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 January 19, 2023

WEEKLY HIGHLIGHTS

Barge Rates Continue Falling as Mississippi River Conditions Improve

For the week of January 10, the barge rate near St. Louis was 541 percent above tariff ($21.59/ton), down 25 percent from last week and down 20 percent from the same week last year (**GTR table 8**). This was the first time since the week of September 9, 2022, that the barge rate was below its same period last year. The current barge rate is 80 percent lower than the all-time peak of 2,653 percent above tariff ($105.85/ton) during the week of October 11, 2022. The 3-month forward barge rate dropped 7 percent from last week to 422 percent above tariff ($16.84/ton), but remains 35 percent higher than last year. The falling rates reflect improved navigation conditions on the Mississippi River System (MSR). Increased precipitation on portions of the river, the completion of harvest, and increased draft sizes (in most places) have all helped to normalize the system. The area between Cairo, IL, and St. Louis, MO, will need more precipitation to maintain current water levels in the Upper Mississippi River, but there, too, navigation conditions have improved.

GAO Publishes Report on Precision Scheduled Railroading

On December 23, the Government Accountability Office (GAO) issued a report, *Freight Rail: Information on Precision-Scheduled Railroading* (PSR). This report describes stakeholder views of the effects of PSR on freight rail safety and service. While observing there is no single definition of PSR, GAO characterizes it as an operating approach with fewer railroad workers, fewer and longer trains, and fewer assets (e.g., railcars, locomotives, and facilities) than traditional railroad operations. Railroads emphasize the necessity of PSR for increasing "efficiency and reliability" of rail service, but shippers cite "reduced frequency and reliability." According to the *Freight Rail* report, the Surface Transportation Board (STB) maintains that the effects of PSR-associated changes are unclear, and the report highlights STB's various efforts to address concerns regarding poor rail service.

Diesel Price Falls 3.4 Cents

After rising 4.6 cents per gallon for the week ending January 2, the average **diesel fuel price** dropped again. For the week ending January 9, the U.S. average diesel fuel price fell to $4.549 per gallon, down 3.4 cents from the previous week, but still up 89.2 cents from the same week last year. In the Midwest, the diesel price dropped to $4.390, down 3.3 cents per gallon from the previous week, but 86.8 cents above the same price last year. According to the recent Energy Information Administration (EIA) forecast, U.S. refining margins for diesel will fall 20 percent in 2023 and fall 38 percent in 2024. EIA also forecasts retail diesel prices to average $4.20 per gallon in 2023, down 16 percent from 2022. In 2024, EIA forecasts diesel prices will continue to fall and will average $3.70 per gallon.

Port NOLA To Build $1.8 Billion Container Facility on LMR

The Port of New Orleans (Port NOLA) recently secured $800 million of private investments toward the $1.8 billion Louisiana International Terminal project on the Lower Mississippi River (LMR). Currently in the design phase, the project is slated to begin construction in 2025 and estimated to open in 2028. Capable of handling 2 million 20-foot equivalent units (TEUs) annually, the terminal will include a 350-acre container facility with a 3,500-linear-foot wharf on more than 1,000 acres. Via the 50-foot-deep LMR Ship Channel, the terminal will serve vessels of all sizes (including ultra-large container ships). The depth of the channel will help vessels avoid height restrictions from bridges up the river. In addition to private investments, the terminal's construction will be supported by commitments from Port NOLA and State and Federal funding.

Snapshots by Sector

Export Sales

For the week ending December 29, **unshipped balances** of wheat, corn, and soybeans for marketing year (MY) 2022/23 totaled 31.70 million metric tons (mmt), down 25 percent from the same time last year and down 4 percent from last week. Net **corn export sales** for MY 2022/23 were 0.319 mmt, down 59 percent from last week. Net **soybean export sales** were 0.721 mmt, up 2 percent from last week. Net weekly **wheat export sales** were 0.047 mmt, down 90 percent from last week.

Rail

U.S. Class I railroads originated 18,383 **grain carloads** during the week ending December 31. This was a 1-percent increase from the previous week, 7 percent fewer than last year, and 8 percent fewer than the 3-year average.

Average January shuttle **secondary railcar bids/offers** (per car) were $1,007 above tariff for the week ending January 5. This was $196 less than last week and $1,752 lower than this week last year.

Barge

For the week ending January 7, **barged grain movements** totaled 354,700 tons. This was 12 percent lower than the previous week and 35 percent lower than the same period last year.

For the week ending January 7, 230 grain barges **moved down river**—30 fewer than last week. There were 625 grain barges **unloaded** in the New Orleans region, 21 percent fewer than last week.

Ocean

For the week ending January 5, 21 **oceangoing grain vessels** were loaded in the Gulf—32 percent fewer than the same period last year. Within the next 10 days (starting January 6), 53 vessels were expected to be loaded—15 percent fewer than the same period last year.

As of January 5, the rate for shipping a metric ton (mt) of grain from the U.S. Gulf to Japan was $54.00, 4 percent less than the available rate on December 15. The rate from the Pacific Northwest to Japan was $30.50 per mt, 3 percent less than December 15.

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Feature Article/Calendar

New Research Examines Viability of Inland Ports in the West

This article describes recent USDA-funded research from Cyrus Ramezani and Chris Carr[1] at California Polytechnic State University, San Luis Obispo. The abstract and a downloadable pdf of the full report are available here.

As a sizeable and growing component of grain export markets, containerized grain exports represented 10-11 percent (around 9.4 million metric tons) of all waterborne grain exports from 2019 to 2021—up from around 7 percent in 2010. By far the biggest ports for containerized grain exports are the Ports of Los Angeles and Long Beach in California, which comprise the San Pedro Bay (SPB) port complex. Combined, the Ports of Los Angeles and Long Beach accounted for 47 percent of waterborne, containerized grain exports from January to October of 2022, and 43 percent for the same 2021 period. Given their key role in handling container exports, these ports are critical to an efficient U.S. grains market.

Over the past 2 years, cargo flows through the SPB port complex have exceeded capacity, contributing to a nationwide supply chain crisis. Still, container volumes through SPB ports are expected to rise in coming years, alongside growth in both international trade and the use of mega-ships. Widely embraced to help solve seaport congestion in general, the development of inland ports has, likewise, long been seen as a solution to SPB's specific problems. Several inland port facilities have been proposed to complement SPB logistics. However, substantial hurdles to developing inland ports near the SPB complex have delayed the projects. Looking at several proposed inland port facilities, this article summarizes the authors' research into these facilities' potential roles in the SPB logistics infrastructure and their main challenges to development.

The Role for Inland Ports

The primary objective in developing inland ports is to streamline freight movement and reduce congestion and pollution at the seaports. Projects to directly expand the seaport—such as adding warehouse space or improving vessel, rail, or truck transportation systems—can achieve the same aims. However, expansion can cost more than building inland ports. Excessive traffic congestion, high land prices, and increased environmental and zoning regulations all make it costly to directly expand the seaport. Inland ports potentially offer a way to store and distribute products in lower cost and less congested areas, while enhancing seaports' productivity through improved intermodal logistics.

The ideal inland port location must balance a host of considerations, including the benefits of proximity to the seaport and population centers, proximity to food production and manufacturing areas, and the ability to generate enough right-size containers at the right times. Because the promise of lower transportation costs is a key factor in inland ports' feasibility, the ideal inland port location must also balance various transportation cost tradeoffs. Tradeoffs include issues of rates and competition, traffic congestion, equipment availability, and cost savings from rail versus truck.

Potential Inland Ports to Complement the SPB Ports

California. The authors first consider the potential for inland ports in the region around Los Angeles, called the Inland Empire, as well as in California's Central Valley, which stretches diagonally across the center of the State. The Inland Empire would be well suited to an inland port because of its proximity to large population centers and major logistics hubs. Additionally, the area is well connected, with two existing intermodal containerized rail services and access to several interstate highways. The region also processes high volumes of e-commerce, which the authors deem crucial for the economic viability of a new inland port. Another attractive inland port location, the Central Valley, would provide an inland port with access to a major agricultural production center. An inland port in the Central Valley could potentially reduce transportation and shipping costs and increase the number of empty containers near production and processing facilities.

Despite the manifold benefits the completed ports would bring, major regulatory barriers face any development of an inland port facility in the Inland Empire or Central Valley. The authors found that environmental

[1] Ramezani and Carr are professors at Orfalea College of Business at California Polytechnic State University, San Luis Obispo.

regulations are the most binding constraint for these California projects—as distinct from the proposed projects in other States, which have less environmental regulation. Additionally, the public input period, permitting processes, and zoning and land-use regulations can also delay development and increase project costs. The formidable red tape, in turn, can deter private investment in inland ports. The authors' analysis suggests the proposed California inland ports may take as long as 10 years to be operational.

Utah. The authors also examined the role of inland ports in States near California. For instance, their analysis suggests a proposed inland port in Salt Lake City, UT, which has secured key private investors and public funding, is likely to improve fluidity at SPB ports.[2] The facility's assets include population density (projected to rise from 3.3 million in 2020 to 5.8 million by 2065) and large, logistics-dependent industries. Salt Lake City is well connected to SPB ports, as well as the Port of Oakland, by both rail and highway. The region is served by Union Pacific Railroad (UP) and BNSF Railway (BNSF), as well as short line and switching railroads. By enabling truckers to pick up cargo locally, rather than from the SPB ports, the inland port would provide quick access to the Mountain West region and help alleviate congestion. Although the Utah inland port may not benefit grain exporters very much *directly*, it may help by streamlining operations of the SPB ports. Still, one fairly direct benefit for grain shippers may lie in the Utah inland port's use as a transload location for containerized grain en route to SPB ports.

Arizona and Nevada. The authors examined the strengths and weaknesses of other inland ports in Arizona and Nevada. Arizona has an inland port in operation and a potential facility under development. The Port of Tucson is a full-service inland port, rail yard, and intermodal facility. However, its rail service is limited to one railroad, and the volume of goods coming from SPB is relatively small (1.04 million tons). Inland Port Arizona, a new facility being developed near Phoenix, has the advantages of a large population base, growing warehouse and distribution centers, and access to major highways and rail. However, while served by both UP and BNSF, the facility is not on UP's mainline. The study found that recently proposed inland ports in Nevada face challenges from environmental opposition and have relatively small volumes originating from SPB ports.

Inland Ports and Policy Solutions: Keys to SPB Fluidity?

Rising demand for agricultural commodities and the growth in intermodal transportation have spurred containerized agricultural trade, including that which flows through SPB ports. While relieving the burden on seaports, inland ports could potentially bring empty containers closer to agricultural production centers, reducing transport costs and improving timely delivery to key export markets.

According to the authors, the proposed Central Valley inland port system could be key to overcoming many of the region's agricultural export challenges. In the nearer term, the authors found, inland ports outside of California, such as the Utah inland port—as well as direct improvements to seaport warehousing and transportation infrastructure—may help improve SPB fluidity. The authors conclude, "a funding program to support shipping bulk exports for transshipment within the proximity of ports could reduce overall transport costs. Alternatively, programs that increase the delivery of empty containers to food production areas, or more generally subsidies that reduce effective transport costs for agricultural exports, may be needed."

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[2] Utah Inland Port Authority, "Utah Inland Port Authority Secures $150 million for Public Infrastructure," December 30, 2021.

Grain Transportation Indicators

Table 1
Grain transport cost indicators[1]

	Truck	Rail		Barge	Ocean	
For the week ending		Non-Shuttle	Shuttle		Gulf	Pacific
01/11/23	305	333	302	381	242	216
01/04/23	308	333	313	492	250	223

[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 due to holiday.
Source: USDA, Agricultural Marketing Service.

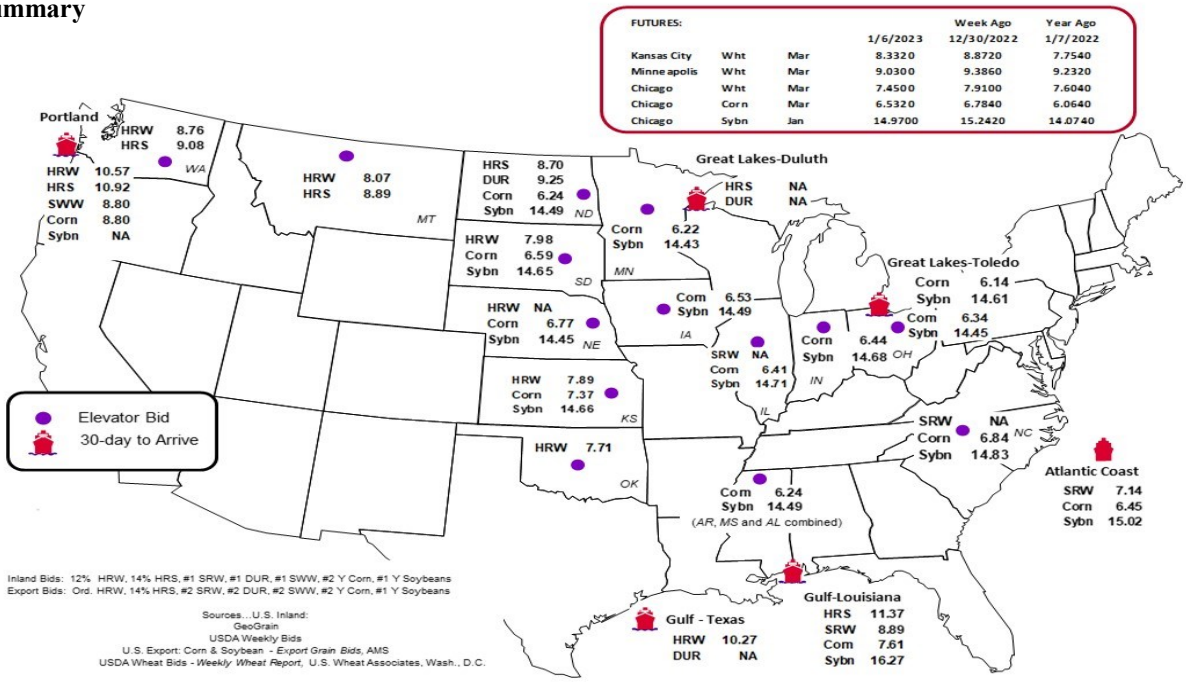
Table 2
Market Update: U.S. origins to export position price spreads ($/bushel)

Commodity	Origin–destination	1/6/2023	12/30/2022
Corn	IL–Gulf	-1.20	-1.24
Corn	NE–Gulf	-0.84	-0.82
Soybean	IA–Gulf	-1.78	-1.77
HRW	KS–Gulf	-2.38	n/a
HRS	ND–Portland	-2.22	n/a

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:	East		West			U.S. total	Canada	
12/31/2022	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	1,602	2,725	8,333	1,316	4,407	18,383	3,881	3,164
This week last year	1,681	1,787	9,477	1,514	5,237	19,696	2,114	3,248
2022 YTD	93,313	130,229	570,232	66,338	296,945	1,157,057	214,568	214,010
2021 YTD	93,935	120,620	609,890	64,818	318,002	1,207,265	209,559	242,533
2022 YTD as % of 2021 YTD	99	108	93	102	93	96	102	88
Last 4 weeks as % of 2021*	103	131	87	92	94	95	149	131
Last 4 weeks as % of 3-yr. avg.**	112	123	82	113	91	93	124	107
Total 2021	93,935	120,620	609,890	64,818	318,002	1,207,265	209,559	242,533

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

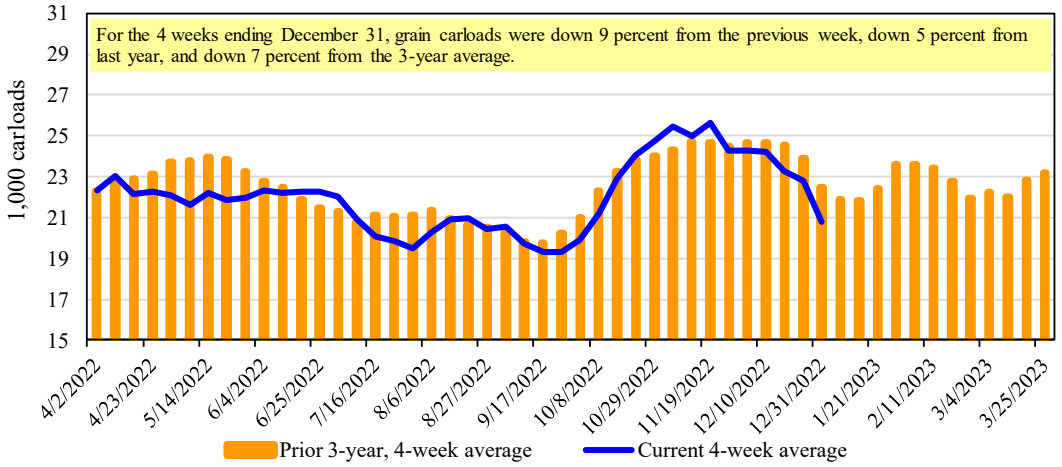
**The past 4 weeks as a percent of the same period from the prior 3-year average. YTD = year-to-date; avg. = average; yr. = year.

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

Source: Association of American Railroads.

Figure 2

Total weekly U.S. Class I railroad grain carloads



Source: Association of American Railroads.

Table 4

Railcar auction offerings[1] ($/car)[2]

For the week ending:		Delivery period							
1/5/2023		Mar-23	Mar-22	Apr-23	Apr-22	May-23	May-22	Jun-23	Jun-22
BNSF[3]	COT grain units	n/a	0	n/a	0	n/a	n/a	n/a	n/a
	COT grain single-car	n/a	2	n/a	47	n/a	n/a	n/a	n/a
UP[4]	GCAS/Region 1	n/a	no offer	n/a	n/a	n/a	n/a	n/a	n/a
	GCAS/Region 2	n/a	no offer	n/a	n/a	n/a	n/a	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.

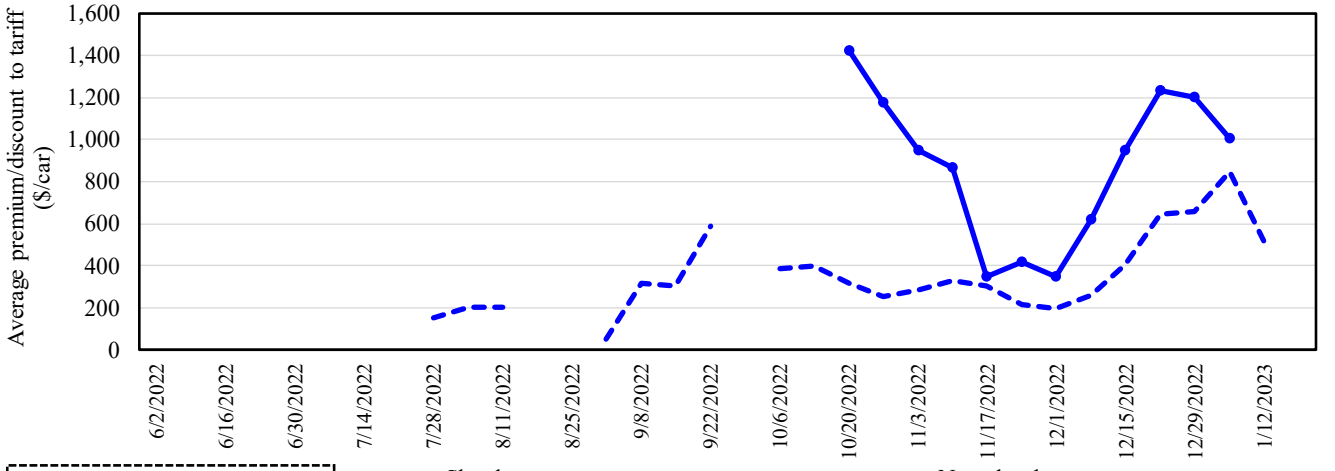
Region 1 includes: AR, IL, LA, MO, NM, OK, TX, WI, and Duluth, MN.

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 January 2023

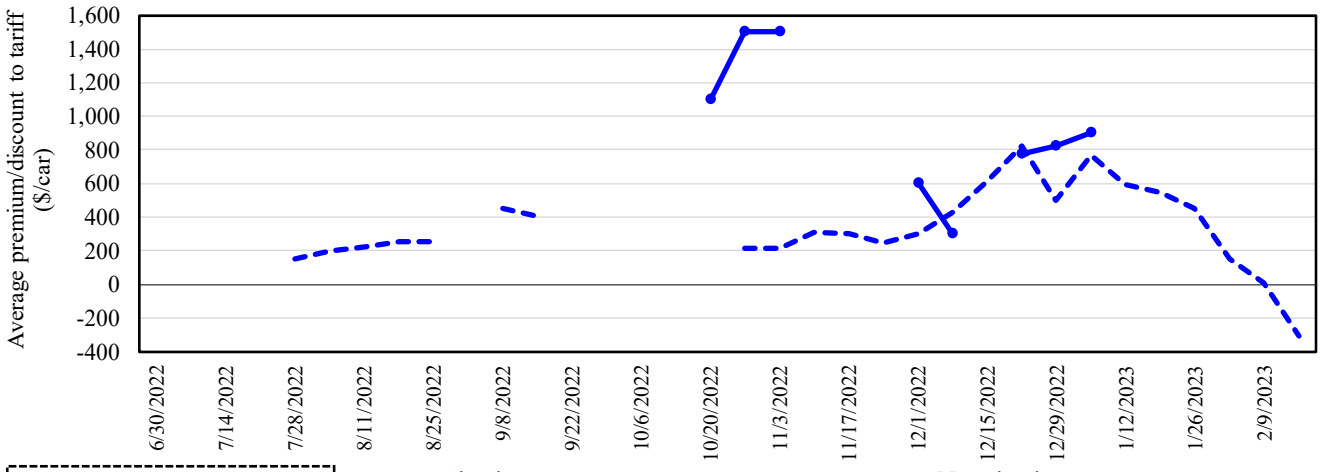


1/5/2023	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$513	$1,500

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers fell $196 this week and are $419 below the peak.

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

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



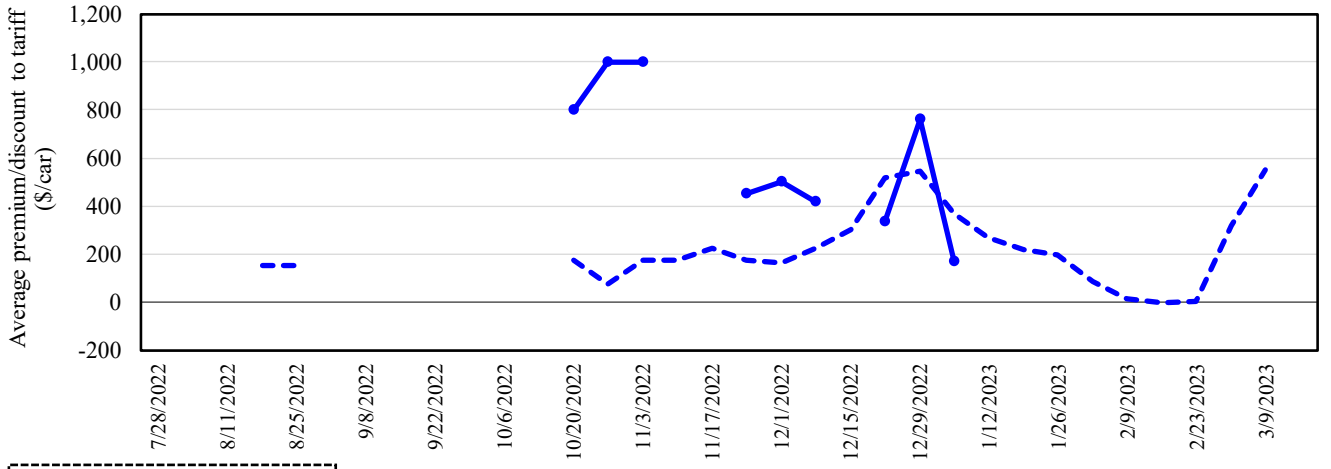
1/5/2023	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$308	$1,500

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers rose $79 this week and are $596 below the peak.

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

Figure 5

Secondary market bids/offers for railcars to be delivered in March 2023



1/5/2023	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$167	n/a

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers fell $596 this week and are $833 below the peak.

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

Table 5

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

	For the week ending: 1/5/2023	Delivery period					
		Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23
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 2022	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 2022	n/a	n/a	n/a	n/a	n/a	n/a
Shuttle	**BNSF-GF**	**513**	**308**	**167**	**n/a**	**(150)**	**n/a**
	Change from last week	(793)	(517)	(158)	n/a	0	n/a
	Change from same week 2022	(1,870)	(1,642)	(696)	n/a	(88)	n/a
	UP-Pool	**1,500**	**1,500**	**n/a**	**n/a**	**n/a**	**n/a**
	Change from last week	400	n/a	n/a	n/a	n/a	n/a
	Change from same week 2022	(1,633)	(650)	n/a	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 6

Tariff rail rates for unit and shuttle train shipments[1]

January 2023	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	$324	$39.91	$1.09	4
	Grand Forks, ND	Duluth-Superior, MN	$3,858	$152	$39.82	$1.08	9
	Wichita, KS	Los Angeles, CA	$7,490	$780	$82.13	$2.24	11
	Wichita, KS	New Orleans, LA	$4,600	$570	$51.34	$1.40	7
	Sioux Falls, SD	Galveston-Houston, TX	$7,226	$641	$78.12	$2.13	10
	Colby, KS	Galveston-Houston, TX	$4,850	$624	$54.36	$1.48	7
	Amarillo, TX	Los Angeles, CA	$5,121	$868	$59.48	$1.62	8
Corn	Champaign-Urbana, IL	New Orleans, LA	$4,000	$644	$46.12	$1.17	7
	Toledo, OH	Raleigh, NC	$8,551	$705	$91.92	$2.33	9
	Des Moines, IA	Davenport, IA	$2,655	$136	$27.72	$0.70	8
	Indianapolis, IN	Atlanta, GA	$6,593	$530	$70.73	$1.80	9
	Indianapolis, IN	Knoxville, TN	$5,564	$343	$58.66	$1.49	9
	Des Moines, IA	Little Rock, AR	$4,250	$401	$46.18	$1.17	11
	Des Moines, IA	Los Angeles, CA	$6,130	$1,167	$72.46	$1.84	13
Soybeans	Minneapolis, MN	New Orleans, LA	$3,856	$1,001	$48.23	$1.31	19
	Toledo, OH	Huntsville, AL	$7,037	$503	$74.87	$2.04	8
	Indianapolis, IN	Raleigh, NC	$7,843	$715	$84.99	$2.31	10
	Indianapolis, IN	Huntsville, AL	$5,689	$339	$59.87	$1.63	9
	Champaign-Urbana, IL	New Orleans, LA	$4,865	$644	$54.71	$1.49	9
Shuttle train							
Wheat	Great Falls, MT	Portland, OR	$4,393	$449	$48.08	$1.31	13
	Wichita, KS	Galveston-Houston, TX	$4,311	$349	$46.28	$1.26	4
	Chicago, IL	Albany, NY	$7,090	$666	$77.02	$2.10	10
	Grand Forks, ND	Portland, OR	$6,051	$775	$67.79	$1.84	13
	Grand Forks, ND	Galveston-Houston, TX	$5,399	$807	$61.63	$1.68	15
	Colby, KS	Portland, OR	$5,923	$1,023	$68.98	$1.88	6
Corn	Minneapolis, MN	Portland, OR	$5,660	$944	$65.58	$1.67	18
	Sioux Falls, SD	Tacoma, WA	$5,620	$864	$64.39	$1.64	17
	Champaign-Urbana, IL	New Orleans, LA	$4,170	$644	$47.80	$1.21	13
	Lincoln, NE	Galveston-Houston, TX	$4,360	$504	$48.30	$1.23	16
	Des Moines, IA	Amarillo, TX	$4,670	$504	$51.38	$1.31	11
	Minneapolis, MN	Tacoma, WA	$5,660	$936	$65.51	$1.66	18
	Council Bluffs, IA	Stockton, CA	$5,580	$968	$65.03	$1.65	18
Soybeans	Sioux Falls, SD	Tacoma, WA	$6,350	$864	$71.64	$1.95	15
	Minneapolis, MN	Portland, OR	$6,400	$944	$72.93	$1.98	16
	Fargo, ND	Tacoma, WA	$6,250	$769	$69.70	$1.90	14
	Council Bluffs, IA	New Orleans, LA	$5,095	$742	$57.97	$1.58	9
	Toledo, OH	Huntsville, AL	$5,277	$503	$57.39	$1.56	11
	Grand Island, NE	Portland, OR	$5,730	$1,048	$67.31	$1.83	15

[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 7

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

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

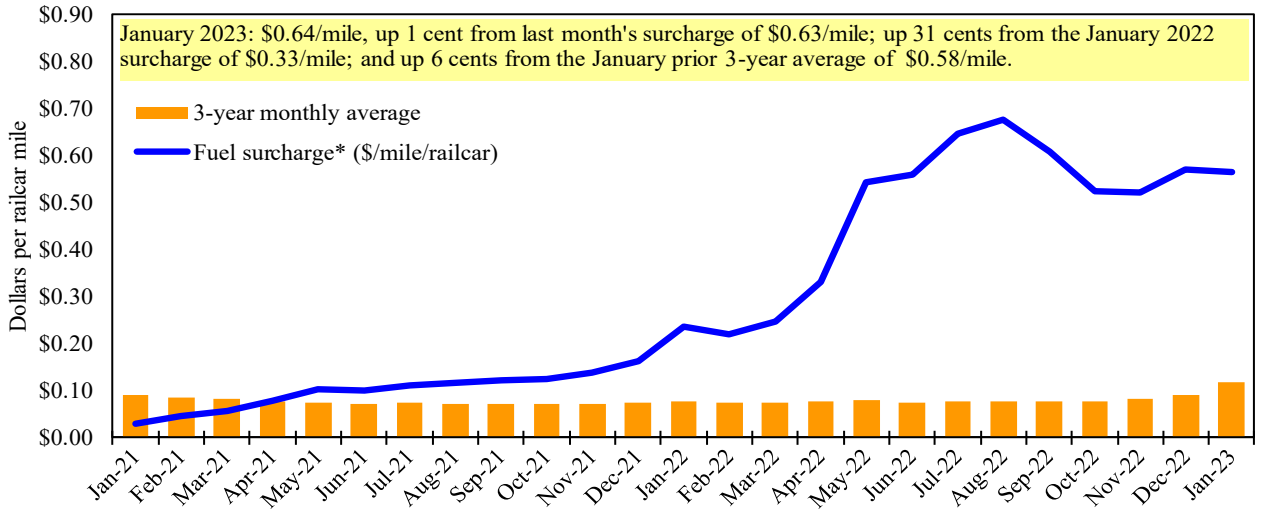
[5] As of January 1, 2022, both BNSF and Union Pacific changed their billing and reporting of rates to Mexico.

As we incorporate the change, Table 8 updates will be delayed.

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

Figure 6

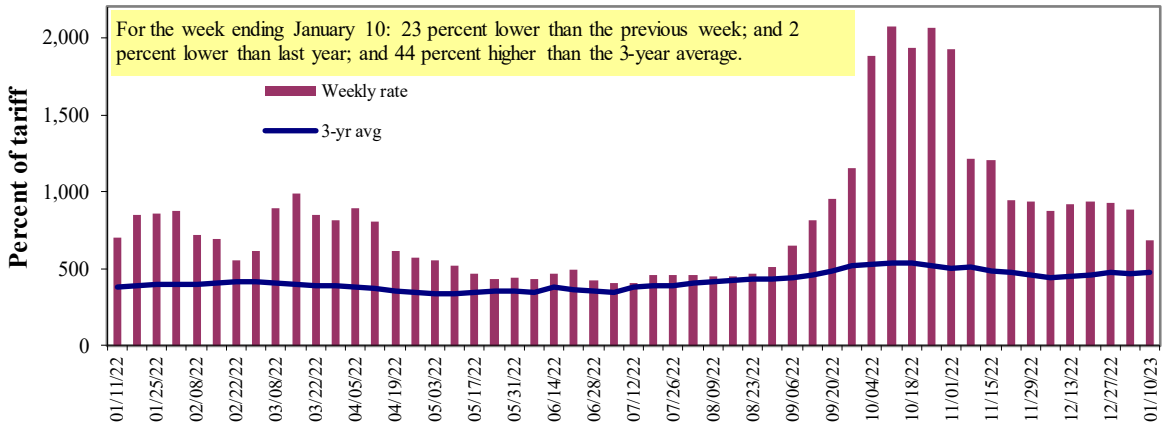
Railroad fuel surcharges, North American weighted average[1]



[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 7
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 8
Weekly barge freight rates: Southbound only

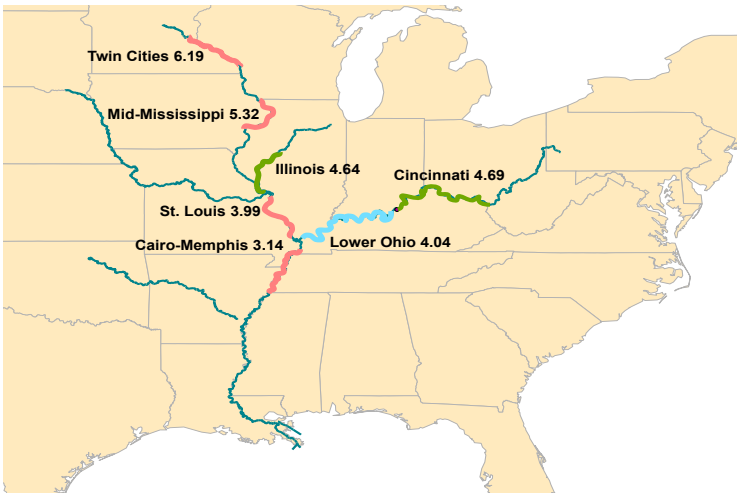
		Twin Cities	Mid-Mississippi	Lower Illinois River	St. Louis	Cincinnati	Lower Ohio	Cairo-Memphis
Rate[1]	1/10/2023	-	-	684	541	594	594	444
	1/3/2023	-	-	886	725	741	741	545
$/ton	1/10/2023	-	-	31.74	21.59	27.86	24.00	13.94
	1/3/2023	-	-	41.11	28.93	34.75	29.94	17.11
Current week % change from the same week:								
	Last year	-	-	-2	-20	-14	-14	-5
	3-year avg. [2]	-	-	44	39	43	43	34
Rate[1]	February	-	-	608	475	541	541	396
	April	567	520	508	422	455	455	369

[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 8
Benchmark tariff rates

Calculating barge rate per ton:
(Rate * 1976 tariff benchmark rate per ton)/100

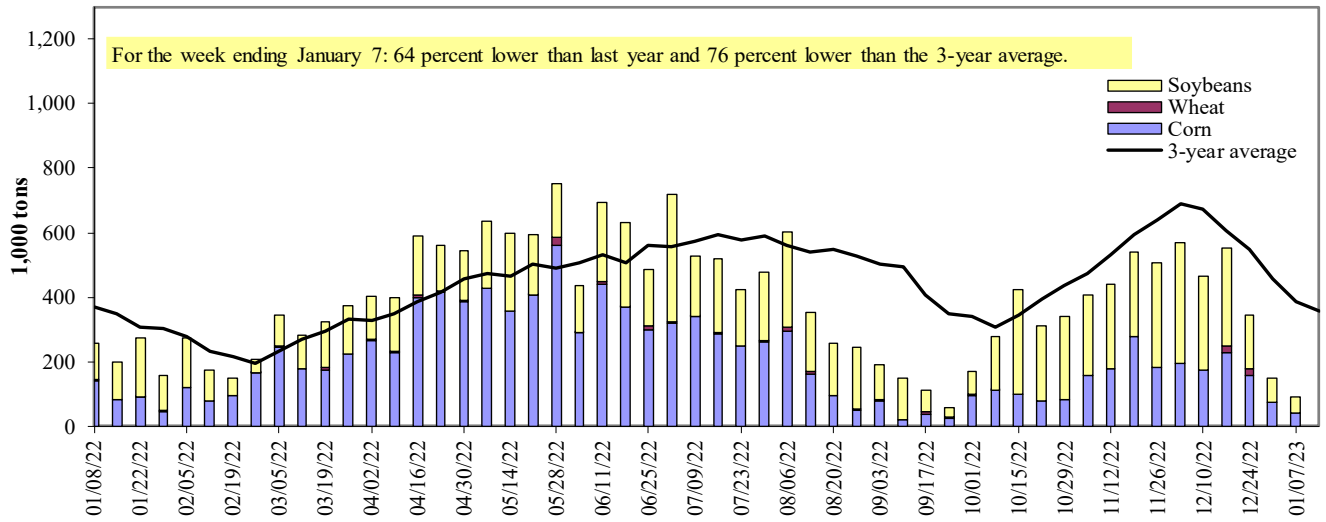
Select applicable index from market quotes are included in tables on this page. The 1976 benchmark rates per ton are provided in map.



Map Credit: USDA, Agricultural Marketing Service

Figure 9

Barge movements on the Mississippi River[1] (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

Barge grain movements (1,000 tons)

For the week ending 01/07/2023	Corn	Wheat	Soybeans	Other	Total
Mississippi River					
Rock Island, IL (L15)	0	0	0	0	0
Winfield, MO (L25)	10	0	16	0	26
Alton, IL (L26)	54	3	72	12	141
Granite City, IL (L27)	40	0	52	12	104
Illinois River (La Grange)	39	3	72	0	114
Ohio River (Olmsted)	57	0	190	0	247
Arkansas River (L1)	0	1	3	0	4
Weekly total - 2023	96	1	245	12	355
Weekly total - 2022	267	21	247	9	545
2023 YTD[1]	96	1	245	12	355
2022 YTD[1]	267	21	247	9	545
2023 as % of 2022 YTD	36	7	99	128	65
Last 4 weeks as % of 2022[2]	65	82	101	52	83
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.

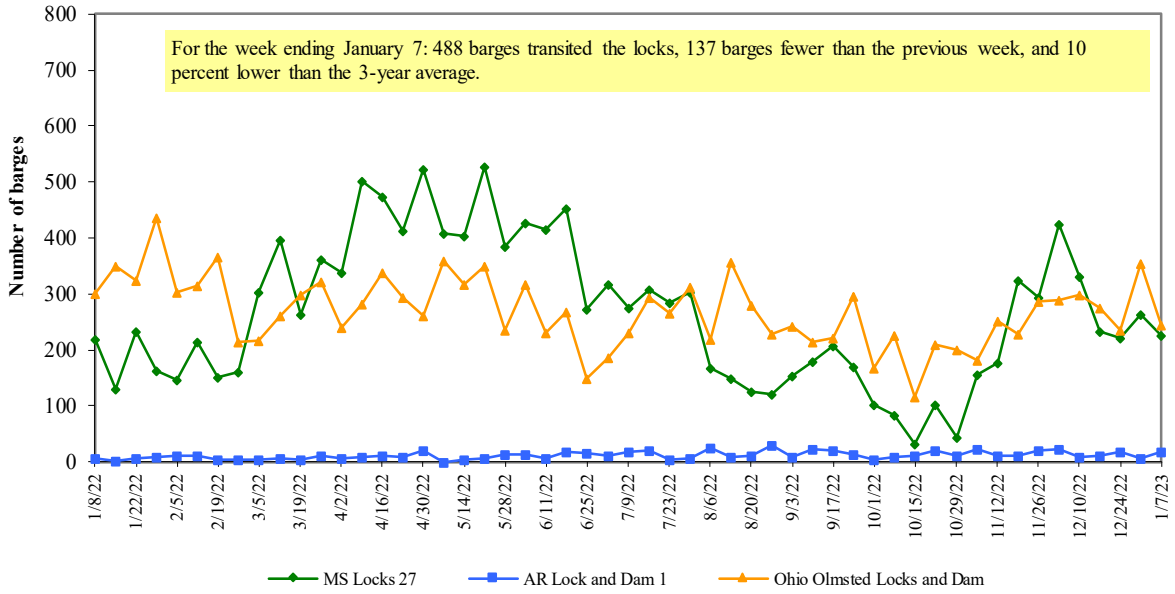
[2] As a percent of same period in 2022.

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 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

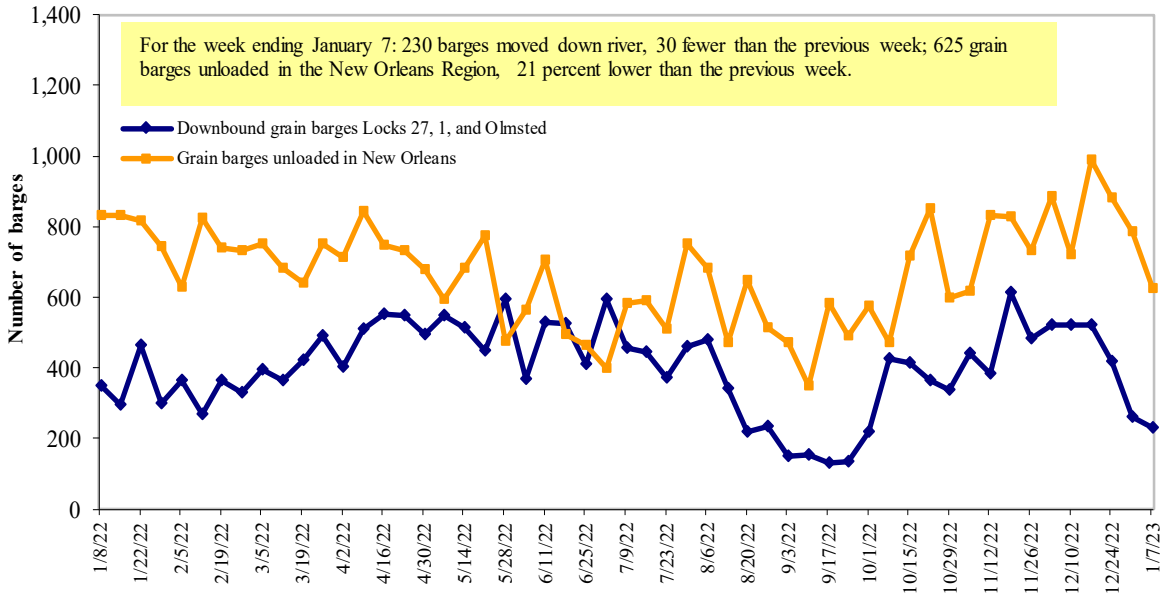


Note: The U.S. Army Corps of Engineers has recently migrated its lock and vessel database and has noted the latest data may be revised in coming weeks.

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 1/9/2023 (U.S. $/gallon)

Region	Location	Price	Change from Week ago	Change from Year ago
I	East Coast	4.812	-0.040	1.167
	New England	5.094	-0.024	1.467
	Central Atlantic	5.203	-0.032	1.395
	Lower Atlantic	4.641	-0.048	1.094
II	Midwest	4.390	-0.033	0.868
III	Gulf Coast	4.223	-0.044	0.839
IV	Rocky Mountain	4.697	-0.033	1.031
V	West Coast	5.080	-0.011	0.663
	West Coast less California	4.760	-0.005	0.758
	California	5.448	-0.018	0.666
Total	United States	4.549	-0.034	0.892

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

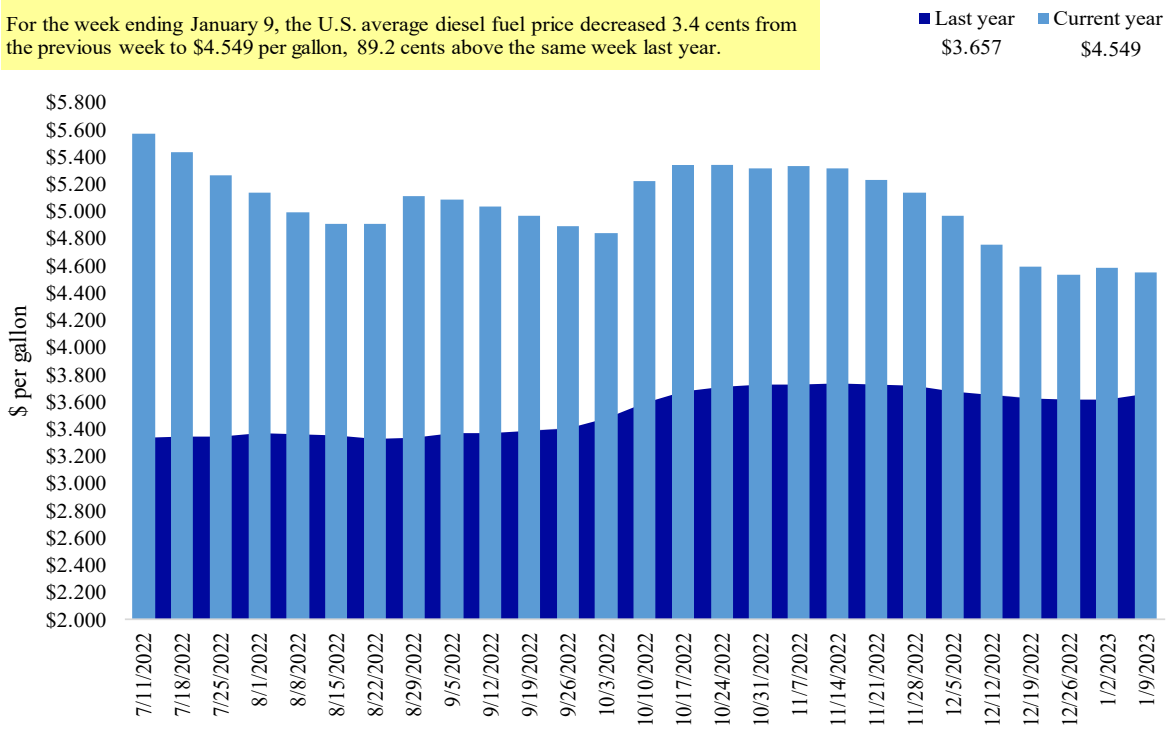
Note: On June 13, the Energy Information Administration implemented a new methodology to estimate weekly on-highway diesel fuel prices.

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

Figure 12

Weekly diesel fuel prices, U.S. average

For the week ending January 9, the U.S. average diesel fuel price decreased 3.4 cents from the previous week to $4.549 per gallon, 89.2 cents above the same week last year.



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

Source: U.S. Department of Energy, Energy Information Administration, Retail On-Highway Diesel Prices.

Grain Exports

Table 11

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]									
12/29/2022	942	632	1,350	1,267	117	4,308	11,744	15,645	31,696
This week year ago	2,095	690	1,221	807	21	4,835	26,344	11,088	42,267
Cumulative exports-marketing year[2]									
2022/23 YTD	3,174	1,748	3,173	2,417	150	10,662	9,997	28,184	48,843
2021/22 YTD	4,226	1,622	3,019	2,069	113	11,049	14,653	30,614	56,315
YTD 2022/23 as % of 2021/22	75	108	105	117	133	97	68	92	87
Last 4 wks. as % of same period 2021/22	45	90	111	150	516	88	47	154	80
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 importers[1] of U.S. corn

For the week ending 12/29/2022	Total commitments[2] 2022/23 current MY	2021/22 last MY	% change current MY from last MY	Exports[3] 3-yr. avg. 2019-21
		1,000 mt -		
Mexico	10663.2	12,025	(11)	15,227
China	3725	12,286	(70)	12,616
Japan	1728	3,961	(56)	10,273
Columbia	397	2,430	(84)	4,398
Korea	21	78	(74)	2,563
Top 5 importers	**16,533**	**30,781**	(46)	**45,077**
Total U.S. corn export sales	**21,741**	**40,997**	(47)	**56,665**
% of projected exports	41%	65%		
Change from prior week[2]	**319**	**256**		
Top 5 importers' share of U.S. corn export sales	76%	75%		80%
USDA forecast December 2022	**52,799**	**62,875**	(16)	
Corn use for ethanol USDA forecast, December 2022	**133,985**	**135,281**	(1)	

[1]Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2021/22; 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 13

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

For the week ending 12/29/2022	Total commitments[2] 2022/23 current MY	2021/22 last MY	% change current MY from last MY	Exports[3] 3-yr. avg. 2019-21
				- 1,000 mt -
China	26,117	23,785	10	27,283
Mexico	3,274	2,973	10	4,929
Egypt	752	1,860	(60)	3,553
Japan	1,474	1,276	16	2,266
Indonesia	636	711	(11)	2,116
Top 5 importers	**32,253**	**30,604**	5	**40,147**
Total U.S. soybean export sales	**43,829**	**41,702**	5	**54,231**
% of projected exports	79%	71%		
change from prior week[2]	**721**	**383**		
Top 5 importers' share of U.S. soybean export sales	74%	73%		**74%**
USDA forecast, December 2022	**55,722**	**58,801**	(5)	

[1]Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2021/22; 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 14

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

For the week ending 12/29/2022	Total Commitments[2] 2022/23 current MY	2021/22 last MY	% change current MY from last MY	Exports[3] 3-yr. avg. 2019-21
	1,000 mt -			- 1,000 mt -
Mexico	2,516	2,816	(11)	3,566
Philippines	1,672	2,397	(30)	2,985
Japan	1,719	1,873	(8)	2,453
China	681	848	(20)	1,537
Nigeria	663	1,595	(58)	1,528
Korea	1,005	978	3	1,459
Taiwan	603	713	(15)	1,106
Indonesia	299	66	355	711
Thailand	613	439	40	703
Colombia	412	489	(16)	621
Top 10 importers	**10,182**	**12,213**	(17)	**16,669**
Total U.S. wheat export sales	**14,970**	**15,883**	(6)	**22,763**
% of projected exports	71%	73%		
change from prior week[2]	**47**	**49**		
Top 10 importers' share of U.S. wheat export sales	68%	77%		73%
USDA forecast, December 2022	**21,117**	**21,798**	(3)	

[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 15

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

Port regions	For the week ending 01/05/23	Previous week*	Current week as % of previous	2023 YTD*	2022 YTD*	2023 YTD as % of 2022 YTD	Last 4-weeks as % of: Last year	Last 4-weeks as % of: Prior 3-yr. avg.	2022 total*
Pacific Northwest									
Wheat	104	0	n/a	104	83	125	136	54	9,836
Corn	66	67	98	66	94	70	76	85	9,614
Soybeans	211	144	146	211	212	99	70	81	14,178
Total	**381**	**211**	**180**	**381**	**389**	**98**	**80**	**74**	**33,628**
Mississippi Gulf									
Wheat	12	6	192	12	56	22	33	40	4,051
Corn	61	467	13	61	613	10	75	73	30,780
Soybeans	559	1,174	48	559	607	92	116	102	31,208
Total	**632**	**1,648**	**38**	**632**	**1,275**	**50**	**100**	**92**	**66,040**
Texas Gulf									
Wheat	0	20	0	0	47	0	66	60	3,421
Corn	0	0	n/a	0	0	n/a	132	122	648
Soybeans	0	54	0	0	0	n/a	n/a	88	685
Total	**0**	**73**	**0**	**0**	**47**	**0**	**139**	**77**	**4,754**
Interior									
Wheat	17	64	27	17	5	351	132	114	2,900
Corn	137	121	114	137	124	111	90	109	8,914
Soybeans	91	97	94	91	119	76	101	97	7,034
Total	**246**	**281**	**87**	**246**	**248**	**99**	**99**	**105**	**18,848**
Great Lakes									
Wheat	0	0	n/a	0	0	n/a	81	61	395
Corn	0	0	n/a	0	0	n/a	42	55	158
Soybeans	0	1	n/a	0	0	n/a	113	93	760
Total	**1**	**1**	**n/a**	**1**	**0**	**n/a**	**84**	**70**	**1,312**
Atlantic									
Wheat	0	0	n/a	0	4	0	0	0	168
Corn	5	0	n/a	5	7	62	86	257	302
Soybeans	70	71	99	70	9	769	167	168	2,857
Total	**75**	**71**	**105**	**75**	**21**	**356**	**160**	**169**	**3,327**
U.S. total from ports*									
Wheat	134	90	149	134	196	68	97	62	20,772
Corn	269	655	41	269	838	32	79	83	50,416
Soybeans	932	1,540	61	932	947	98	106	99	56,722
Total	**1,334**	**2,285**	**58**	**1,334**	**1,981**	**67**	**97**	**89**	**127,910**

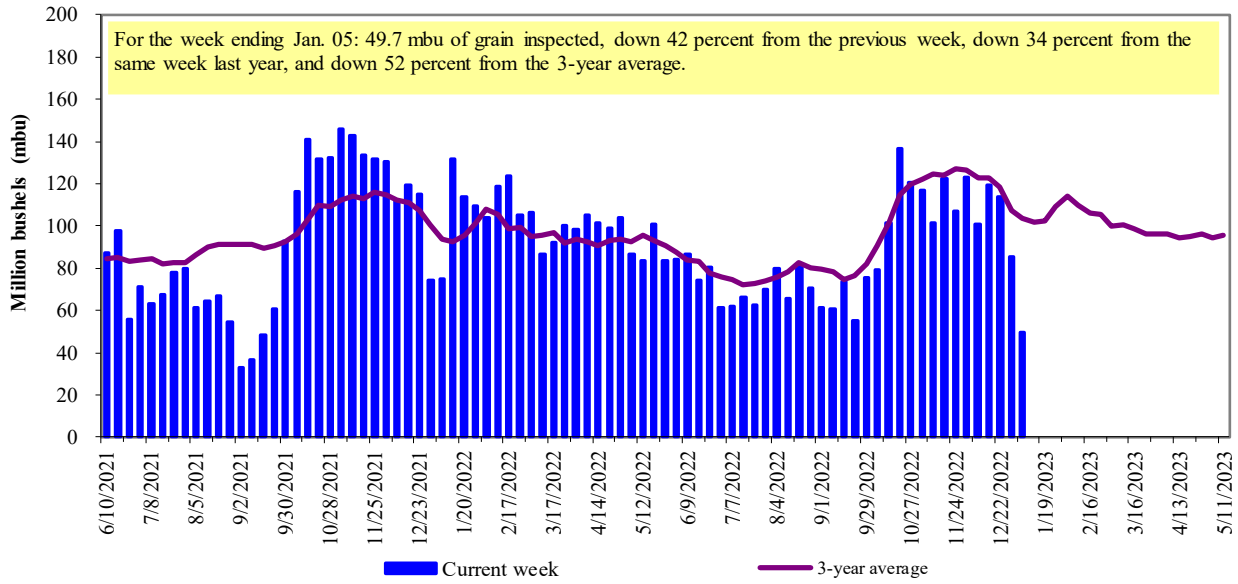
*Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

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)

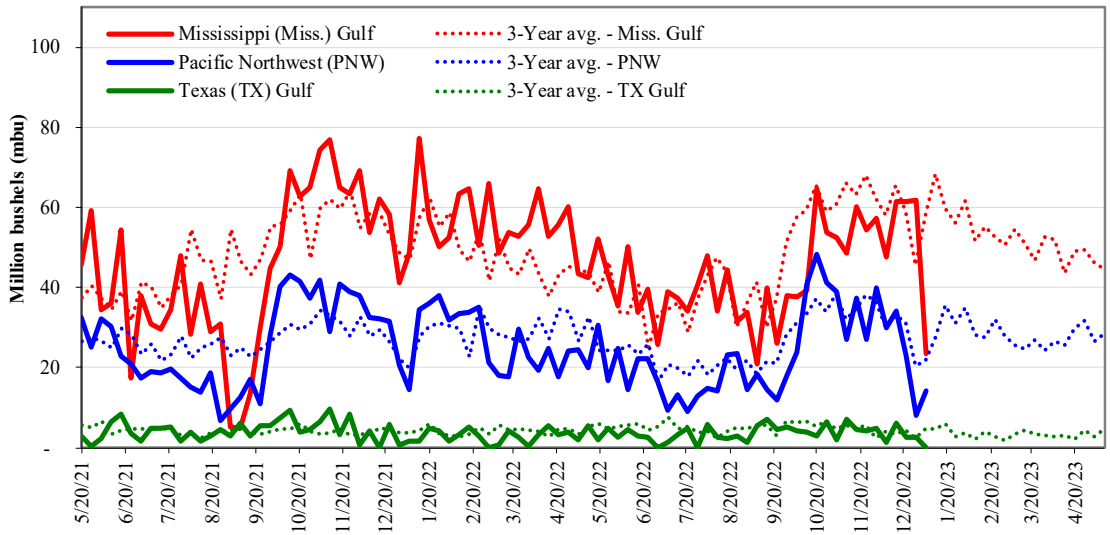


Note: 3-year average consists of 4-week running average.

Source: USDA, Federal Grain Inspection Service.

Figure 14

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



Week ending 01/05/23 inspections (mbu):	
MS Gulf:	23.4
PNW:	14.2
TX Gulf:	0.0

Percent change	MS Gulf	TX	U.S. Gulf	PNW
Last wk:	down 62	down 100	down 64	up 79
Last Year (same wk):	down 52	down 100	down 53	down 3
3-yr avg. (4-wk. mov. Avg):	down 59	down 100	down 61	down 47

Source: USDA, Federal Grain Inspection Service.

Table 16

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

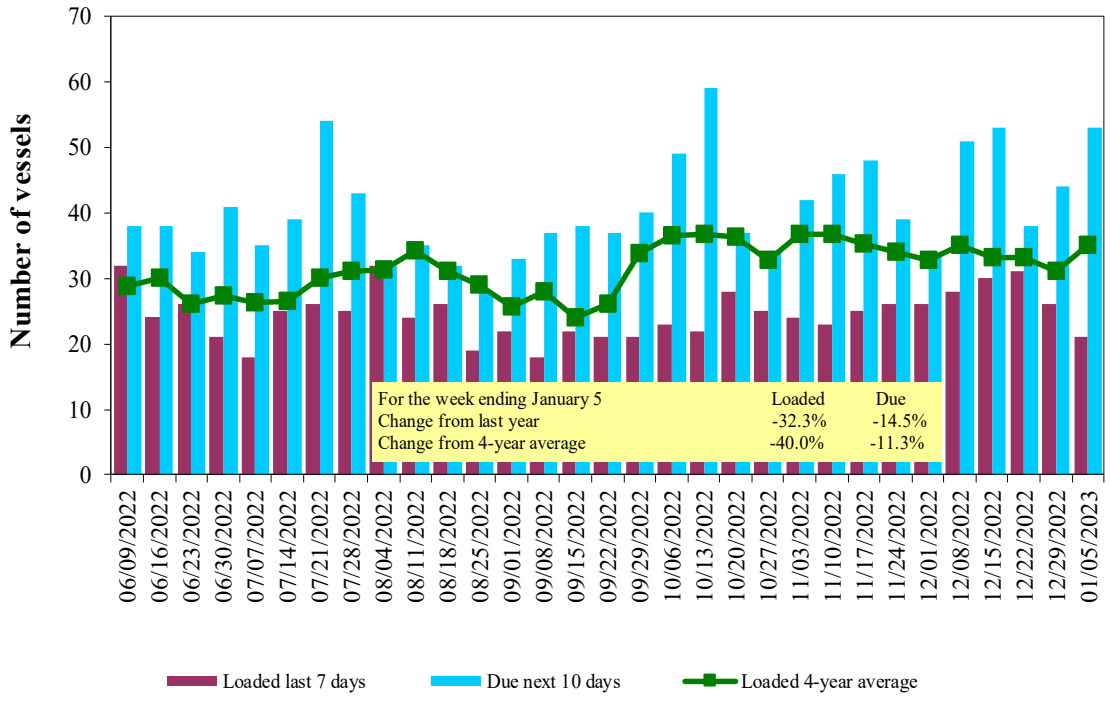
	Gulf			Pacific Northwest
Date	In port	Loaded 7-days	Due next 10-days	In port
1/5/2023	26	21	53	16
12/29/2022	27	26	44	12
2022 range	(14…61)	(18…39)	(28...62)	(5…23)
2022 average	30	28	44	13

Note: The data is voluntarily collected and may not be complete.

Source: USDA, Agricultural Marketing Service.

Figure 15

U.S. Gulf[1] vessel loading activity

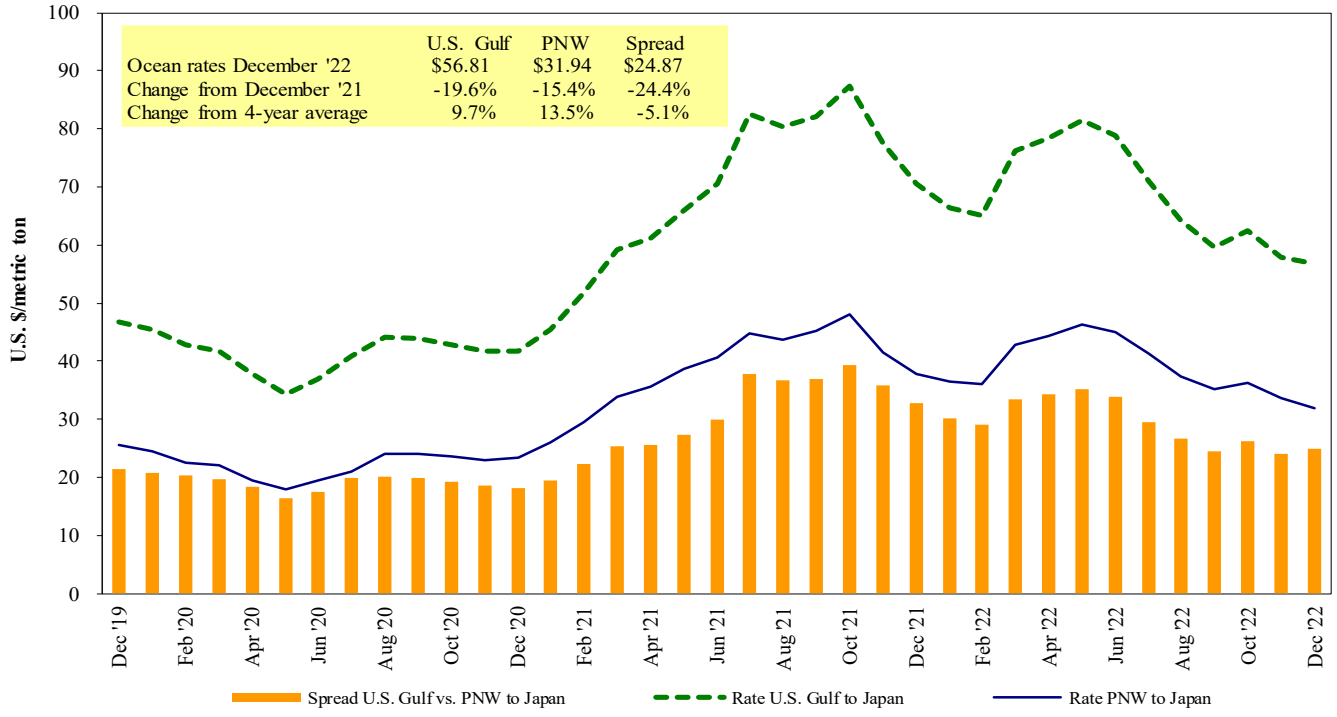


[1]U.S. Gulf includes Mississippi, Texas, and East Gulf.

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 01/07/2023

Export region	Import region	Grain types	Loading date	Volume loads (metric tons)	Freight rate (US$/metric ton)
U.S. Gulf	Japan	Heavy grain	Nov 1/10, 2022	50,000	79.25
U.S. Gulf	Japan	Heavy grain	Jul 20/30, 2022	50,000	81.50
U.S. Gulf	Japan	Heavy grain	Jun 1/10, 2022	50,000	89.65
U.S. Gulf	Japan	Heavy grain	May 1/20, 2022	50,000	78.90
U.S. Gulf	S. China	Corn	Aug 1/10, 2022	68,000	71.00
U.S. Gulf	Djibouti	Sorghum	Oct 5/15, 2022	13,920	94.08*
U.S. Gulf	Djibouti	Wheat	Nov 5/15, 2022	22,500	102.88*
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*
PNW	Yemen	Wheat	Jul 10/20, 2022	27,000	169.50*
Brazil	N. China	Heavy grain	Mar 18/27, 2022	64,000	56.85
Argentina	Taiwan	Corn	May 1/Jun, 2022	65,000	85.00

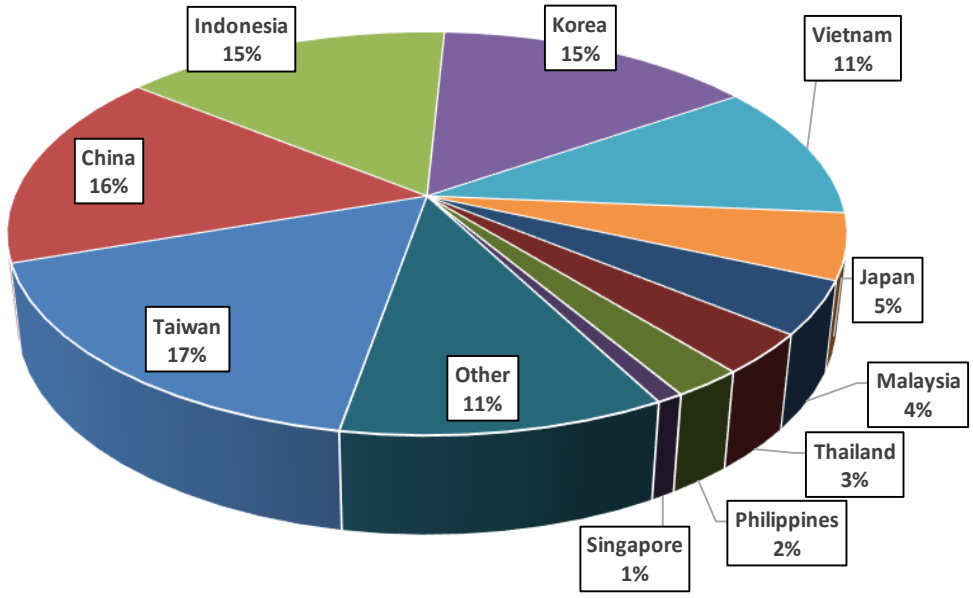
*50 percent of food aid from the United States is required to be shipped on U.S.-flag vessels.

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

Source: Maritime Research, Inc.

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

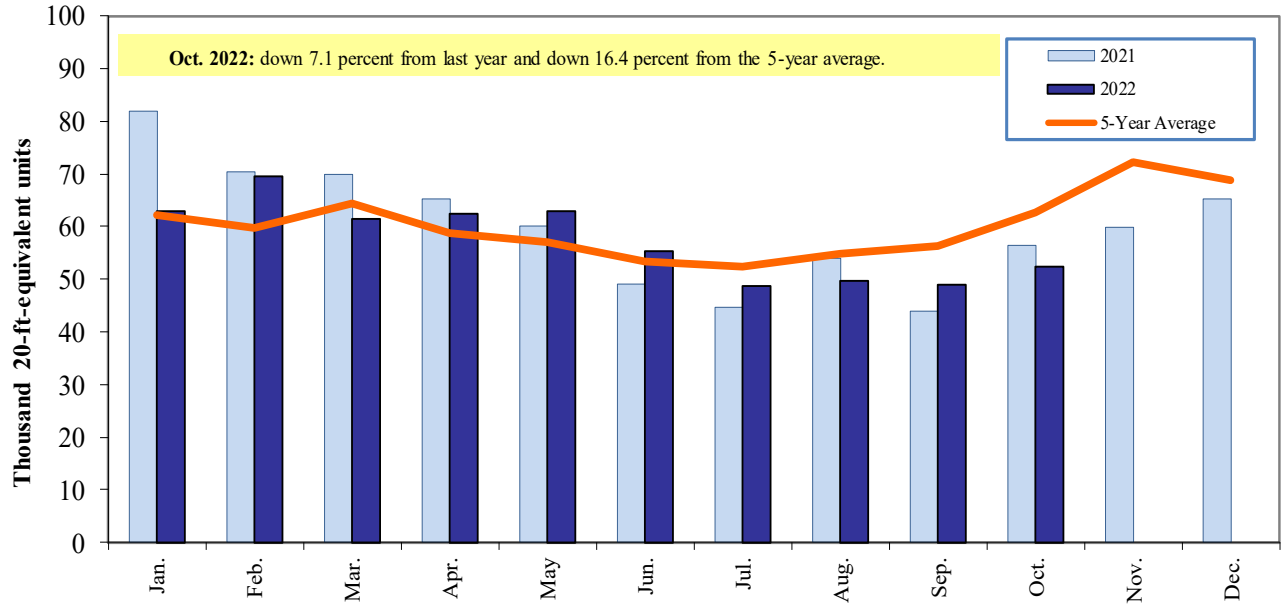
Figure 17
Top 10 destination markets for U.S. containerized grain exports, Jan-Oct 2022



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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