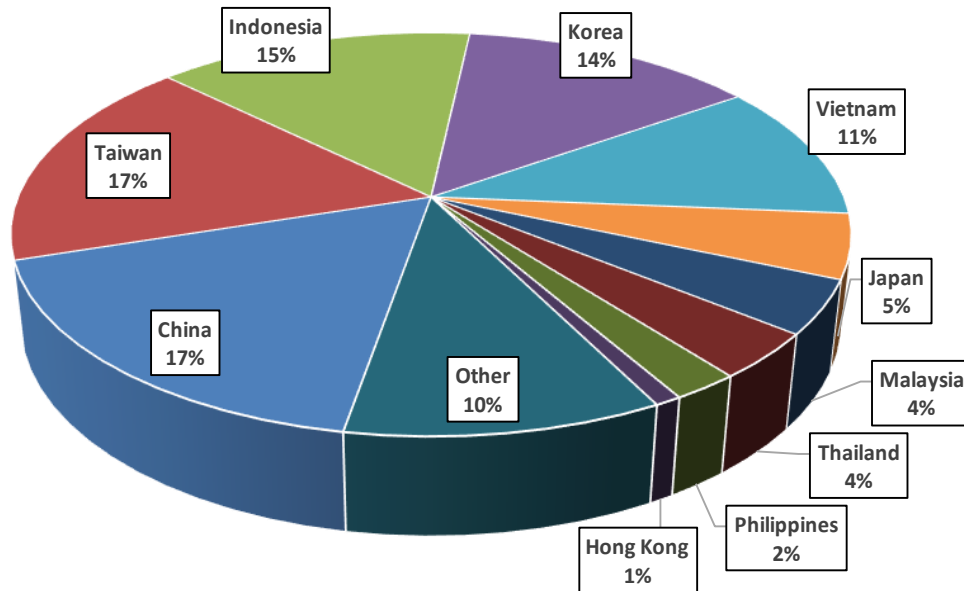
op = option.

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 17

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

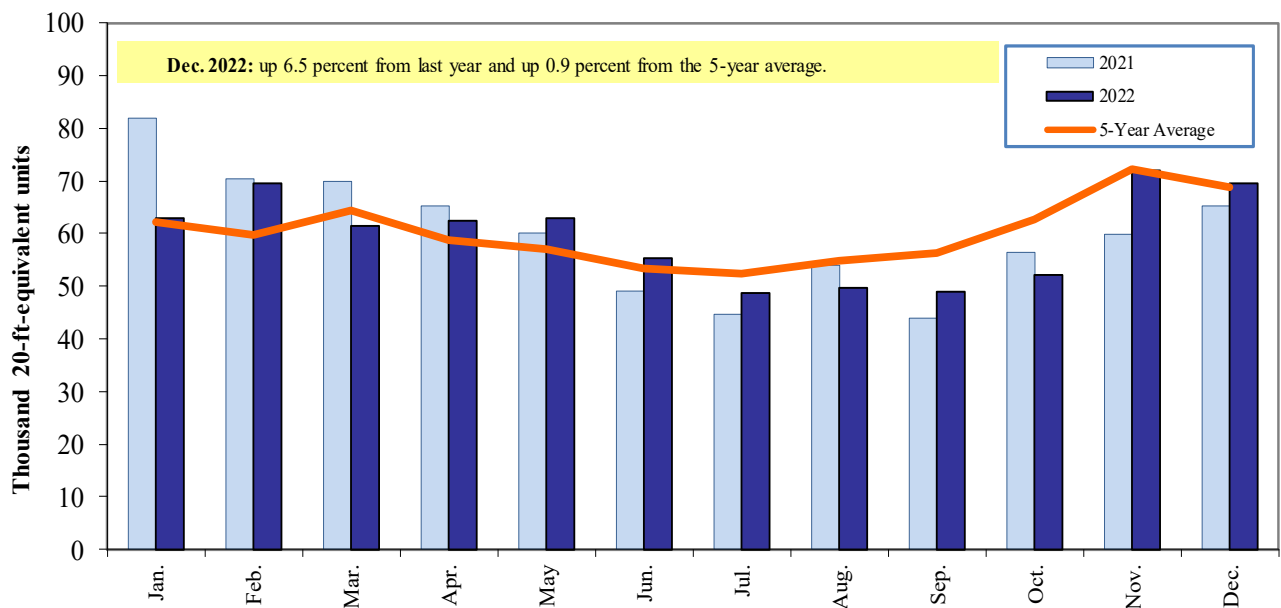


Note: The following Harmonized Tariff Codes are used to calculate containerized grains movements: '1001', '100190', '1002', '100200', '1003', '100300', '1004', '100400', '1005', '100590', '1007', '100700', '110100', '1102', '110220', '110290', '1201', '120100', '120190', '120810', '230210', '230310', '230330', '2304', and '230990'.

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

Figure 18

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', '1003', '100300', '1004', '100400', '1005', '100590', '1007', '100700', '110100', '1102', '110220', '110290', '1201', '120100', '120190', '120810', '230210', '230310', '230330', '2304', and '230990'.

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

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