United States Department of Agriculture

Grain Transportation Report

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

Contact Us

January 20, 2022

Contents

The next release is January 27, 2022

WEEKLY HIGHLIGHTS

Barge Industry Reports Delays Due to Winter Weather

Severe winter weather has complicated shipping on many rivers. Freezing of the Mississippi River has continuously delayed the river's barge movements since early January. On the St. Louis-to-Cairo section of the Lower Mississippi, freezing and low-water conditions currently slow operations and require reduced tow sizes. On the Illinois River, since the second week of January, locks have required ice coupling (i.e., a way of connecting barges to one another with freezing water), and operators have reduced tow sizes there as well. On the Ohio River, barge movements have been delayed by highwater conditions in the Ohio Valley, as well as by snow and ice in Cincinnati and elsewhere on the upper part of the river. Since the second week of January (***GTR* table 9**), high spot barge rates have reflected these multiple, widespread logistical challenges. The barge industry is operating with extreme caution and preparing for unfavorable weather and water conditions for the rest of January.

USACE Work Plan Includes Funding for Mississippi River Lock and Dam 25

On January 19, the U.S. Army Corps of Engineers (USACE) announced its $22.81 billion plan to implement civil works studies, projects, and programs. The plan uses funding from the Infrastructure Investment and Jobs Act and the 2022 Disaster Relief Supplemental Appropriations Act. One newly funded $732 million project is to complete the design and construction of a 1,200-foot by 110-foot lock chamber for Mississippi River Lock and Dam 25 (near Winfield, MO). Adjacent to the existing 600-foot by 110-foot lock chamber, the new chamber will enable a typical 15-barge tow—transporting over 800,000 bushels of grain—to transit the lock in a single pass. The new single-pass process (30-45 minutes) will vastly improve the current double-pass process (2+ hours), which requires breaking each barge tow into two sections. This project is one of the seven authorized lock construction projects under USACE's Navigation and Ecosystem Sustainability Program (NESP). Lock and Dam 25 handles nearly all grain shipped on the Mississippi River from Illinois, Iowa, Minnesota, Missouri, and Wisconsin to export facilities near the Gulf of Mexico (on average, valued at over $3.6 billion annually over the past 3 years).

FMCSA Offers Financial Assistance for Implementing CDL programs

The U.S. Department of Transportation's (DOT) Federal Motor Carrier Safety Administration (FMCSA) is soliciting applications for fiscal year 2022 financial assistance for implementing commercial driver's license (CDL) programs. State and local governments and other eligible persons and organizations that support CDL program implementation are encouraged to apply. In identifying prospective aid recipients, FMCSA seeks programs that would further its strategic goals for CDL programs. The goals address areas of safety, economic strength and modernization, equity, climate and sustainability, and innovations for the future.

Snapshots by Sector

Export Sales

For the week ending January 6, **unshipped balances** of wheat, corn, and soybeans for marketing year 2021/22 totaled 41.4 million metric tons (mmt), down 16 percent from the same time last year, and down 2 percent from the previous week. Net **corn export sales** were 0.458 mmt, up 79 percent from the previous week. Net **soybean export sales** were 0.736 mmt, up 92 percent from the previous week. Net weekly **wheat export sales** were 0.265 mmt, up significantly from the previous week.

Rail

U.S. Class I railroads originated 21,952 **grain carloads** during the week ending January 8. This was a 11-percent increase from the previous week, 20 percent fewer than last year, and 1 percent fewer than the 3-year average.

Average January shuttle **secondary railcar** bids/offers (per car) were $1,588 above tariff for the week ending January 13. This was $1,171 less than last week and $1,113 more than this week last year. There were no non-shuttle bids/offers this week.

Barge

For the week ending January 15, **barged grain movements** totaled 491,988 tons. This was 10 percent less than the previous week and 46 percent less than the same period last year.

For the week ending January 15, 297 grain barges **moved down river**—53 fewer barges than the previous week. There were 830 grain barges unloaded in the New Orleans region, 2 barges fewer than last week.

Ocean

For the week ending January 13, 33 **oceangoing grain vessels** were loaded in the Gulf—down 23 percent from the same period last year. Within the next 10 days (starting January 14), 59 vessels were expected to be loaded—13 percent fewer than the same period last year.

As of January 3, the rate for shipping a metric ton (mt) of grain from the U.S. Gulf to Japan was $68.50. This was 3 percent less than the previous week. The rate from the Pacific Northwest to Japan was $37.50 per mt, 3 percent less than the previous week.

Fuel

For the week ending January 17, the U.S. average **diesel fuel price** increased 6.8 cents from the previous week to $3.725 per gallon, 102.9 cents above the same week last year. At $3.603 per gallon, the average Midwest diesel price increased 12.6 cents in the past 2 weeks.

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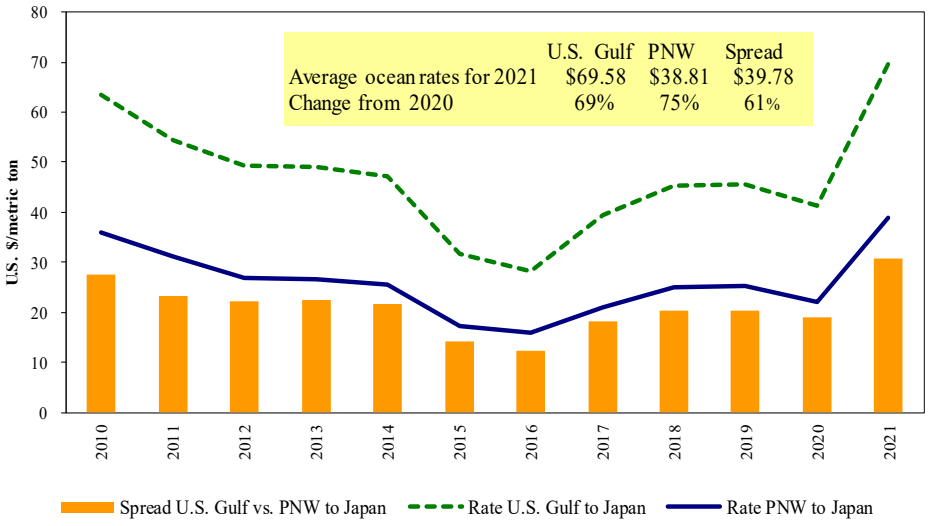
Feature Article/Calendar

Average Ocean Freight Rates Rose in 2021, Despite Fourth-Quarter Dip

Although ocean freight rates for shipping bulk items, including grain dropped slightly from third quarter to fourth quarter 2021 (quarter to quarter), average yearly rates still increased from 2020 to 2021. In 2021, the average ocean freight rate for shipping bulk grain from the U.S. Gulf to Japan was $69.58 per metric ton (mt)—69 percent more than in 2020. The rate from the Pacific Northwest (PNW) to Japan was $38.81—75 percent more than in 2020 (fig. 1). The spread—or difference between the U.S. Gulf- and PNW-to-Japan rates—averaged $30.78 per mt, 61 percent above 2020. The cost of shipping grain from the U.S. Gulf to Europe was $25.31 per mt, 52 percent more than in 2020. The last time rates were at these levels was 2008 for the U.S. Gulf- and PNW-to-Japan routes and 2010 for the U.S. Gulf-to-Europe routes. This article examines the multiple factors behind these exceptionally high rates, which rose continuously throughout 2021 until November. The article also looks at what lies ahead.

Ocean Rates in 2021

Figure 1. Grain vessel rates, United States to Japan.



Note: PNW = Pacific Northwest.

Source: O'Neil Commodity Consulting.

First quarter. Typically, first-quarter ocean freight rates fall with dipping trade activity due to various holidays, such as New Year and Chinese Lunar New Year holidays. However, from January through March 2021, ocean freight rates for shipping dry bulk commodities, including grain, actually rose (*Grain Transportation Report (GTR)*, April 15, 2021). The rise in rates reflected global optimism: various COVID-19 vaccine trials had succeeded; major economies were reopening; and some were instituting loose monetary policies. China's stimulus package—aimed primarily at infrastructure development—drove up iron-ore demand. Chinese soybean imports also rose. Globally, trade of grain and other minor bulk commodities, such as soybeans and fertilizers,had increased.

Second quarter. In second quarter 2021, ocean freight rates for shipping bulk commodities, including grain, continued to rise (*GTR*, July 15, 2021). Global optimism from the reopening of major economies persisted and gained steam from successful COVID-19 vaccine deployments. In addition, China, the United States, and other major economies continued expansionary monetary policies and, in some cases, enacted stimulus packages to address the COVID-19 pandemic.

Strong movements of grain and other bulk items like coal and iron ore further supported rising ocean freight rates. China's iron ore imports remained strong, driven by increased construction and manufacturing activities. Also, the repair of a collapsed dam powering a major iron mine allowed production to recover in Brazil. This recovery markedly improved iron ore supply, allowing Brazil to fulfill sustained high demand in both China and Europe. Similarly, in May, improved supply of soybeans from Brazil and strong grain exports from Australia continued to boost the demand for vessels.

Rising coal exports from Columbia and shifting commodity-export patterns created even more demand for vessels. In the face of steep Chinese tariffs, Australia diverted grain and coal that would typically ship to China—shipping instead to farther destinations, such as Saudi Arabia (Drewry's May 6, 2021 *Shipping Insight*). To replace imported Australian grain and coal, China significantly raised its imports from the United States, Canada, Colombia, Russia,

and South Africa. Reconfigured trade patterns like these added to the ton-mile demand and lengthened vessel turnaround, thereby shrinking supply and availability (and pushing up rates).

Third quarter. In third quarter 2021, ocean freight rates for shipping bulk commodities, including grains, reached their highest levels since second quarter 2008. The increase was due to strong demand for shipping bulk items, as well as tight vessel supply caused by congestion and other logistic inefficiencies (*GTR*, October 14, 2021). China's low iron ore inventories drove the country to import large amounts of iron ore—88.5 million tons in July and 97.5 million tons in August (*Maritime Logistics Professional* and *Bloomberg News*). At the same time, in the European Union (EU), mass vaccination and reopening economies fueled industrial production (including iron) and boosted iron trade. Congestion worsened at Chinese ports and elsewhere. According to Drewry's August 5, 2021 *Shipping Insight*, over 50 million deadweight tons (dwt) capacity of dry bulk vessels waited to berth at Chinese ports in August, as the resurgence of COVID-19 exacerbated China's port congestion: several ports renewed restrictions on discharging cargo, which squeezed the vessel supply.

Fourth quarter. Bucking their year-long trend, ocean freight rates fell in November and December, causing fourth-quarter rates to fall below the previous quarter (table 1 and fig. 2). The dip was caused by low market activity during the holidays—Christmas through the Chinese New Year holidays.

Table 1. Ocean freight rates for grain routes during fourth quarter 2021.

Route	Oct.	Nov.	Dec.	4th quarter 2021	Change from 3rd qtr. '21	Change from 4th qtr. '20	Change from 4-yr. avg.
	--$/mt--			--$/mt--	Percent		
U.S. Gulf to Japan	87.38	77.50	70.63	78.50	-4	86	72
PNW to Japan	48.13	41.58	37.75	42.49	-5	82	68
Spread	39.25	35.92	32.88	36.02	-3	92	77
U.S. Gulf to Europe	32.75	28.83	28.69	30.09	7	58	57

Note: qtr. = quarter; avg = average; mt = metric ton; yr = year; PNW = Pacific Northwest.
Source: O'Neil Commodity Consulting.

Current Market Analysis and Outlook

As of January 13, the rate for shipping 1 mt of grain from the U.S. Gulf to Japan was $68.50—3 percent less than the previous week and 49 percent more than a year earlier. The rate from PNW to Japan was $37.50 per mt—3 percent less than the previous week and 42 percent more than the same period in 2021. Although freight rates are higher than last year, it is uncertain how long the rates will remain at the present levels. Trading activity is expected to be low during this year's Chinese Lunar Year celebration (January 31 to February 15). However, the optimistic outlook for grain trade from Russia and other unforeseen circumstances could put upward pressure on ocean freight rates in the near term.

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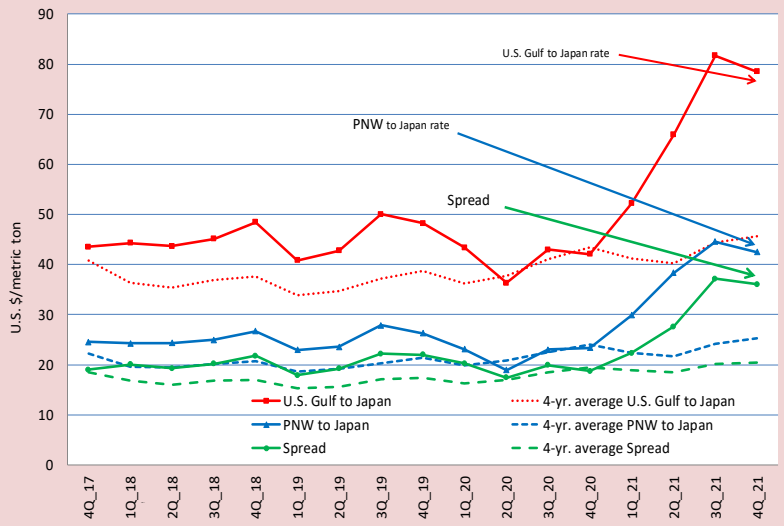
Figure 2. Grain vessel rates and spread, United States to Japan, 2017-21



Note: Q = quarter; yr. = year; PNW = Pacific Northwest.
Source: O'Neil Commodity Consulting.

Grain Transportation Indicators

Table 1

Grain transport cost indicators[1]

	Truck	Rail		Barge	Ocean	
For the week ending		Non-Shuttle	Shuttle		Gulf	Pacific
01/19/22	250	299	281	472	306	266
01/12/22	245	299	314	389	315	275

[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	1/14/2022	1/7/2022
Corn	IL–Gulf	-1.02	-0.95
Corn	NE–Gulf	-1.06	-0.99
Soybean	IA–Gulf	-1.45	-1.30
HRW	KS–Gulf	-3.11	-3.33
HRS	ND–Portland	-2.58	-2.33

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

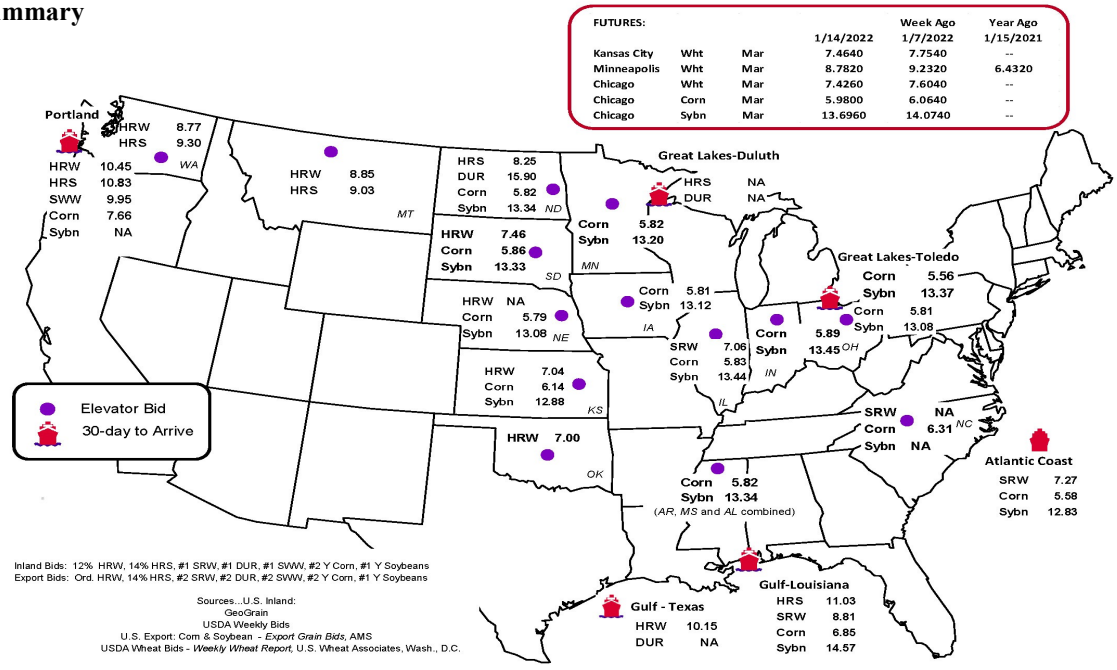
Due to the holiday, data on 12/24 and 12/31 were not available. Therefore, available data on 12/23 and 12/30 were reported.

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]
1/12/2022[p]	1,557	1,211	6,670	735	10,173	1/8/2022	3,700
1/5/2022[r]	1,428	878	5,542	654	8,502	1/1/2022	1,976
2022 YTD[r]	1,557	1,211	6,670	735	10,173	2022 YTD	3,700
2021 YTD[r]	1,577	2,126	7,394	823	11,920	2021 YTD	1,450
2022 YTD as % of 2021 YTD	99	57	90	89	85	% change YTD	255
Last 4 weeks as % of 2021[2]	93	71	77	72	78	Last 4wks. % 2021	137
Last 4 weeks as % of 4-year avg.[2]	220	124	110	141	124	Last 4wks. % 4 yr.	131
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.

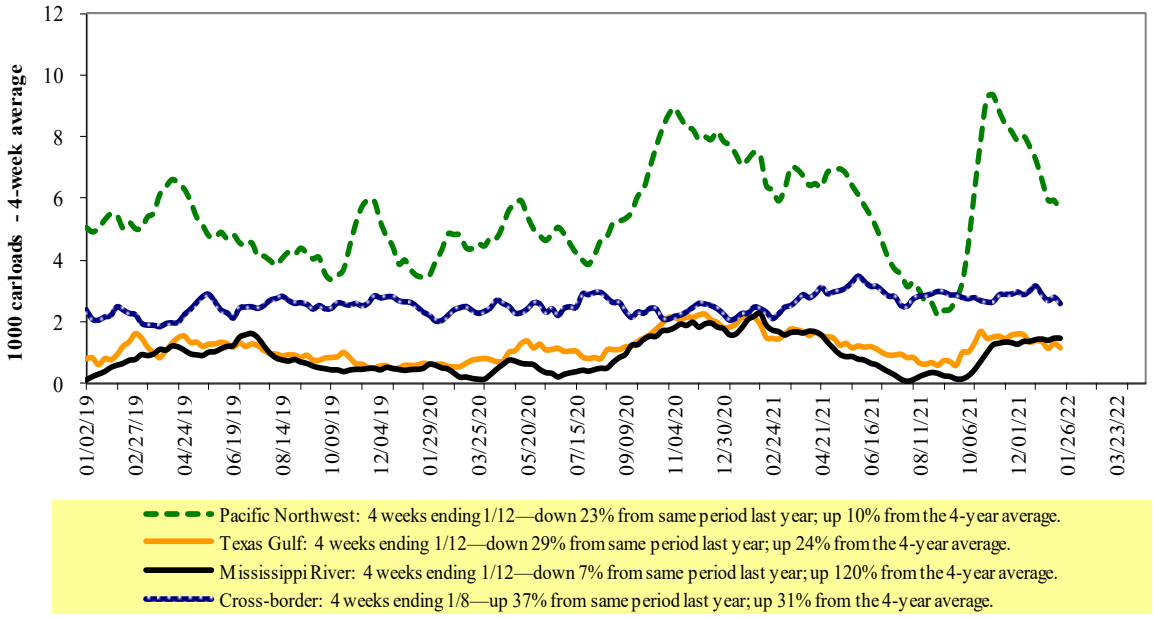
YTD = year-to-date; p = preliminary data; r = revised data; n/a = not available; wks. = weeks; avg. = average.

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	
1/8/2022	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	1,273	2,760	10,999	1,089	5,831	21,952	3,117	3,143
This week last year	2,437	3,541	13,904	1,484	6,238	27,604	4,977	4,387
2022 YTD	1,273	2,760	10,999	1,089	5,831	21,952	3,117	3,143
2021 YTD	2,437	3,541	13,904	1,484	6,238	27,604	4,977	4,387
2022 YTD as % of 2021 YTD	52	78	79	73	93	80	63	72
Last 4 weeks as % of 2021*	83	85	84	116	82	85	70	69
Last 4 weeks as % of 3-yr. avg.**	98	87	95	125	104	98	81	80
Total 2021	93,935	120,860	609,890	64,818	318,002	1,207,505	210,277	242,533

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

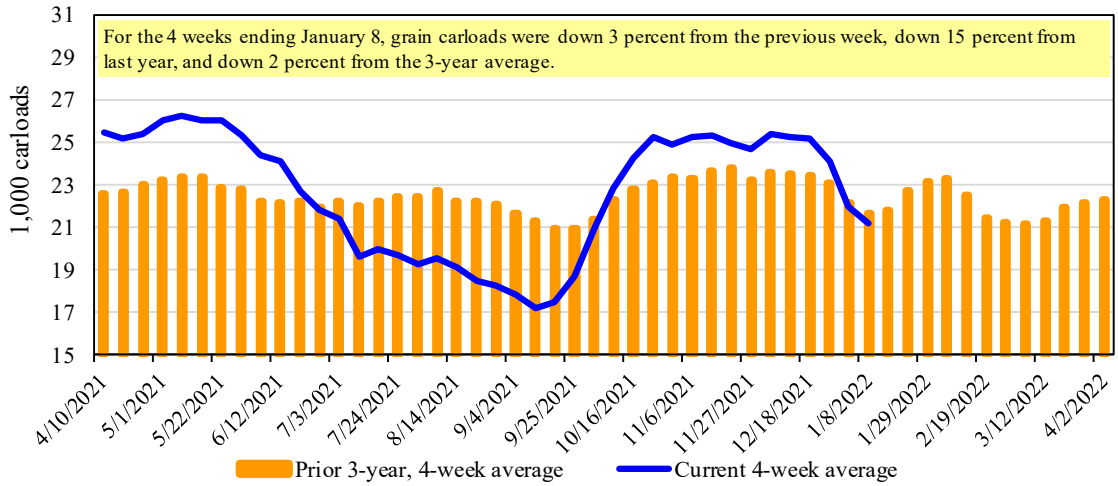
**The past 4 weeks as a percent of the same period from the prior 3-year average. YTD = year-to-date; avg. = average; yr. = year.

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							
1/13/2022		Jan-22	Jan-21	Feb-22	Feb-21	Mar-22	Mar-21	Apr-22	Apr-21
BNSF[3]	COT grain units	no offer	no bids	103	14	no bids	0	0	no bids
	COT grain single-car	no offer	no bids	52	9	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.

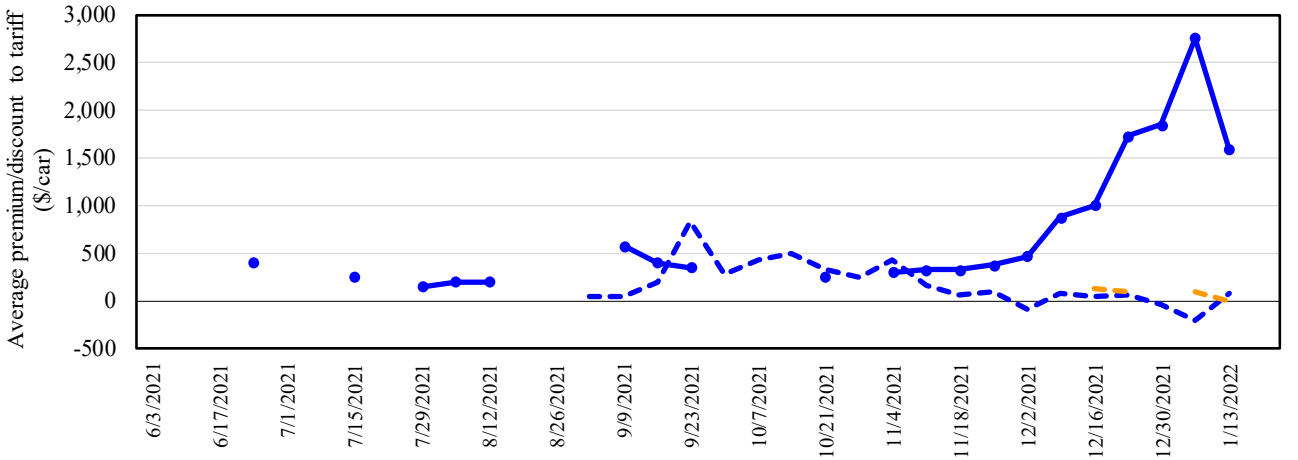
Region 1 includes: AR, IL, LA, MO, NM, OK, TX, WI, and Duluth, MN.

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
Bids/offers for railcars to be delivered in January 2022, secondary market

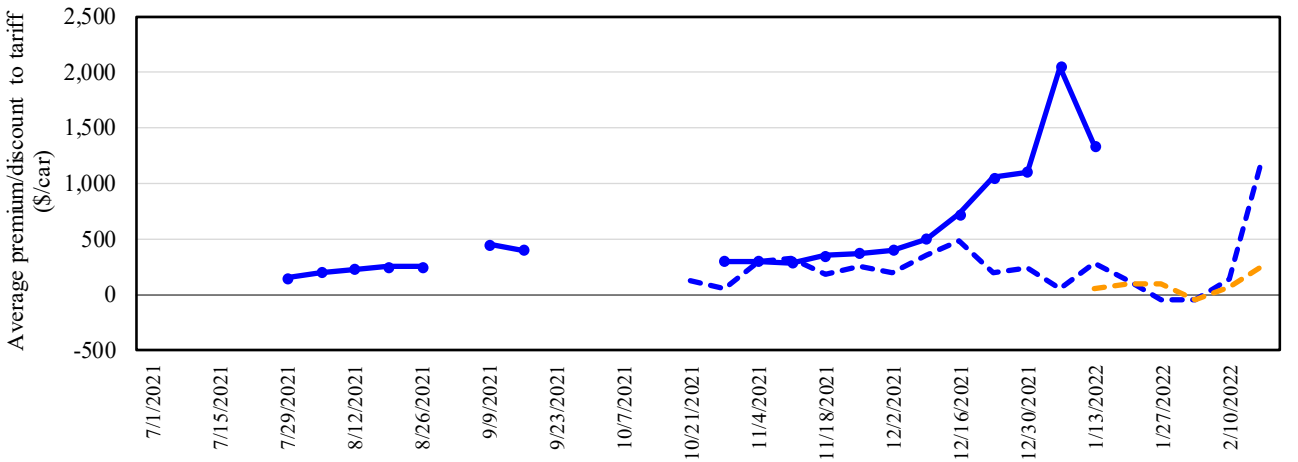


1/13/2022	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$1,575	$1,600

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers fell $1,171 this week and are $1,171 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
Bids/offers for railcars to be delivered in February 2022, secondary market



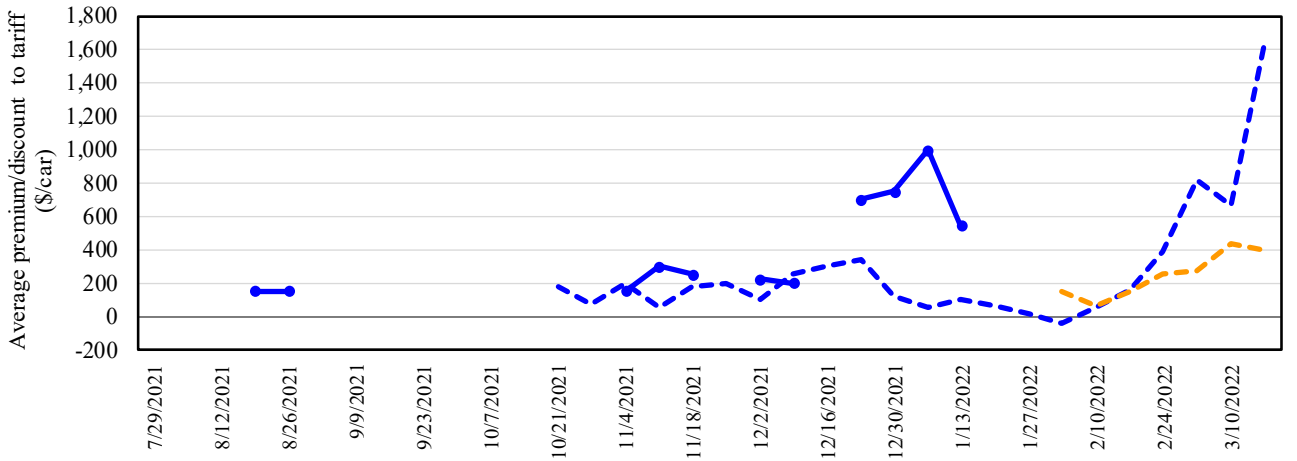
1/13/2022	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$1,350	$1,333

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers fell $708 this week and are $708 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 6

Bids/offers for railcars to be delivered in March 2022, secondary market



1/13/2022	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$488	$600

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers fell $454 this week and are $454 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 6

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

	For the week ending: 1/13/2022	Delivery period					
		Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-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**	**1,575**	**1,350**	**488**	**138**	**(75)**	**n/a**
	Change from last week	(808)	(600)	(376)	(188)	(12)	n/a
	Change from same week 2021	1,125	638	63	(38)	(38)	n/a
	UP-Pool	**1,600**	**1,333**	**600**	**n/a**	**100**	**n/a**
	Change from last week	(1,533)	(817)	(533)	n/a	n/a	n/a
	Change from same week 2021	1,100	771	300	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]

January 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	4
	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	$4,525	$294	$47.85	$1.30	5
	Sioux Falls, SD	Galveston-Houston, TX	$7,026	$0	$69.77	$1.90	3
	Colby, KS	Galveston-Houston, TX	$4,801	$322	$50.87	$1.38	5
	Amarillo, TX	Los Angeles, CA	$5,121	$448	$55.30	$1.51	7
Corn	Champaign-Urbana, IL	New Orleans, LA	$4,000	$332	$43.02	$1.09	9
	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	7
	Des Moines, IA	Los Angeles, CA	$5,880	$602	$64.37	$1.63	10
Soybeans	Minneapolis, MN	New Orleans, LA	$3,631	$451	$40.53	$1.10	11
	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	$4,745	$332	$50.42	$1.37	8
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	$6,012	$528	$64.94	$1.77	7
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	9
	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	7
	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	$4,975	$383	$53.21	$1.45	8
	Toledo, OH	Huntsville, AL	$4,954	$0	$49.20	$1.34	0
	Grand Island, NE	Portland, OR	$5,360	$540	$58.59	$1.59	10

[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.

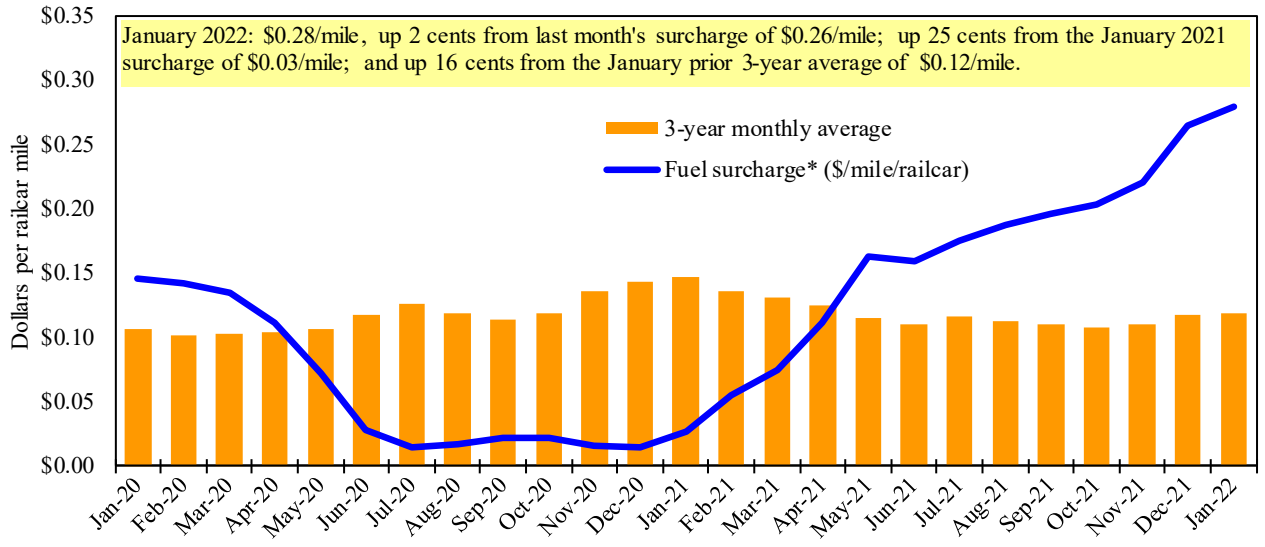
[5] As of January 1, both BNSF and Union Pacific changed their billing and reporting of rates to Mexico.

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.

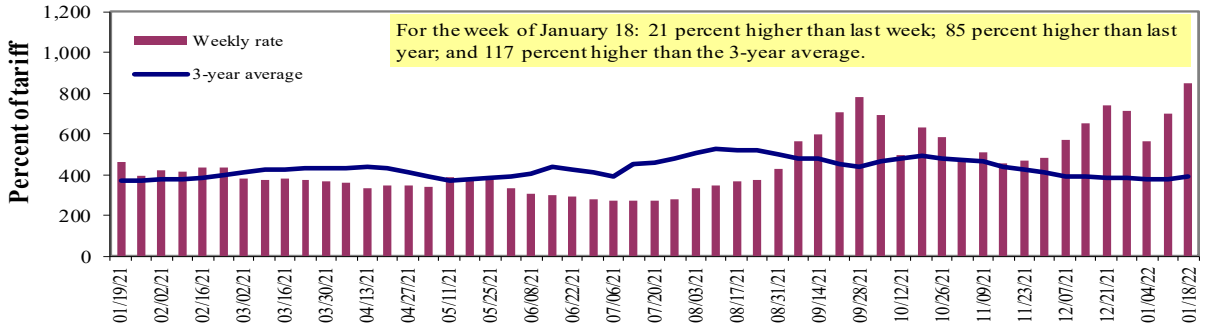
* Beginning January 2009, the Canadian Pacific fuel surcharge is computed by a monthly average of the bi-weekly fuel surcharge.

**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

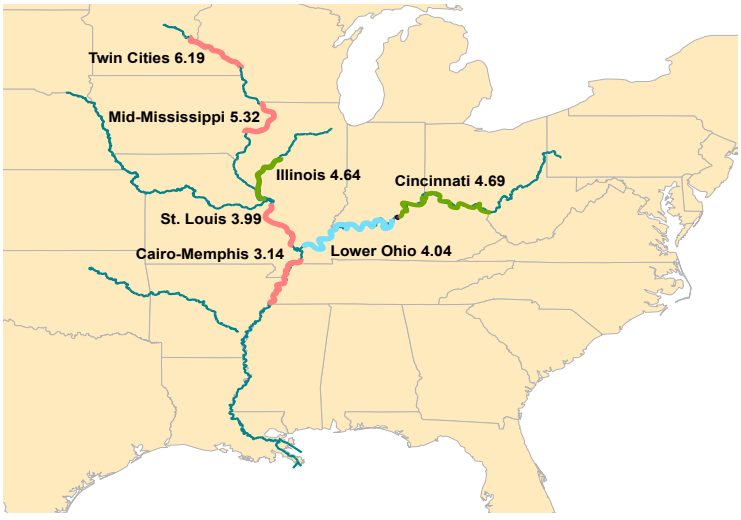
		Twin Cities	Mid-Mississippi	Lower Illinois River	St. Louis	Cincinnati	Lower Ohio	Cairo-Memphis
Rate[1]	1/18/2022	-	-	850	730	725	725	575
	1/11/2022	-	-	700	675	690	690	467
$/ton	1/18/2022	-	-	39.44	29.13	34.00	29.29	18.06
	1/11/2022	-	-	32.48	26.93	32.36	27.88	14.66
Current week % change from the same week:								
	Last year	-	-	85	117	100	100	103
	3-year avg. [2]	-	-	117	147	120	120	115
Rate[1]	February	-	-	605	514	530	530	409
	April	483	458	436	328	348	348	285

[1]Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); [2]4-week moving average; ton = 2,000 pounds; "-" not available due to lock closure.
Source: USDA, Agricultural Marketing Service.

Figure 9
Benchmark tariff rates

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

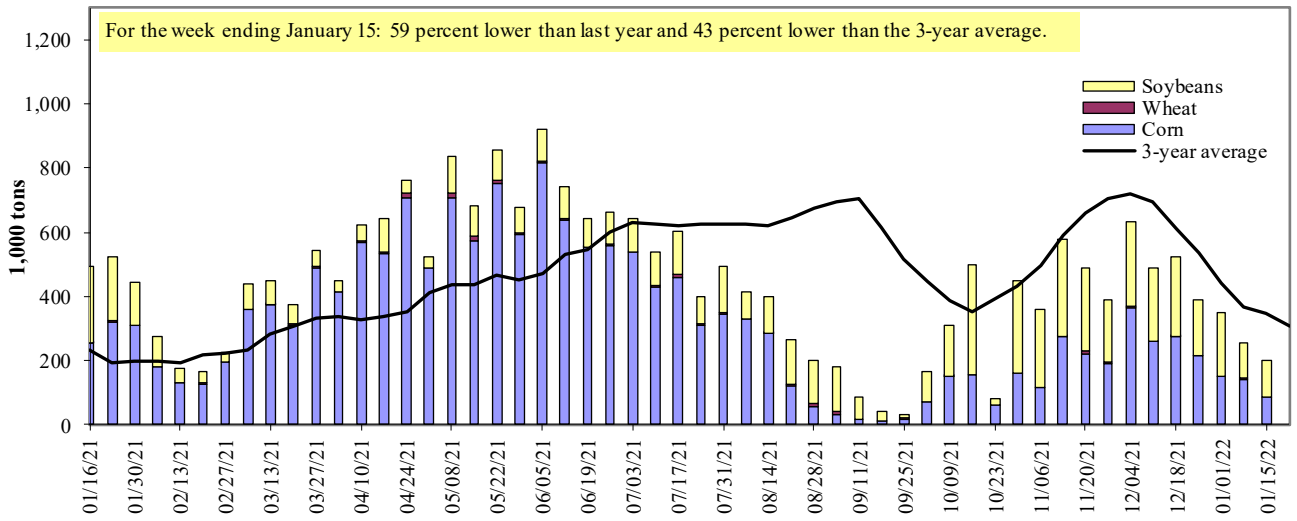
Select applicable index from market quotes are included in tables on this page. The 1976 benchmark rates per ton are provided in map.



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 01/15/2022	Corn	Wheat	Soybeans	Other	Total
Mississippi River					
Rock Island, IL (L15)	0	0	0	0	0
Winfield, MO (L25)	3	0	16	0	19
Alton, IL (L26)	77	0	119	0	196
Granite City, IL (L27)	85	0	114	0	199
Illinois River (La Grange)	79	0	126	0	205
Ohio River (Olmsted)	152	11	78	2	244
Arkansas River (L1)	0	24	25	0	49
Weekly total - 2022	237	35	218	2	492
Weekly total - 2021	429	16	425	45	915
2022 YTD[1]	505	56	465	12	1,037
2021 YTD[1]	749	29	743	47	1,568
2022 as % of 2021 YTD	67	189	63	25	66
Last 4 weeks as % of 2021[2]	64	147	68	53	67
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.

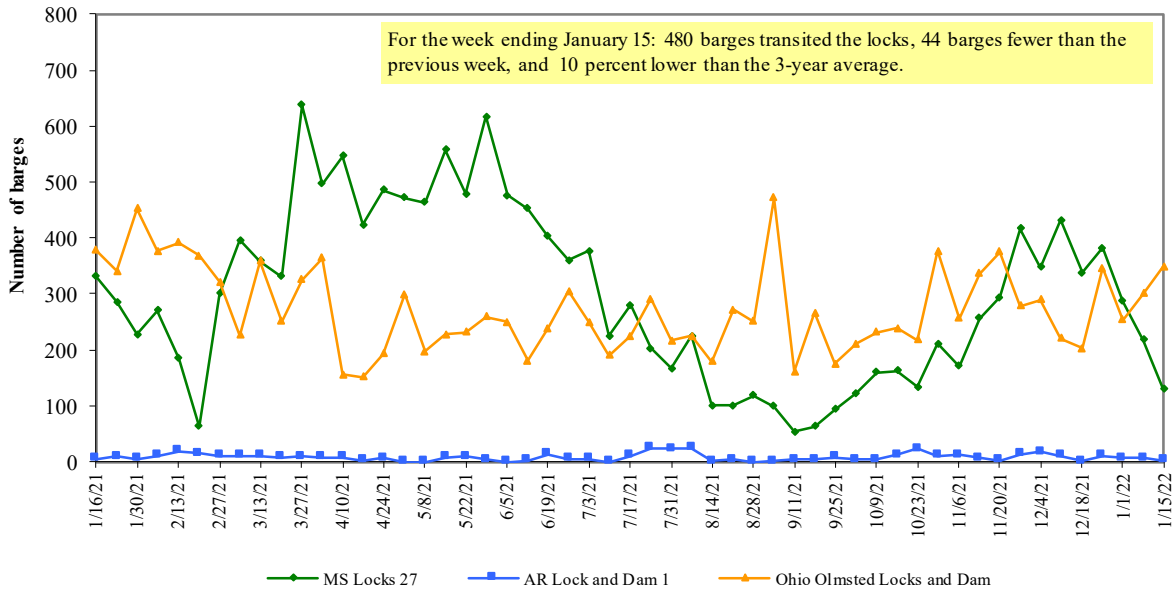
[2] As a percent of same period in 2020.

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

Source: U.S. Army Corps of Engineers.

Figure 11

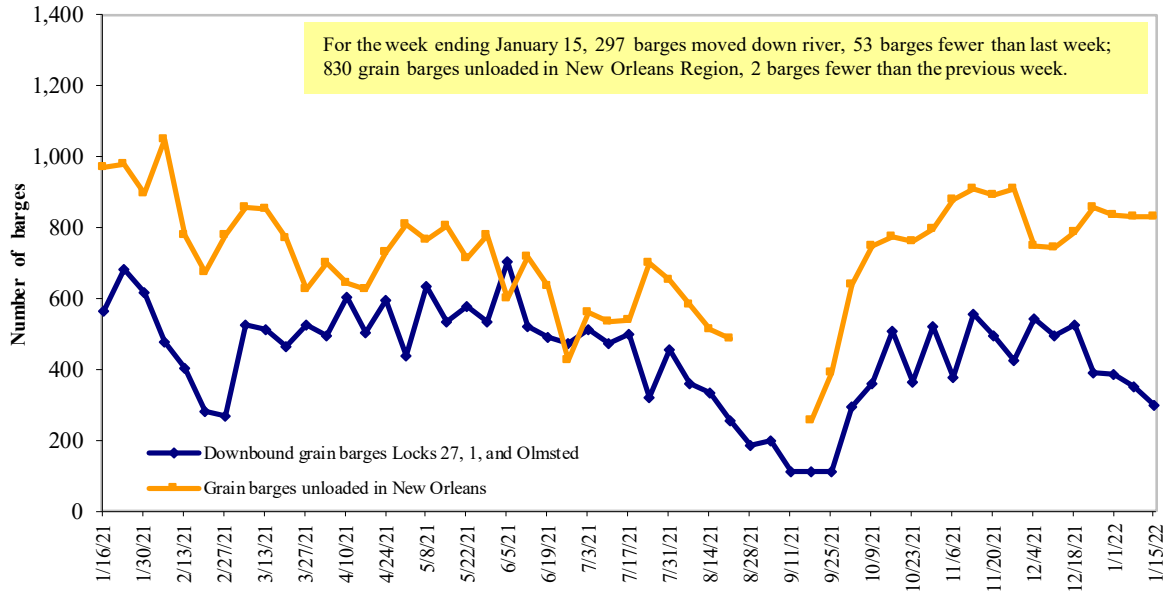
Upbound empty barges transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam



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 1/17/2022 (U.S. $/gallon)

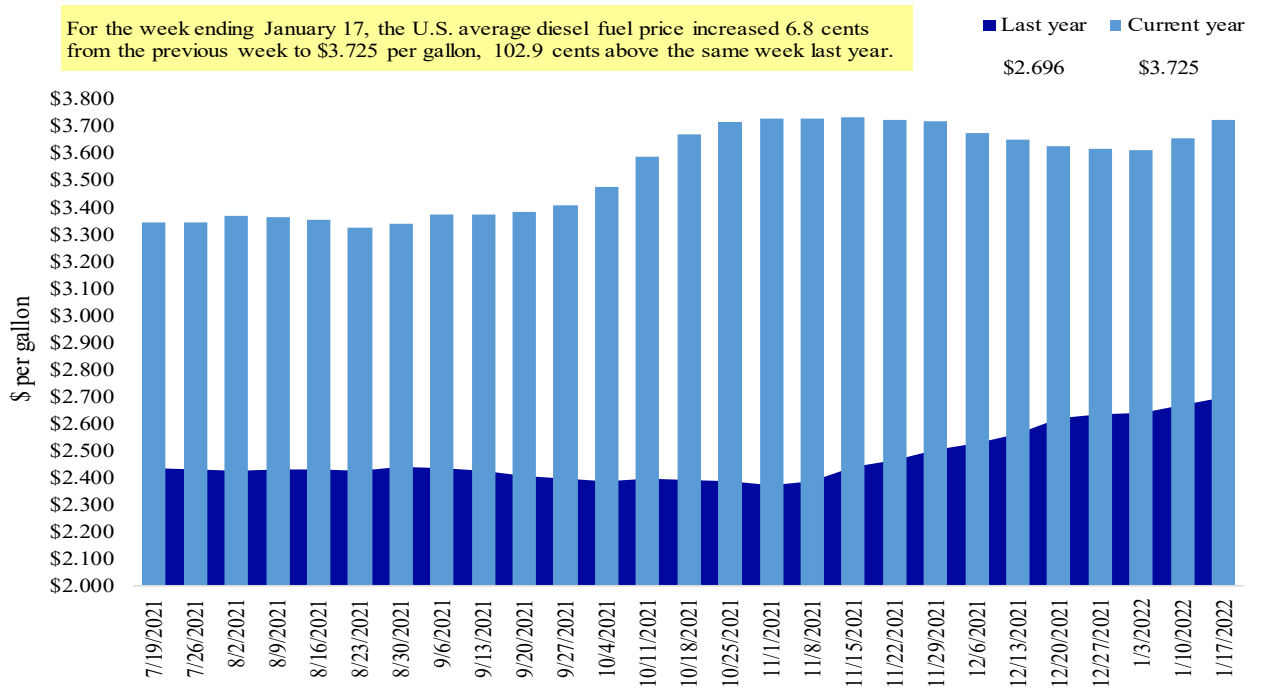
Region	Location	Price	Change from Week ago	Change from Year ago
I	East Coast	3.719	0.074	0.972
	New England	3.698	0.071	0.934
	Central Atlantic	3.877	0.069	0.953
	Lower Atlantic	3.624	0.077	0.997
II	Midwest	3.603	0.081	0.971
III	Gulf Coast	3.463	0.079	1.002
IV	Rocky Mountain	3.678	0.012	1.075
V	West Coast	4.451	0.034	1.296
	West Coast less California	4.067	0.065	1.263
	California	4.789	0.007	1.341
Total	United States	3.725	0.068	1.029

[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



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]									
1/6/2022	2,041	680	1,260	806	54	4,841	25,790	10,804	41,434
This week year ago	1,446	499	1,816	2,457	101	6,319	28,662	14,561	49,542
Cumulative exports-marketing year[2]									
2021/22 YTD	4,318	1,698	3,077	2,101	113	11,307	15,665	31,634	58,605
2020/21 YTD	5,771	1,088	4,295	3,099	489	14,741	16,721	40,912	72,373
YTD 2021/22 as % of 2020/21	75	156	72	68	23	77	94	77	81
Last 4 wks. as % of same period 2020/21*	146	142	69	34	37	78	92	82	88
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 1/06/2022	Total commitments[2] 2021/22 current MY	2020/21 last MY	% change current MY from last MY	Exports[3] 3-yr. avg. 2019-21
	1,000 mt -			
Mexico	12,304	9,947	24	14,817
Japan	4,194	5,926	(29)	11,082
China	12,356	11,769	5	7,920
Columbia	2,439	2,183	12	4,491
Korea	78	1,063	(93)	3,302
Top 5 importers	**31,372**	**30,889**	**2**	**41,613**
Total U.S. corn export sales	**41,455**	**45,382**	**(9)**	**53,145**
% of projected exports	67%	65%		
Change from prior week[2]	**458**	**1,438**		
Top 5 importers' share of U.S. corn export sales	76%	68%		78%
USDA forecast January 2022	**61,705**	**70,051**	**(12)**	
Corn use for ethanol USDA forecast, January 2022	**135,255**	**127,711**	**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 1/06/2022	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	24,087	33,470	(28)	21,666
Mexico	3,161	3,530	(10)	4,754
Egypt	2,035	1,902	7	3,093
Indonesia	745	1,149	(35)	2,325
Japan	1,294	1,265	2	2,275
Top 5 importers	**31,322**	**41,317**	**(24)**	**34,113**
Total U.S. soybean export sales	**42,437**	**55,473**	**(23)**	**50,758**
% of projected exports	76%	90%		
change from prior week[2]	**736**	**908**		
Top 5 importers' share of U.S. soybean export sales	74%	74%		**67%**
USDA forecast, January 2022	**55,858**	**61,717**	**(9)**	

[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 1/06/2022	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	2,858	2,757	4	3,388
Philippines	2,447	2,649	(8)	3,121
Japan	1,899	1,939	(2)	2,567
Korea	986	1,418	(30)	1,501
Nigeria	1,595	1,066	50	1,490
China	848	2,385	(64)	1,268
Taiwan	714	941	(24)	1,187
Indonesia	67	832	(92)	1,131
Thailand	459	701	(34)	768
Italy	190	549	(65)	681
Top 10 importers	**12,065**	**15,237**	(21)	**17,102**
Total U.S. wheat export sales	**16,148**	**21,060**	(23)	**24,617**
% of projected exports	72%	78%		
change from prior week[2]	**265**	**222**		
Top 10 importers' share of U.S. wheat export sales	75%	72%		69%
USDA forecast, January 2022	**22,480**	**27,030**	(17)	

[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 01/13/22	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	184	83	221	268	382	70	46	44	13,243
Corn	245	94	261	339	437	78	73	106	13,420
Soybeans	489	212	231	701	1,004	70	87	172	14,540
Total	**918**	**389**	**236**	**1,308**	**1,824**	**72**	**73**	**105**	**41,203**
Mississippi Gulf									
Wheat	106	56	189	161	34	471	296	131	3,202
Corn	777	613	127	1,390	1,506	92	75	113	38,498
Soybeans	1,159	607	191	1,766	2,630	67	75	106	27,159
Total	**2,042**	**1,275**	**160**	**3,317**	**4,170**	**80**	**77**	**109**	**68,858**
Texas Gulf									
Wheat	45	47	95	92	96	96	187	86	3,888
Corn	0	0	n/a	0	0	n/a	284	161	627
Soybeans	0	0	n/a	0	273	0	0	1	1,611
Total	**45**	**47**	**95**	**93**	**369**	**25**	**44**	**60**	**6,126**
Interior									
Wheat	54	5	n/a	59	82	72	56	80	2,972
Corn	158	124	128	282	296	95	118	134	10,147
Soybeans	124	119	104	243	318	77	79	99	6,525
Total	**336**	**248**	**136**	**584**	**695**	**84**	**92**	**112**	**19,644**
Great Lakes									
Wheat	0	0	n/a	0	0	n/a	n/a	96	536
Corn	0	0	n/a	0	0	n/a	0	0	145
Soybeans	0	0	n/a	0	0	n/a	164	165	592
Total	**0**	**0**	**n/a**	**0**	**0**	**n/a**	**187**	**127**	**1,273**
Atlantic									
Wheat	0	4	0	4	0	n/a	n/a	n/a	128
Corn	3	7	38	10	0	n/a	n/a	280	85
Soybeans	39	9	422	48	178	27	45	87	2,184
Total	**41**	**21**	**197**	**62**	**178**	**35**	**49**	**94**	**2,397**
U.S. total from ports*									
Wheat	389	196	198	585	595	98	76	65	23,969
Corn	1,183	838	141	2,021	2,239	90	81	115	62,921
Soybeans	1,811	947	191	2,758	4,402	63	73	113	52,612
Total	**3,382**	**1,981**	**171**	**5,363**	**7,236**	**74**	**76**	**106**	**139,501**

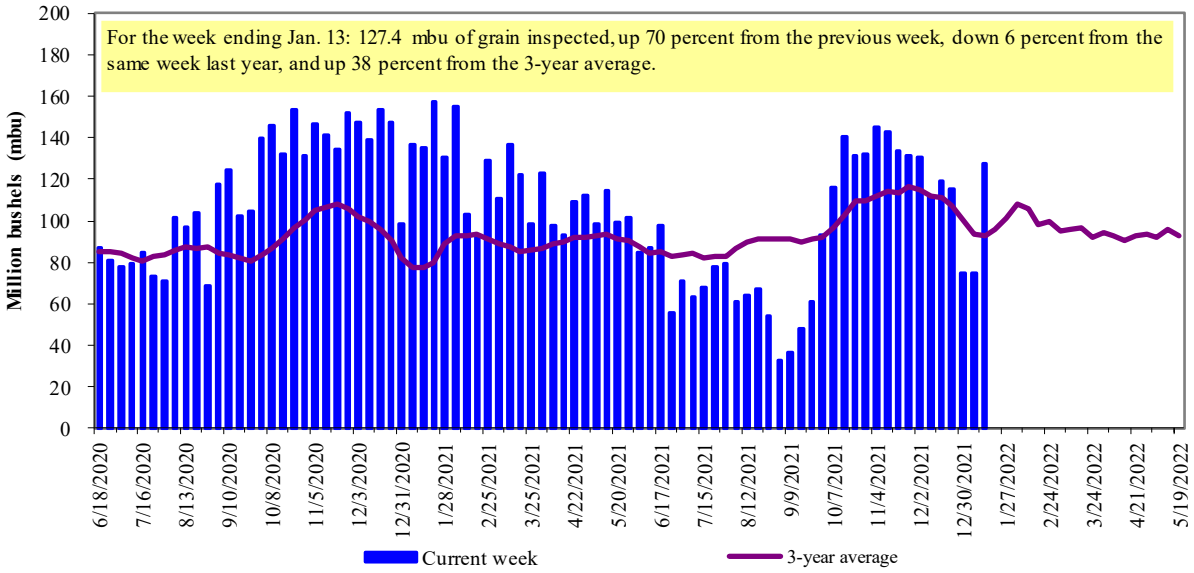
*Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

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)

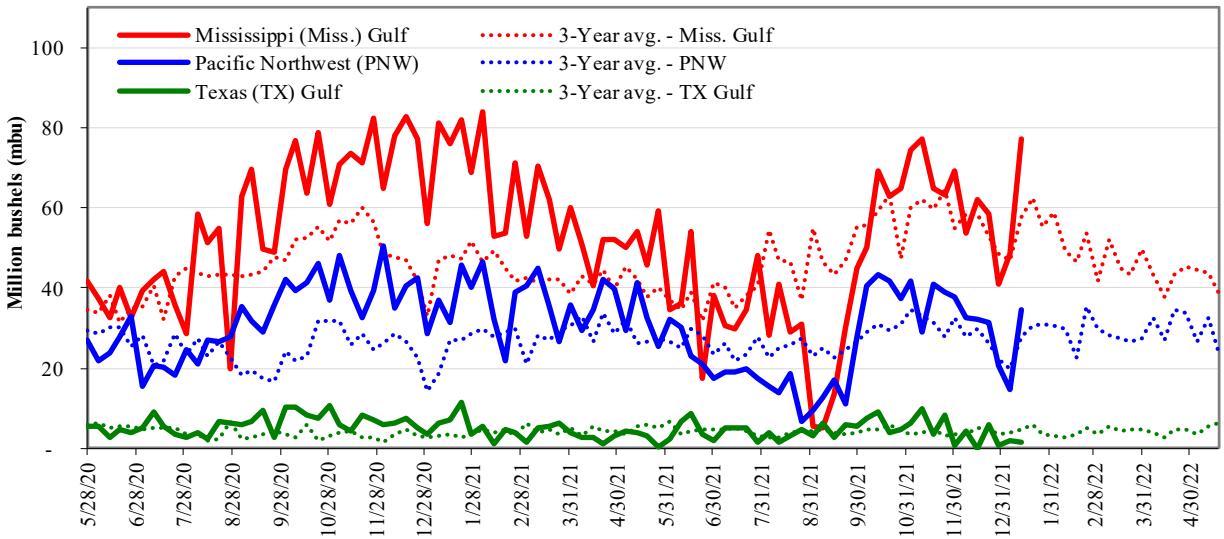


Note: 3-year average consists of 4-week running average.

Source: USDA, Federal Grain Inspection Service.

Figure 15

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



Week ending 01/13/22 inspections (mbu):	
MS Gulf:	77.1
PNW:	34.4
TX Gulf:	1.7

Percent change from:	MS Gulf	TX Gulf	U.S. Gulf	PNW
Last wk:	up 59	down 5	up 57	up 136
Last Year (same wk):	up 1	down 77	down 6	up 10
3-yr avg. (4-wk. mov. Avg):	up 50	down 59	up 42	up 43

Source: USDA, Federal Grain Inspection Service.

Table 17

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

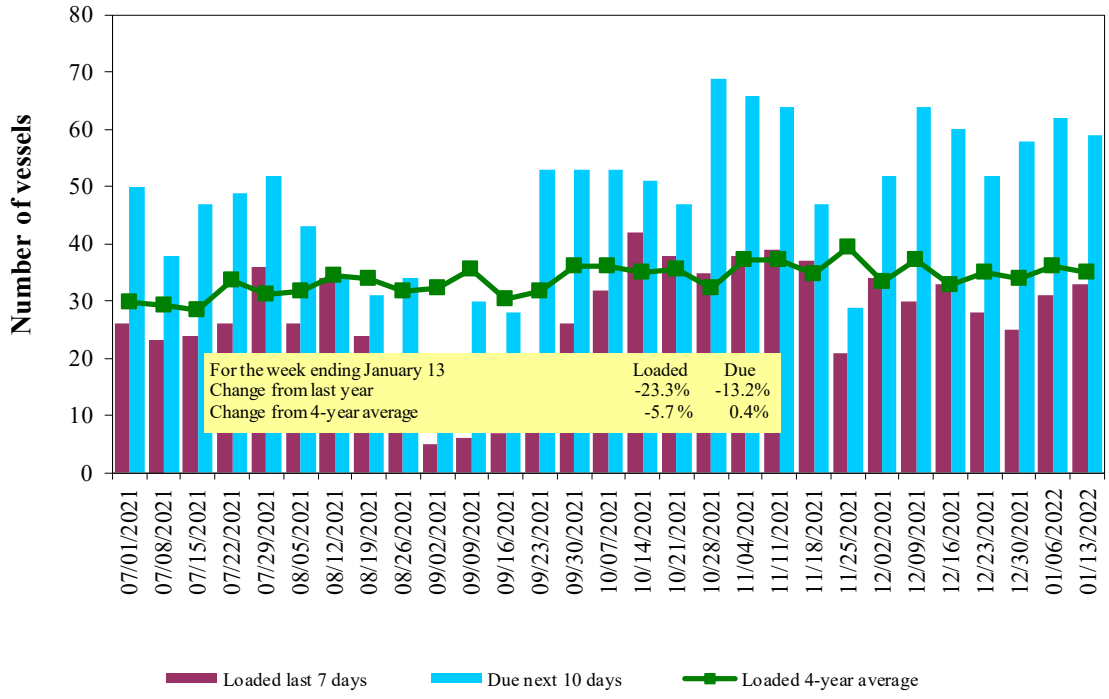
	Gulf			Pacific Northwest
Date	In port	Loaded 7-days	Due next 10-days	In port
1/13/2022	48	33	59	23
1/6/2022	47	31	62	21
2021 range	(10…57)	(5...48)	(15...69)	(4…27)
2021 average	34	32	49	15

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

Source: USDA, Agricultural Marketing Service.

Figure 16

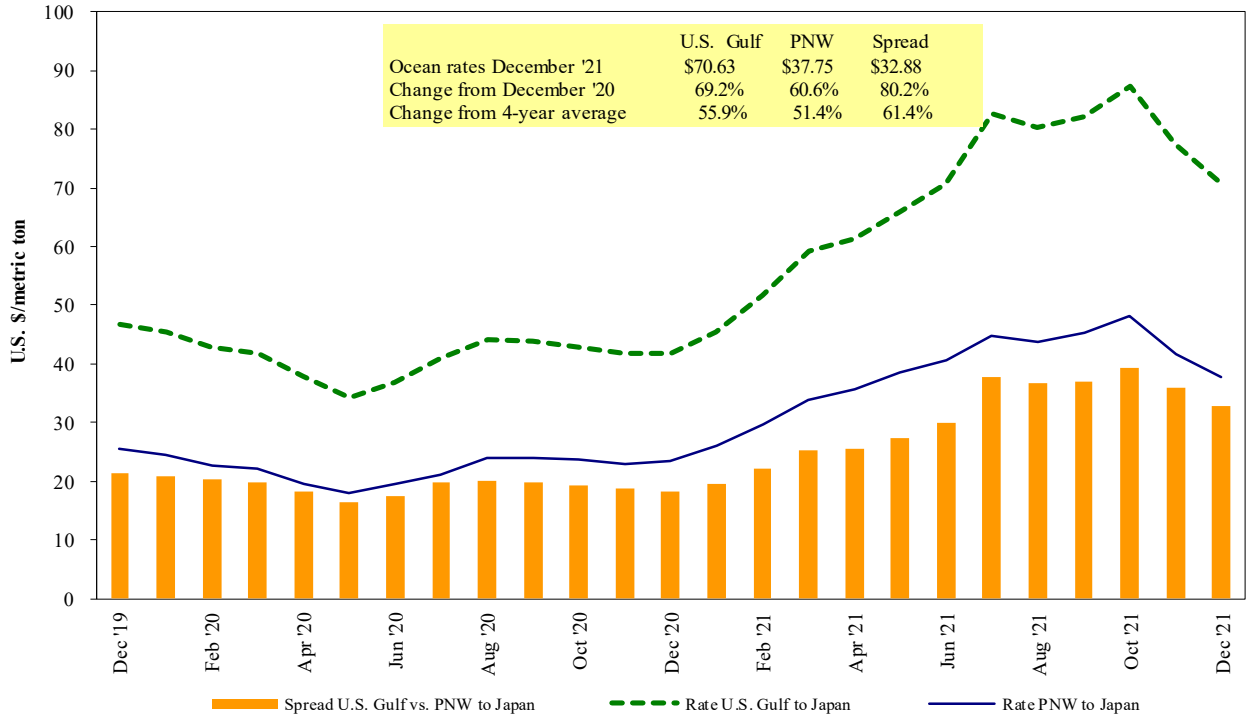
U.S. Gulf[1] vessel loading activity



[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 01/15/2022

Export region	Import region	Grain types	Loading date	Volume loads (metric tons)	Freight rate (US$/metric ton)
U.S. Gulf	Japan	Heavy grain	Oct 1/10, 2021	48,000	70.10
U.S. Gulf	Japan	Heavy grain	Aug 21/Sep 9, 2021	50,000	60.90
U.S. Gulf	Japan	Heavy grain	Aug 1/10, 2021	50,000	69.75
U.S. Gulf	Sudan	Wheat	Sep 1/10, 2021	49,000	79.12*
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	China	Heavy grain	Oct 1/10, 2021	55,000	81.50
U.S. Gulf	Djibouti	Wheat	Jul 6/16, 2021	5,880	85.70*
PNW	Japan	Wheat	Sep 1, 2021	52,170	56.55*
PNW	Japan	Wheat	Jul 25/ Aug 5, 2021	32,590	64.00
PNW	Taiwan	Wheat	Nov 1/10, 2021	49,580	67.30
PNW	Taiwan	Heavy grain	Aug 20/30, 2021	35,000	64.20*
PNW	Taiwan	Wheat	Aug 1/10, 2021	55,000	54.95
PNW	Yemen	Wheat	Jan 24/Feb 4	29,960	124.00*
Brazil	N. China	Heavy grain	Jan 1/5, 2022	64,000	58.25
Australia	Japan	Barley	Nov 1/10, 2021	55,000	65.50
River Plate	South Korea	Corn	Oct 21, 2021	67,000	79.80

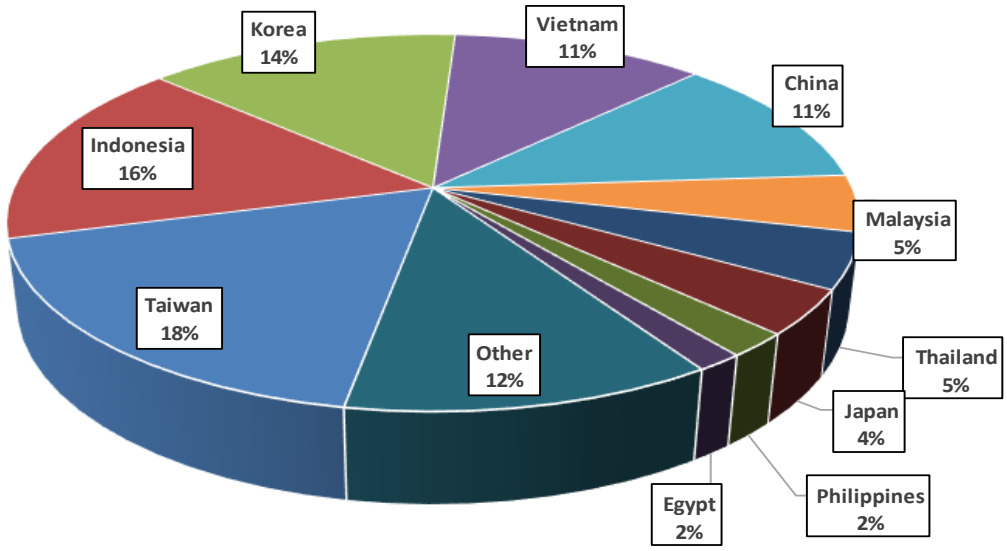
*50 percent of food aid from the United States is required to be shipped on U.S.-flag vessels.

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 2019, containers were used to transport 9 percent of total U.S. waterborne grain exports. Approximately 60 percent of U.S. waterborne grain exports in 2019 went to Asia, of which 14 percent were moved in containers. Approximately 94 percent of U.S. waterborne containerized grain exports were destined for Asia.

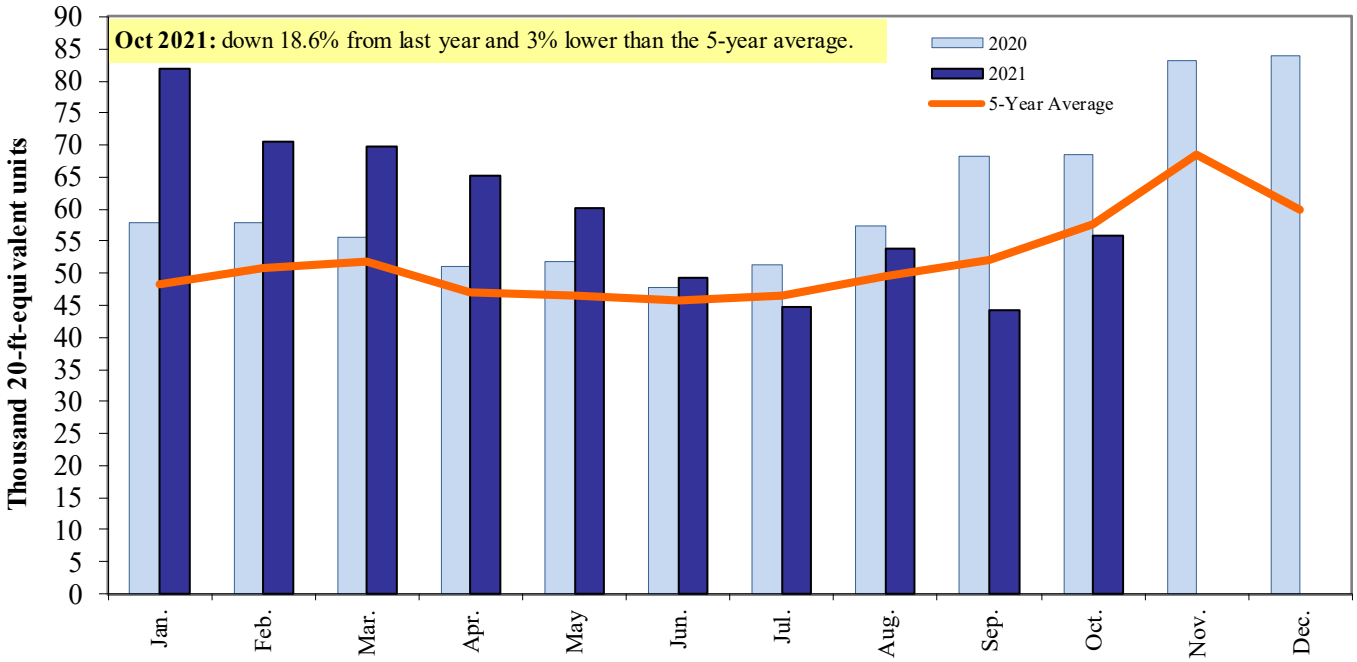
Figure 18
Top 10 destination markets for U.S. containerized grain exports, Jan-Oct 2021



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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