United States Department of Agriculture

Grain Transportation Report

A weekly publication of the Agricultural Marketing Service
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Contents

The next release is February 3, 2022

WEEKLY HIGHLIGHTS

FHWA Launches Largest Bridge Investment Program Since 1956

On January 14, the U.S. Department of Transportation's (DOT) Federal Highway Administration (FHWA), launched its Bridge Formula Program (BFP)—the single largest program dedicated to bridge investment since the Interstate Highway System was established in 1956. BFP will provide $26.5 billion to States, the District of Columbia and Puerto Rico over 5 years (including $5.3 billion in fiscal year 2022). The program aims to replace, rehabilitate, preserve, protect, and construct the Nation's bridges. Annually, each State will receive no less than $45 million—15 percent of which will be set aside for "off-system bridges." Off-system bridges (i.e., not part of the highway system) are owned by a county, city, town, or other local agency. As authorized under the Bipartisan Infrastructure Law, BFP would allow States to use 100-percent Federal funding to repair or rehabilitate off-system bridges. FHWA encourages States to prioritize projects that would replace bridges classified in "poor" condition and rehabilitate or repair bridges classified in "fair" condition. States are also encouraged to use the funding to address highway-bridge challenges that "impede the mobility of goods (e.g., freight)."

Recent Service Issues Contribute to High Prices in Secondary Railcar Market

Bids for shuttle service in the **secondary railcar** market have been high recently. They peaked at $3,100 per car for BNSF Railway (BNSF) and $2,400 for Union Pacific Railroad (UP) for the week ending January 6. For the week ending January 20 (the latest week of data), bids for service in February averaged $1,258 across BNSF and UP. Both railroads have reported poor service metrics to the Surface Transportation Board in recent weeks (also available on USDA's Agricultural Transportation Open Data Platform). For the week ending January 19, when averaged across the two railroads, grain train speeds were down 4 percent from the prior-3-year average for the same week. Similarly, compared to the prior-3-year average for the same week, the railroads' grain train origin dwell times were up 151 percent, while their reported number of unfilled grain car orders included 1,383 more cars, an increase of 414 percent. In its January 21 Network Update, BNSF reported some improvements to its service, but still faces challenging operating environments in its North Region, spanning the Upper Midwest to the Pacific Northwest (PNW). According to BNSF, a mix of extreme weather—including Arctic temperatures and heavy snow and rain in PNW—has required shorter trains and resulted in multiple outages in the region.

Three Midwestern States Waive HOS Regulations for Transporting Fuel and Propane

In response to winter weather conditions, Iowa, North Dakota, and Minnesota have declared emergencies and waived hours-of-service (HOS) regulations related to petroleum and propane products. In the affected States, drivers are experiencing long wait times at terminals and difficult driving conditions, such as ice and snow. The HOS waiver for drivers of commercial motor vehicles is intended to ensure adequate supplies of propane and petroleum products—necessary for continuing to process and dry harvested crops. In effect for 30 days from their issuance, the executive orders were issued by North Dakota, Iowa and Minnesota on January 4th, 6th, and 7th respectively.

Snapshots by Sector

Export Sales

For the week ending January 13, **unshipped balances** of wheat, corn, and soybeans for marketing year 2021/22 totaled 40.1 million metric tons (mmt), down 19 percent from the same time last year, and down 3 percent from the previous week. Net **corn export sales** were 1.091 mmt, up significantly from the previous week. Net **soybean export sales** were 0.671 mmt, down 9 percent from the previous week. Net weekly **wheat export sales** were 0.381 mmt, up 44 percent from the previous week.

Rail

U.S. Class I railroads originated 24,344 **grain carloads** during the week ending January 15. This was a 11-percent increase from the previous week, 12 percent fewer than last year, and 2 percent more than the 3-year average.

Average February shuttle **secondary railcar** bids/offers (per car) were $1,258 above tariff for the week ending January 20. This was $83 less than last week and $871 more than this week last year. There were no non-shuttle bids/offers this week.

Barge

For the week ending January 22, **barged grain movements** totaled 775,228 tons. This was 58 percent higher than the previous week and 30 percent less than the same period last year.

For the week ending January 22, 462 grain barges **moved down river**—165 more barges than the previous week. There were 818 grain barges unloaded in the New Orleans region, 1 percent lower than last week.

Ocean

For the week ending January 20, 38 **oceangoing grain vessels** were loaded in the Gulf—down 19 percent from the same period last year. Within the next 10 days (starting January 21), 56 vessels were expected to be loaded—4 percent more than the same period last year.

As of January 20, the rate for shipping a metric ton (mt) of grain from the U.S. Gulf to Japan was $64.50. This was 6 percent less than the previous week. The rate from the Pacific Northwest to Japan was $35.00 per mt, 7 percent less than the previous week.

Fuel

For the week ending January 24, the U.S. average **diesel fuel price** increased 5.5 cents from the previous week to $3.78 per gallon, 106.4 cents above the same week last year. At $3.656 per gallon, the average Midwest diesel price increased 17.9 cents in the past 3 weeks.

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Feature Article/Calendar

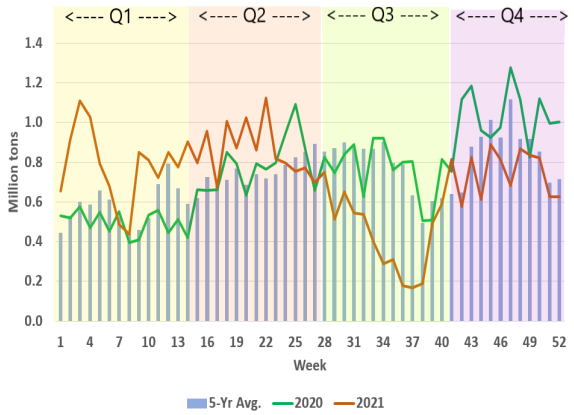
Review of 2021 Barged Grain Movements and Rates

Following a strong performance in late 2020, barged grain volumes continued high in the first half of 2021. However, weekly movements declined sharply in the third quarter, falling far below 2020 levels and the previous-5-year average (2016-20). Despite a modest recovery in the fourth quarter, tonnages were notably lower than in fourth quarter 2020. Total 2021 downbound barged grain movements were 36.8 million tons, 8 percent lower than in 2020 and 4 percent lower than the 5-year average.[1] In the first half of 2021, St. Louis barge spot rates followed their historical trend, but rose more sharply than usual in the third and fourth quarters. The steep rise mostly reflected limited barge supply and logistical challenges related to Hurricane Ida. This article briefly explores the factors influencing barge movements and spot freight rates during 2021.

Initial High Volumes Plunged in Latter Half of 2021

In 2020, high U.S. crop production and strong export demand (mostly from China) stimulated record-high tonnages, which persisted for the first half of 2021. Despite the typical winter closures of the Upper Mississippi River Navigation System, weekly barged grain movements reached a record high in mid-January (1.1 million tons). After river traffic stalled in late January and most of February, weekly volumes quickly rebounded. Weekly volumes rose in March and trended even higher than the 5-year average from March until the first week of June (week 23) (fig. 1). For the week ending July 3, 2021, year-to-date (YTD) downbound barged grain volumes on the Mississippi River reached 21.5 million tons, a record high since at least 2003 —31 percent higher than the same week in 2020 and 27 percent higher than the 5-year average (***GTR* table 10**).

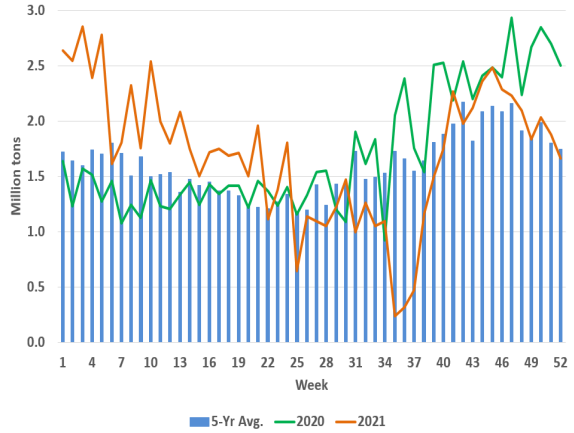
Figure 1. Weekly downbound barged grain movements



Source: U.U.S. Army Corps of Engineers, LPMS Data.

However, despite starting strong, third-quarter 2021 weekly volumes soon fell sharply—more sharply than their historical pattern—because of low stocks (depleted by high January-June grain exports) and Hurricane Ida.[2] On August 29, the storm's landfall decisively ended 2021's strong barged grain movements: the storm damaged the New Orleans region's electrical distribution system, as well as the barge fleet and shoreside infrastructure. These setbacks introduced new logistical challenges and exacerbated existing shortages of barges and labor. As a result, barge operations and grain inspections in the Lower Mississippi River region mostly halted at the beginning of the harvest season. By mid-September, weekly barged grain movements dropped to a record-low 169,000 tons. Third-quarter 2021 weekly grain inspections in the Mississippi Gulf (a proxy for demand for Mississippi River downbound grain barges) mirrored the decline of grain movements. Weekly total inspections volumes had reached their annual peak in January, then gradually declined, bottoming at 238,000 tons in mid-September—roughly 2 million tons less than in the same week in 2020 (fig. 2).

Figure 2. Weekly grain inspections, Mississippi Gulf



Source: USDA, Federal Grain Inspection Service

Recovering moderately from the previous quarter, fourth-quarter 2021 downbound barged grain movements totaled 8.2 million tons—29 percent less than 2020 and 15 percent less than the 5-year average. The sluggish recovery suggested the ongoing struggle to move the freight to the Gulf, as shortages and other logistical challenges persisted.

[1] The U.S. Army Corps of Engineers (USACE) supports commercial navigation on inland waterways by designing, building, and maintaining locks, dams, channels, and other infrastructure. Every week, USDA's Agricultural Marketing Service collects and reports weekly data on downbound barged grain movements along the Mississippi River system, collected from the USACE Lock Performance Monitoring System (LPMS). The movement statistics cited in this article are based on LPMS data.

[2] In most years, because producers and shippers move old crops from the inventory during the third quarter, weekly volumes decline only moderately.

Recovering faster than movements, fourth-quarter Mississippi Gulf grain inspections totaled 23 million tons—18 percent less than 2020, but 5 percent higher than the 5-year average.[1]

Limited Supply Spurred High Rates In Second Half of 2021

From November of 2020 through the first half of 2021, St. Louis barge spot rates trended slightly downward (fig. 3). However, in mid-August, rates started escalating, peaking at $33.7/per ton in early October. For the rest of the fourth quarter, rates oscillated between $14/per ton and $30/per ton. For the majority of the second half of 2021, rates were above the 5-year average.[2]

High spot rates generally indicate either high demand to purchase immediate services or a low supply relative to demand. The somewhat lackluster fourth-quarter recovery of Mississippi Gulf grain inspections and barge movements (figs. 1 and 2) suggests the abnormally high fourth-quarter barge spot rates were not driven *solely* by demand to move newly harvested crops. Rather, the barge industry had struggled to find empty barges since late summer of 2021. Certainly, unexpected adverse weather and water conditions, along with a short-term river closure in Victoria Bend, AR (around River Mile 595.5), may have helped push up freight rates. Still, the main reasons for high fourth-quarter spot rates were limited barge supply and unusual obstacles to moving empty barges upriver from New Orleans. The number of barges unloaded in the New Orleans region is a proxy for the availability of empty barges for previously committed services and for the spot freight market.

By the fourth quarter, the number of barges unloaded had mostly recovered from Ida (fig. 4a). Nonetheless, several factors suggested the storm's aftermath continued, including the relatively few empty barges locking through Mississippi Locks 27 (compared to 2020 and the 5-year average), unusually elevated demand, and ongoing logistical issues. Many empty northbound barges did not reach their intended St. Louis-area destinations during the harvest season (fig. 4b). The relative scarcity of empty barges, along with high demand to move new crops, explains the irregularly high fourth-quarter spot rates.

Looking Forward

In 2021, the barged grain market performed unevenly. Despite a lackluster showing in the second half of 2021, the barge industry is optimistic for the rest of marketing year 2021/22, as grain sales and export demand remain healthy. However, a variety of factors could alter market conditions, such as new Covid-19 variants, harvests in South America, new developments with U.S. trade partners and competitors, changing trade and monetary policies, and shifting domestic demand for ethanol production and soybean crush.

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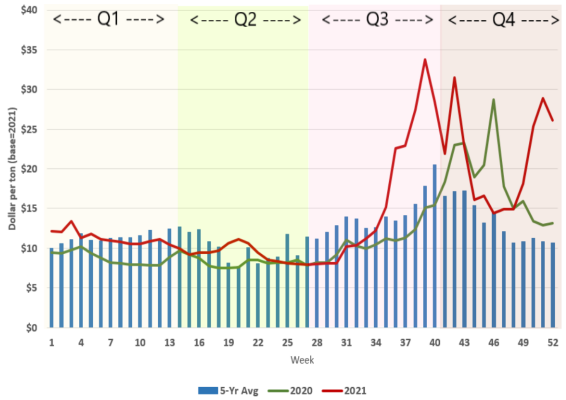
Figure 3. Barge freight spot rates (St. Louis)



Source: USDA, Transportation and Marketing Program.

Figure 4a. Number of barges unloaded in Gulf

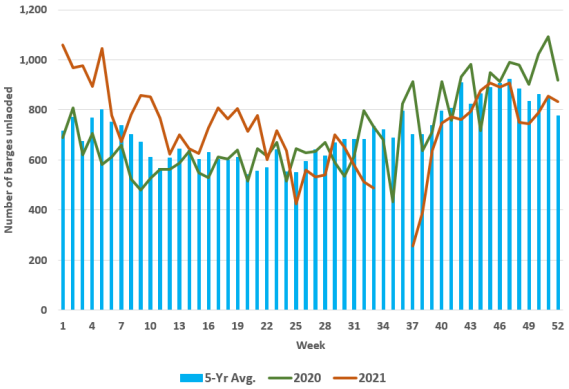
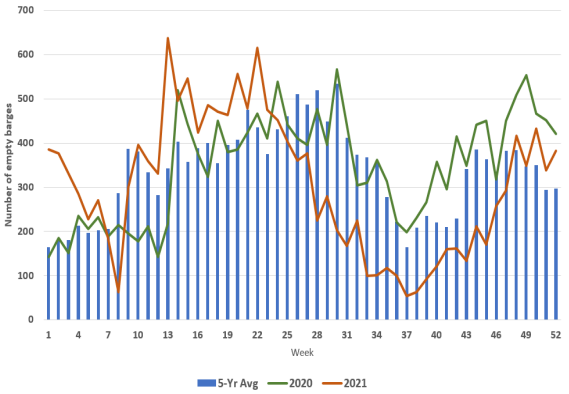


Figure 4b. Number of empty barges locking through Mississippi Locks 27



Source: U.S. Army Corps of Engineers, LPMS Data.

[1] Bulk grain moved by barge through the Mississippi River consists of a significant portion of grain inspected and shipped to the export destinations. Therefore, the changes in downbound grain tonnages and grain inspections in the Mississippi Gulf often move in the same direction, with similar paces.

[2] Rates reported in this article are all adjusted by the Production Price Index using 2021 as the base year.

Grain Transportation Indicators

Table 1

Grain transport cost indicators[1]

	Truck	Rail		Barge	Ocean	
For the week ending		Non-Shuttle	Shuttle		Gulf	Pacific
01/26/22	254	299	274	478	288	248
01/19/22	250	299	281	472	306	266

[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	1/21/2022	1/14/2022
Corn	IL–Gulf	-1.14	-1.02
Corn	NE–Gulf	-1.18	-1.06
Soybean	IA–Gulf	-1.72	-1.45
HRW	KS–Gulf	-3.41	-3.11
HRS	ND–Portland	-2.53	-2.58

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

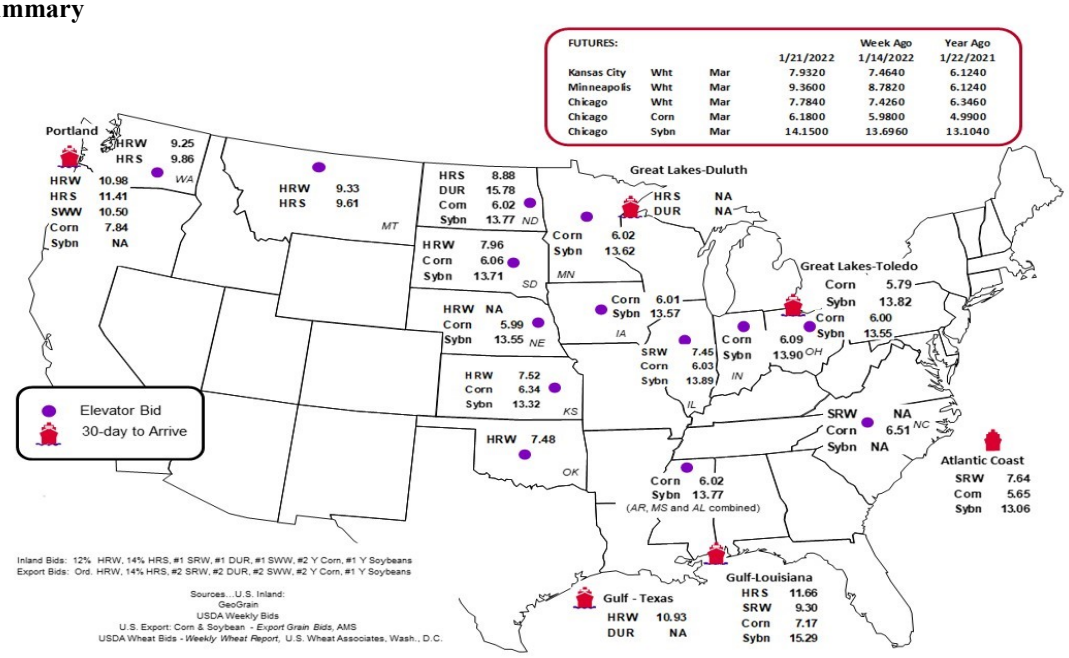
Due to the holiday, data on 12/24 and 12/31 were not available. Therefore, available data on 12/23 and 12/30 were reported.

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]
1/19/2022[p]	1,470	1,592	7,366	759	11,187	1/15/2022	2,934
1/12/2022[r]	1,557	1,211	6,670	735	10,173	1/8/2022	3,700
2022 YTD[r]	3,027	2,803	14,036	1,494	21,360	2022 YTD	6,634
2021 YTD[r]	3,373	4,372	14,151	2,163	24,059	2021 YTD	3,665
2022 YTD as % of 2021 YTD	90	64	99	69	89	% change YTD	181
Last 4 weeks as % of 2021[2]	92	66	81	62	79	Last 4wks. % 2021	127
Last 4 weeks as % of 4-year avg.[2]	190	107	113	136	121	Last 4wks. % 4 yr.	126
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.

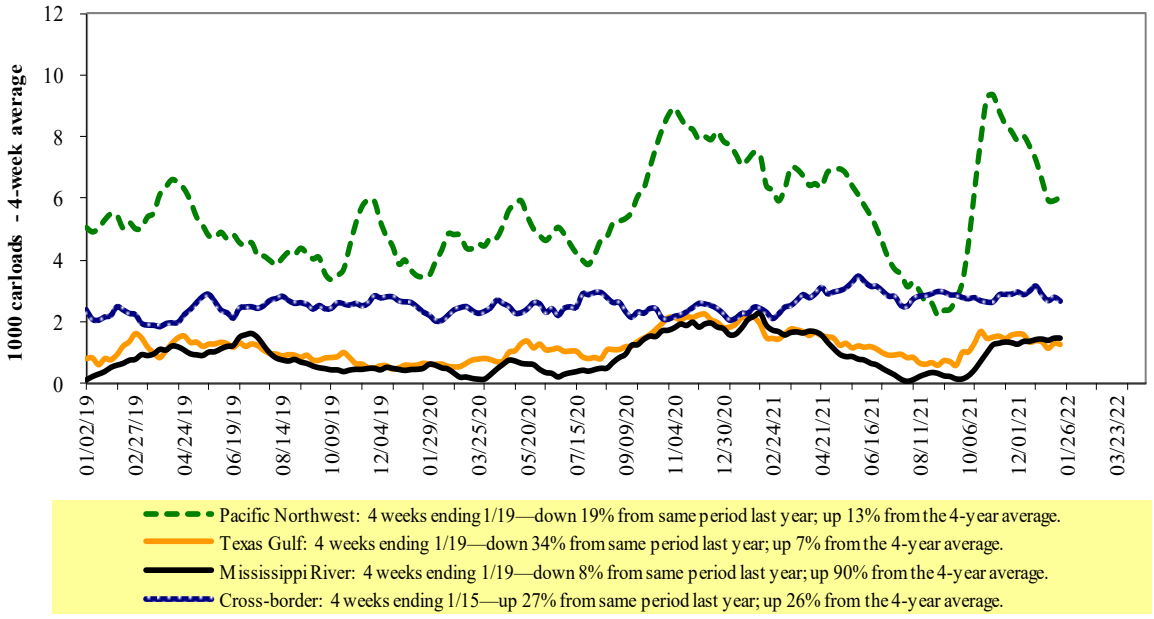
YTD = year-to-date; p = preliminary data; r = revised data; n/a = not available; wks. = weeks; avg. = average.

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	
1/15/2022	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	2,257	2,283	11,756	1,571	6,477	24,344	2,191	2,893
This week last year	2,008	2,763	13,194	846	8,729	27,540	5,125	5,869
2022 YTD	3,530	5,043	22,755	2,660	12,308	46,296	5,308	6,036
2021 YTD	4,445	6,304	27,098	2,330	14,967	55,144	10,102	10,256
2022 YTD as % of 2021 YTD	79	80	84	114	82	84	53	59
Last 4 weeks as % of 2021*	90	82	82	125	79	84	59	69
Last 4 weeks as % of 3-yr. avg.**	98	83	95	136	103	98	71	82
Total 2021	93,935	120,787	609,890	64,818	318,002	1,207,432	210,274	242,533

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

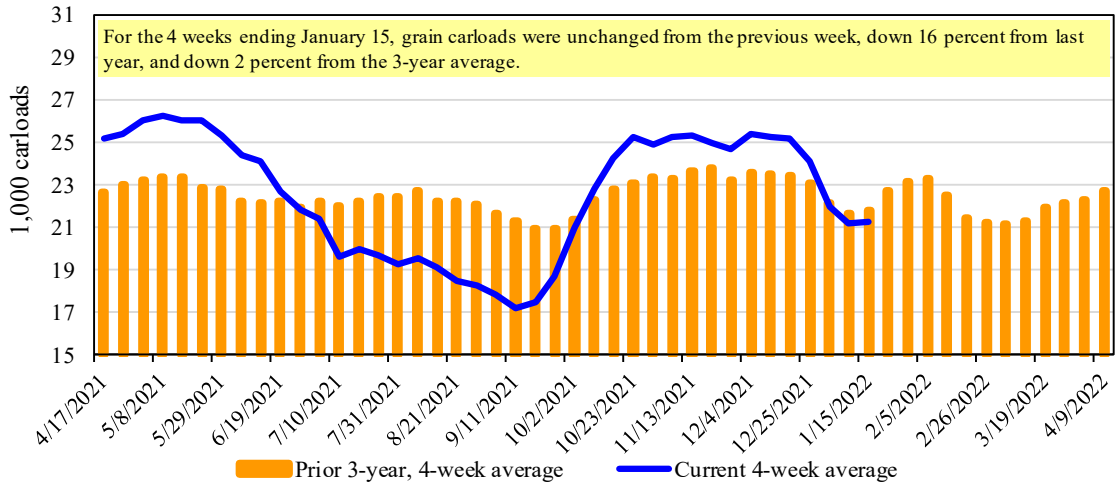
**The past 4 weeks as a percent of the same period from the prior 3-year average. YTD = year-to-date; avg. = average; yr. = year.

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							
1/20/2022		Feb-22	Feb-21	Mar-22	Mar-21	Apr-22	Apr-21	May-22	May-21
BNSF[3]	COT grain units	0	0	0	no bids	0	no bids	no bids	no bids
	COT grain single-car	3	6	0	0	0	0	0	0
UP[4]	GCAS/Region 1	no offer	no offer	no offer	no offer	no offer	no offer	n/a	n/a
	GCAS/Region 2	no offer	no offer	no offer	no offer	no offer	no offer	n/a	n/a

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

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

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

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

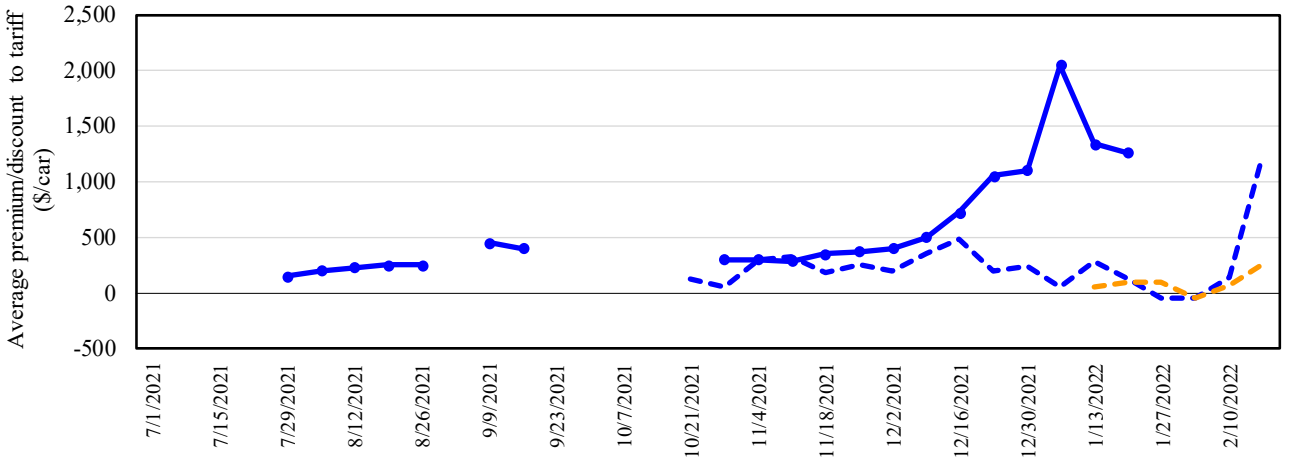
Region 1 includes: AR, IL, LA, MO, NM, OK, TX, WI, and Duluth, MN.

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

Source: USDA, Agricultural Marketing Service.

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

Figure 4
Bids/offers for railcars to be delivered in February 2022, secondary market

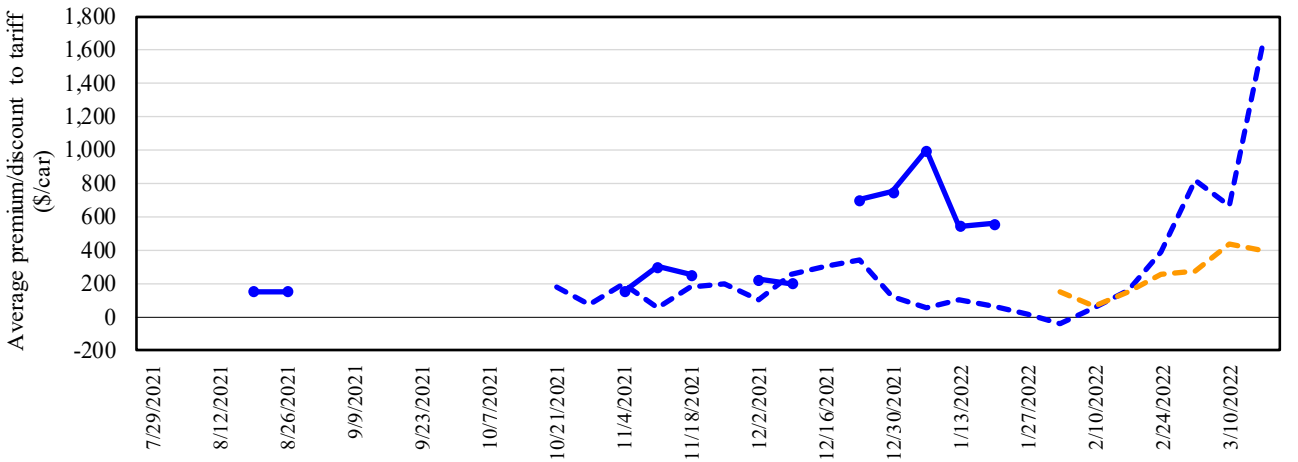


1/20/2022	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$1,325	$1,192

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers fell $83 this week and are $792 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 March 2022, secondary market



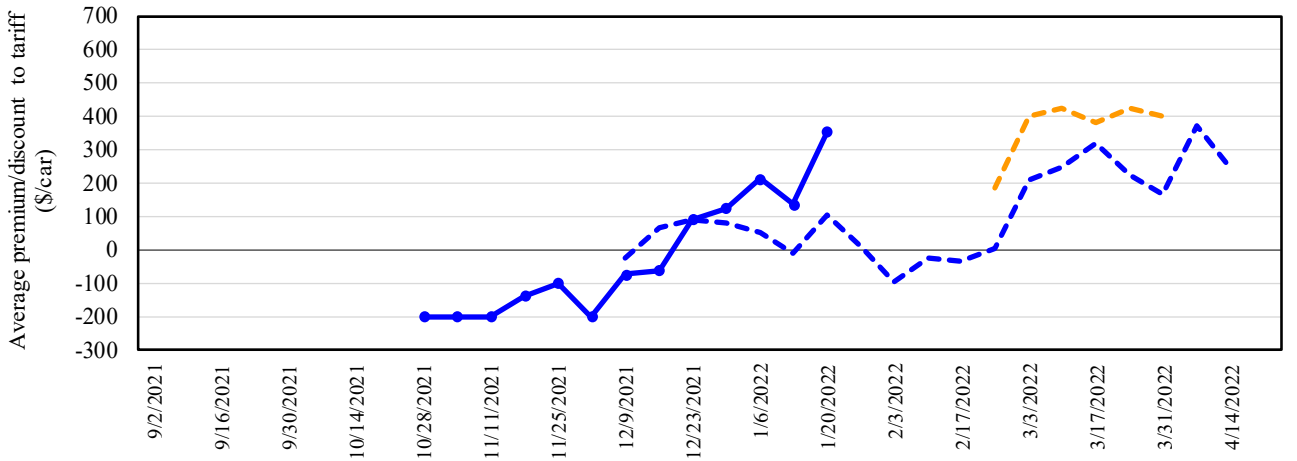
1/20/2022	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$563	$550

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers rose $13 this week and are $442 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 April 2022, secondary market



1/20/2022	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$106	$600

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers rose $216 this week and are at the peak.

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

Table 6

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

	For the week ending: 1/20/2022	Delivery period					
		Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-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**	**1,325**	**563**	**106**	**(75)**	**n/a**	**n/a**
	Change from last week	(25)	75	(32)	0	n/a	n/a
	Change from same week 2021	900	263	(56)	(31)	n/a	n/a
	UP-Pool	**1,192**	**550**	**600**	**n/a**	**n/a**	**n/a**
	Change from last week	(141)	(50)	n/a	n/a	n/a	n/a
	Change from same week 2021	842	363	558	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.

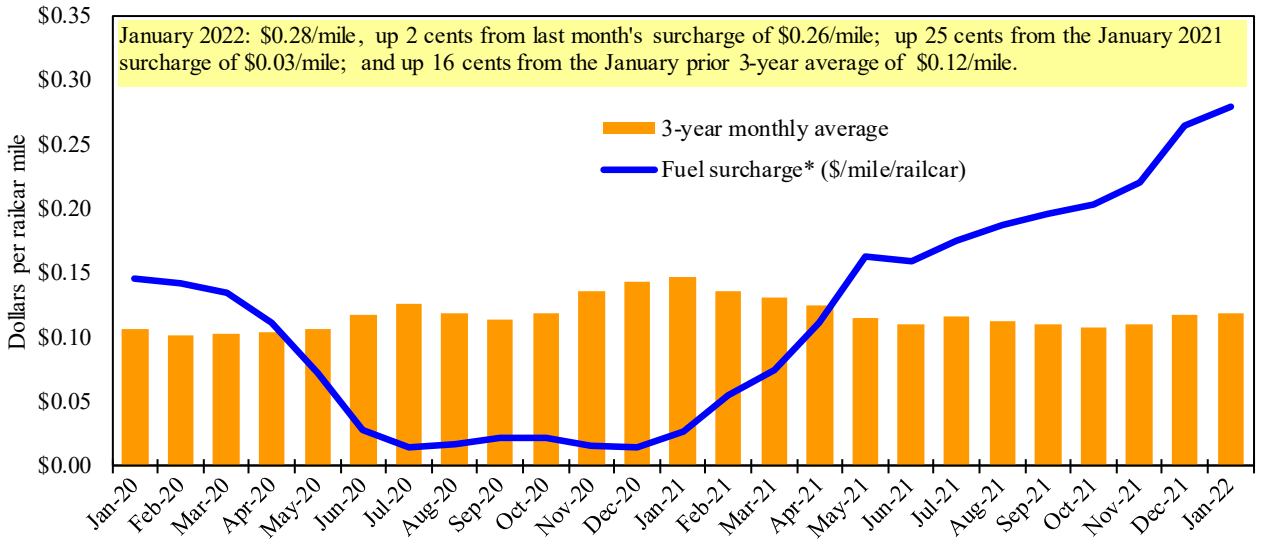
[5] As of January 1, both BNSF and Union Pacific changed their billing and reporting of rates to Mexico.

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.

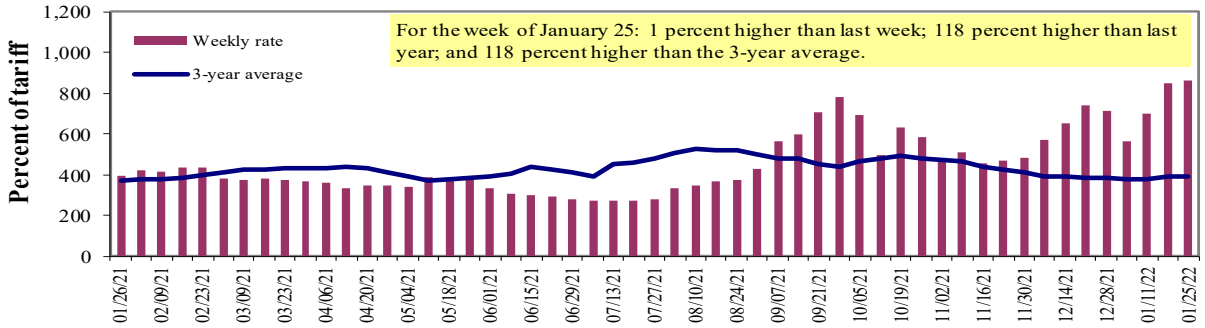
* Beginning January 2009, the Canadian Pacific fuel surcharge is computed by a monthly average of the bi-weekly fuel surcharge.

**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

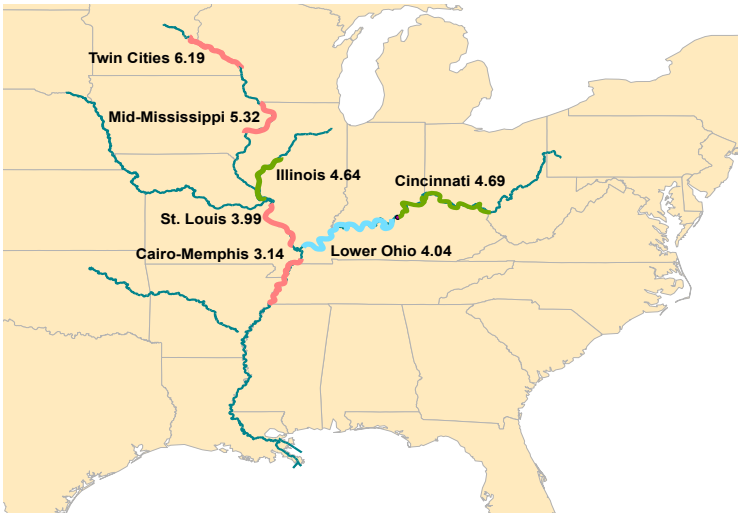
		Twin Cities	Mid-Mississippi	Lower Illinois River	St. Louis	Cincinnati	Lower Ohio	Cairo-Memphis
Rate[1]	1/25/2022	-	-	860	775	770	770	625
	1/18/2022	-	-	850	730	725	725	575
$/ton	1/25/2022	-	-	39.90	30.92	36.11	31.11	19.63
	1/18/2022	-	-	39.44	29.13	34.00	29.29	18.06
Current week % change from the same week:								
	Last year	-	-	118	174	134	134	145
	3-year avg. [2]	-	-	118	163	135	135	129
Rate[1]	February	-	-	710	578	625	625	468
	April	495	490	471	386	390	390	322

[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

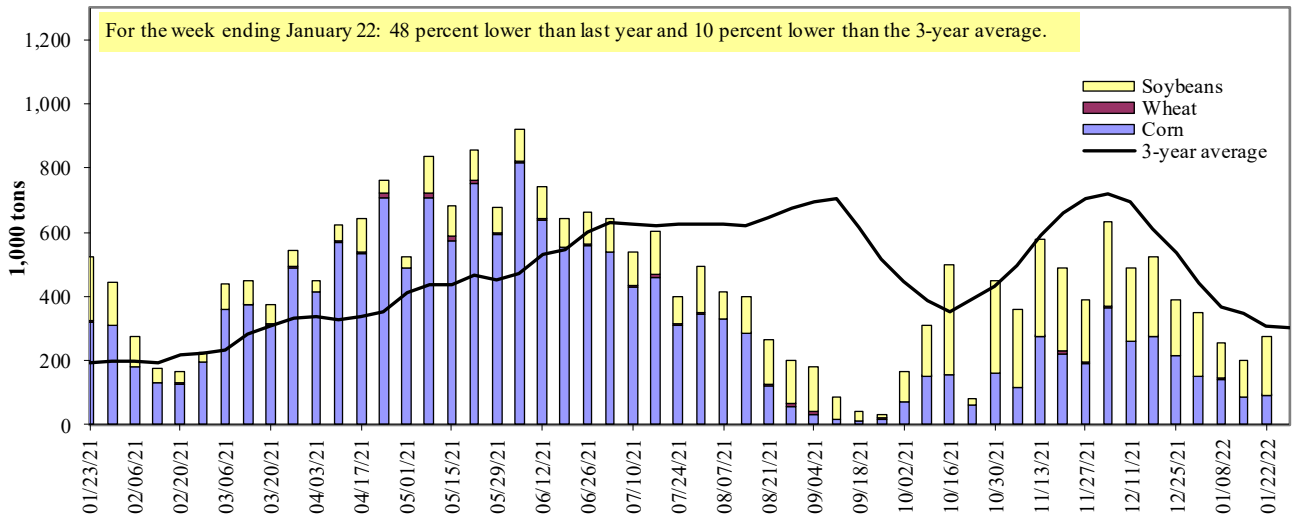
Select applicable index from market quotes are included in tables on this page. The 1976 benchmark rates per ton are provided in map.



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 01/22/2022	Corn	Wheat	Soybeans	Other	Total
Mississippi River					
Rock Island, IL (L15)	0	0	0	0	0
Winfield, MO (L25)	24	6	13	0	43
Alton, IL (L26)	98	2	170	0	269
Granite City, IL (L27)	90	2	183	0	274
Illinois River (La Grange)	68	0	139	0	207
Ohio River (Olmsted)	218	12	229	0	459
Arkansas River (L1)	6	11	25	0	42
Weekly total - 2022	314	24	437	0	775
Weekly total - 2021	645	13	445	5	1,108
2022 YTD[1]	819	80	901	12	1,812
2021 YTD[1]	1,394	43	1,188	52	2,677
2022 as % of 2021 YTD	59	187	76	22	68
Last 4 weeks as % of 2021[2]	58	174	80	37	69
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.

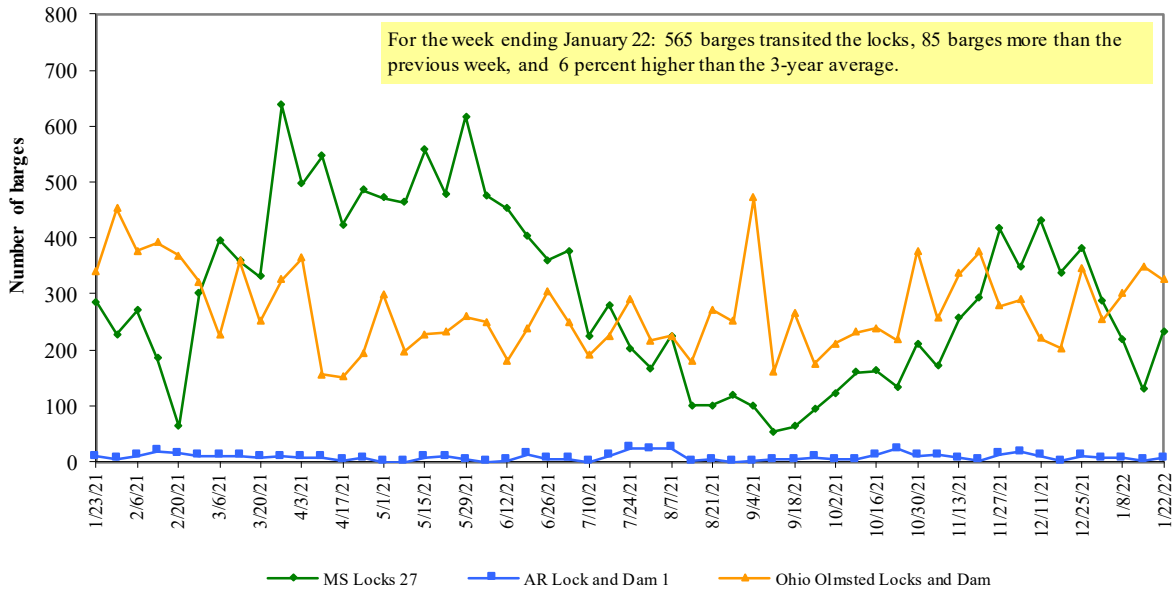
[2] As a percent of same period in 2020.

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

Source: U.S. Army Corps of Engineers.

Figure 11

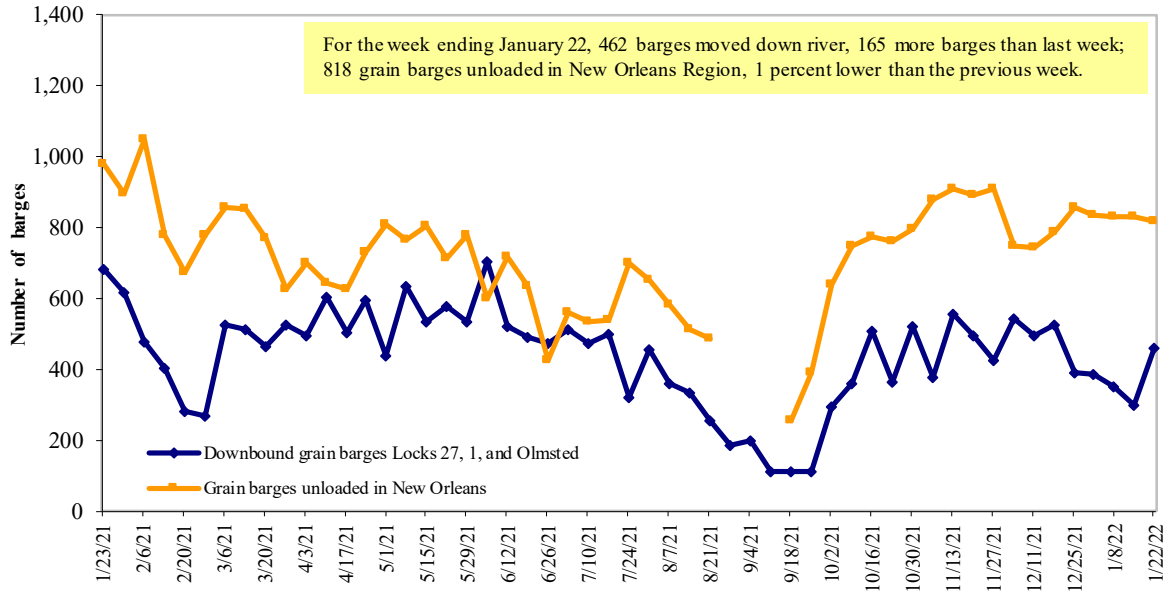
Upbound empty barges transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam



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 1/24/2022 (U.S. $/gallon)

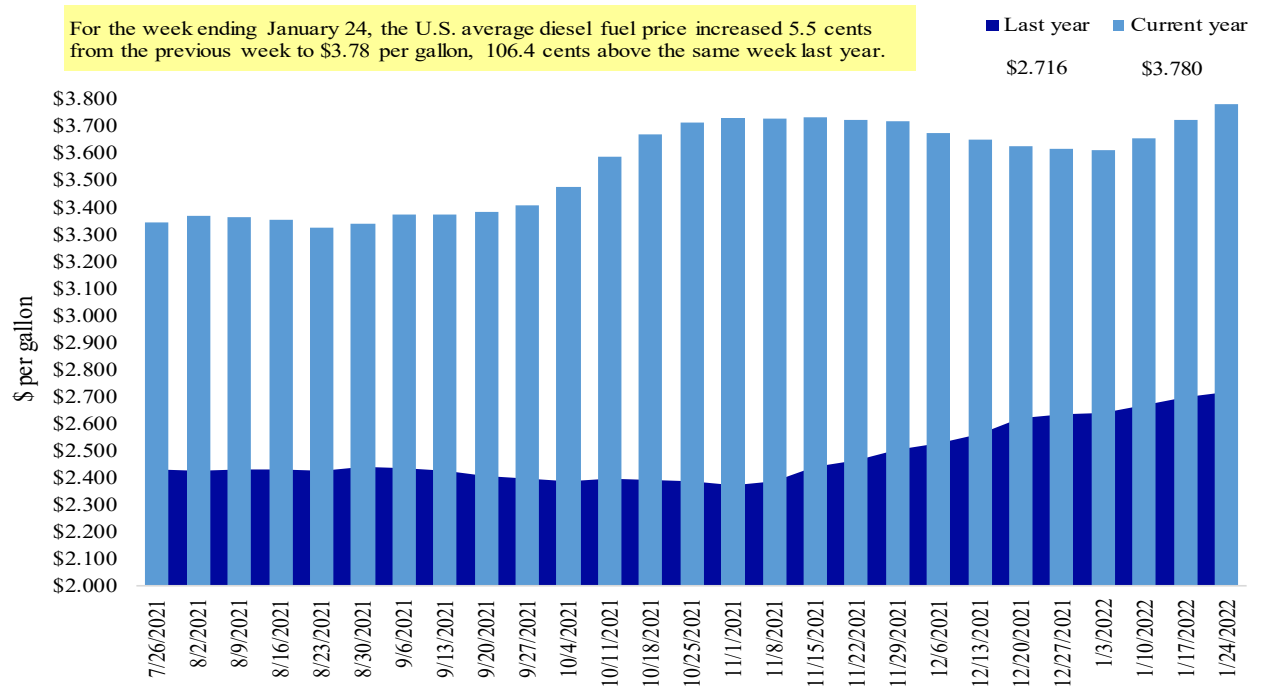
Region	Location	Price	Change from Week ago	Change from Year ago
I	East Coast	3.781	0.062	1.018
	New England	3.777	0.079	0.996
	Central Atlantic	3.934	0.057	0.992
	Lower Atlantic	3.686	0.062	1.044
II	Midwest	3.656	0.053	1.000
III	Gulf Coast	3.531	0.068	1.048
IV	Rocky Mountain	3.698	0.020	1.085
V	West Coast	4.490	0.039	1.314
	West Coast less California	4.110	0.043	1.294
	California	4.824	0.035	1.347
Total	United States	3.780	0.055	1.064

[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]									
1/13/2022	2,017	702	1,273	783	55	4,830	25,584	9,670	40,084
This week year ago	1,394	476	1,922	2,423	171	6,385	29,212	14,000	49,597
Cumulative exports-marketing year[2]									
2021/22 YTD	4,484	1,787	3,155	2,161	113	11,698	16,962	33,438	62,099
2020/21 YTD	5,855	1,110	4,350	3,202	489	15,005	17,607	43,291	75,903
YTD 2021/22 as % of 2020/21	77	161	73	67	23	78	96	77	82
Last 4 wks. as % of same period 2020/21*	148	148	65	33	24	76	90	79	85
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 1/13/2022	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	12,550	10,535	19	14,817
Japan	4,565	6,347	(28)	11,082
China	12,433	11,769	6	7,920
Columbia	2,526	2,309	9	4,491
Korea	78	1,136	(93)	3,302
Top 5 importers	**32,152**	**32,096**	**0**	**41,613**
Total U.S. corn export sales	**42,546**	**46,820**	**(9)**	**53,145**
% of projected exports	69%	67%		
Change from prior week[2]	**1,091**	**1,438**		
Top 5 importers' share of U.S. corn export sales	76%	69%		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 1/13/2022	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	24,884	34,334	(28)	21,666
Mexico	3,514	3,643	(4)	4,754
Egypt	2,052	1,951	5	3,093
Indonesia	808	1,209	(33)	2,325
Japan	1,351	1,302	4	2,275
Top 5 importers	**32,609**	**42,439**	**(23)**	**34,113**
Total U.S. soybean export sales	**43,108**	**57,291**	**(25)**	**50,758**
% of projected exports	77%	93%		
change from prior week[2]	**671**	**1,818**		
Top 5 importers' share of U.S. soybean export sales	76%	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 1/13/2022	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	2,894	2,803	3	3,388
Philippines	2,446	2,649	(8)	3,121
Japan	1,956	2,016	(3)	2,567
Korea	1,016	1,418	(28)	1,501
Nigeria	1,697	1,016	67	1,490
China	848	2,450	(65)	1,268
Taiwan	714	942	(24)	1,187
Indonesia	67	937	(93)	1,131
Thailand	510	701	(27)	768
Italy	190	545	(65)	681
Top 10 importers	**12,336**	**15,478**	(20)	**17,102**
Total U.S. wheat export sales	**16,528**	**21,390**	(23)	**24,617**
% of projected exports	74%	79%		
change from prior week[2]	**381**	**330**		
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 01/20/22	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	202	185	109	471	694	68	52	54	13,243
Corn	261	246	106	601	849	71	71	108	13,420
Soybeans	501	490	102	1,203	1,495	80	89	150	14,540
Total	**964**	**920**	**105**	**2,274**	**3,037**	**75**	**74**	**105**	**41,203**
Mississippi Gulf									
Wheat	105	106	99	266	128	208	223	137	3,202
Corn	624	777	80	2,014	2,293	88	79	112	38,498
Soybeans	715	1,159	62	2,480	3,927	63	68	95	27,159
Total	**1,443**	**2,042**	**71**	**4,760**	**6,348**	**75**	**75**	**102**	**68,858**
Texas Gulf									
Wheat	95	45	211	187	235	80	87	73	3,888
Corn	32	0	n/a	32	11	307	307	128	627
Soybeans	0	0	n/a	0	430	0	0	1	1,611
Total	**127**	**45**	**282**	**220**	**676**	**33**	**31**	**49**	**6,126**
Interior									
Wheat	20	69	30	94	128	74	81	88	2,972
Corn	179	190	94	493	466	106	115	135	10,147
Soybeans	133	128	104	381	503	76	76	95	6,525
Total	**332**	**387**	**86**	**968**	**1,097**	**88**	**93**	**112**	**19,644**
Great Lakes									
Wheat	0	0	n/a	0	12	0	0	0	536
Corn	0	0	n/a	0	0	n/a	n/a	n/a	145
Soybeans	0	0	n/a	0	0	n/a	n/a	0	592
Total	**0**	**0**	**n/a**	**0**	**12**	**0**	**0**	**0**	**1,273**
Atlantic									
Wheat	0	0	n/a	4	0	n/a	n/a	n/a	128
Corn	0	3	0	10	0	n/a	n/a	219	85
Soybeans	17	40	42	66	261	25	30	52	2,184
Total	**17**	**43**	**39**	**81**	**261**	**31**	**36**	**59**	**2,397**
U.S. total from ports*									
Wheat	422	405	104	1,023	1,197	85	76	72	23,969
Corn	1,096	1,215	90	3,150	3,618	87	83	115	62,921
Soybeans	1,366	1,817	75	4,130	6,616	62	67	101	52,612
Total	**2,884**	**3,437**	**84**	**8,302**	**11,431**	**73**	**73**	**101**	**139,501**

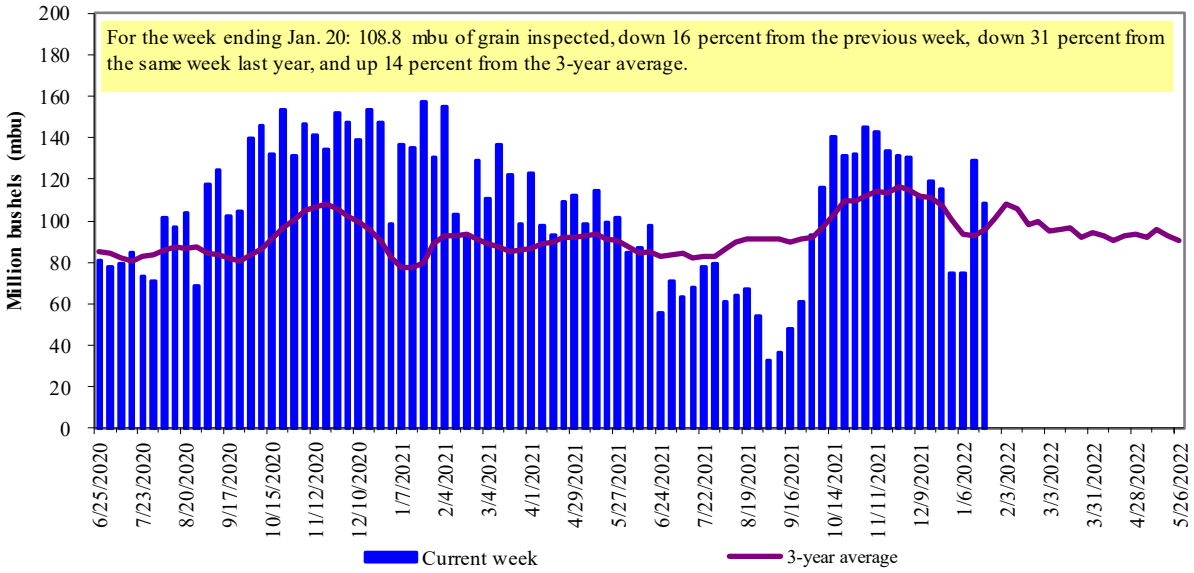
*Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

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)

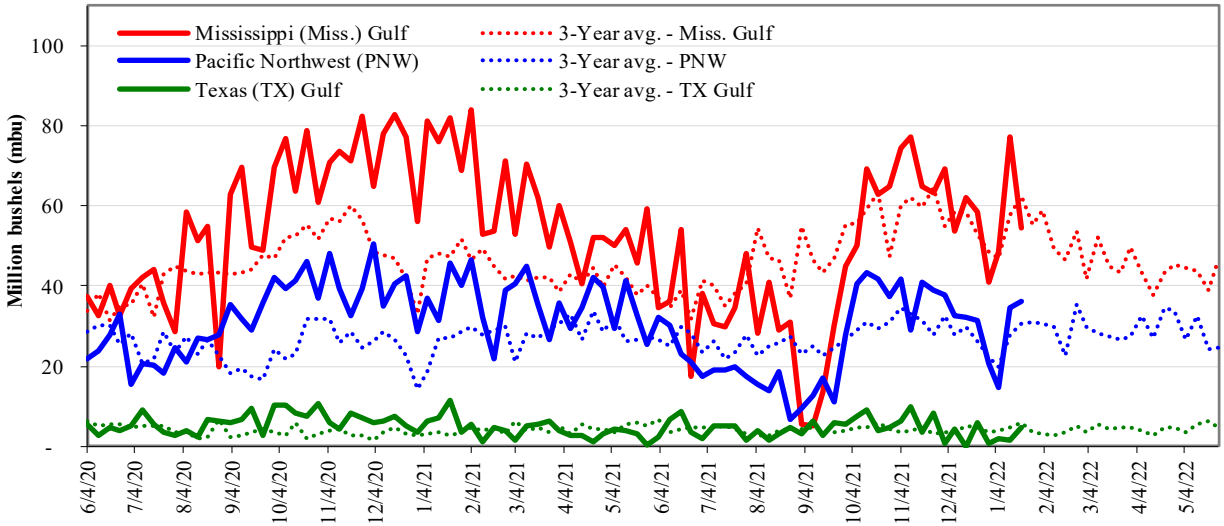


Note: 3-year average consists of 4-week running average.

Source: USDA, Federal Grain Inspection Service.

Figure 15

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



Week ending 01/20/22 inspections (mbu):	
MS Gulf:	54.7
PNW:	36.1
TX Gulf:	4.8

Percent change from:	MS Gulf	TX Gulf	U.S. Gulf	PNW
Last wk:	down 29	up 187	down 25	up 5
Last Year (same wk):	down 33	down 58	down 36	down 21
3-yr avg. (4-wk. mov. Avg):	up 1	up 7	up 2	up 44

Source: USDA, Federal Grain Inspection Service.

Table 17

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

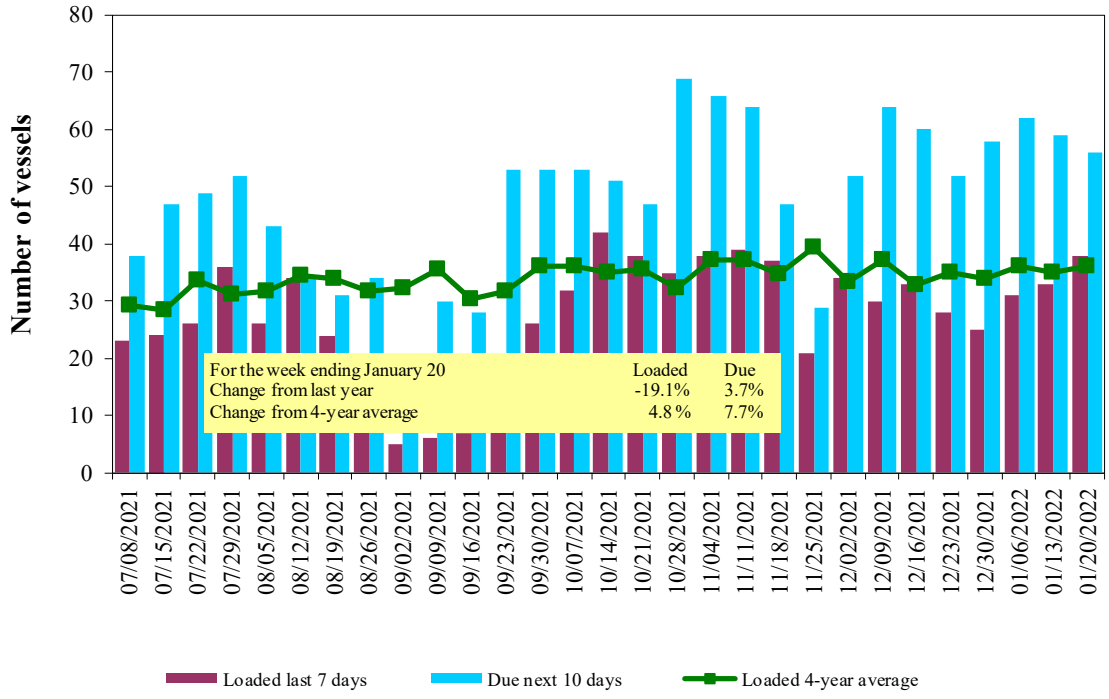
	Gulf			Pacific Northwest
Date	In port	Loaded 7-days	Due next 10-days	In port
1/20/2022	46	38	56	23
1/13/2022	48	33	59	23
2021 range	(10…57)	(5...48)	(15...69)	(4…27)
2021 average	34	32	49	15

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

Source: USDA, Agricultural Marketing Service.

Figure 16

U.S. Gulf[1] vessel loading activity

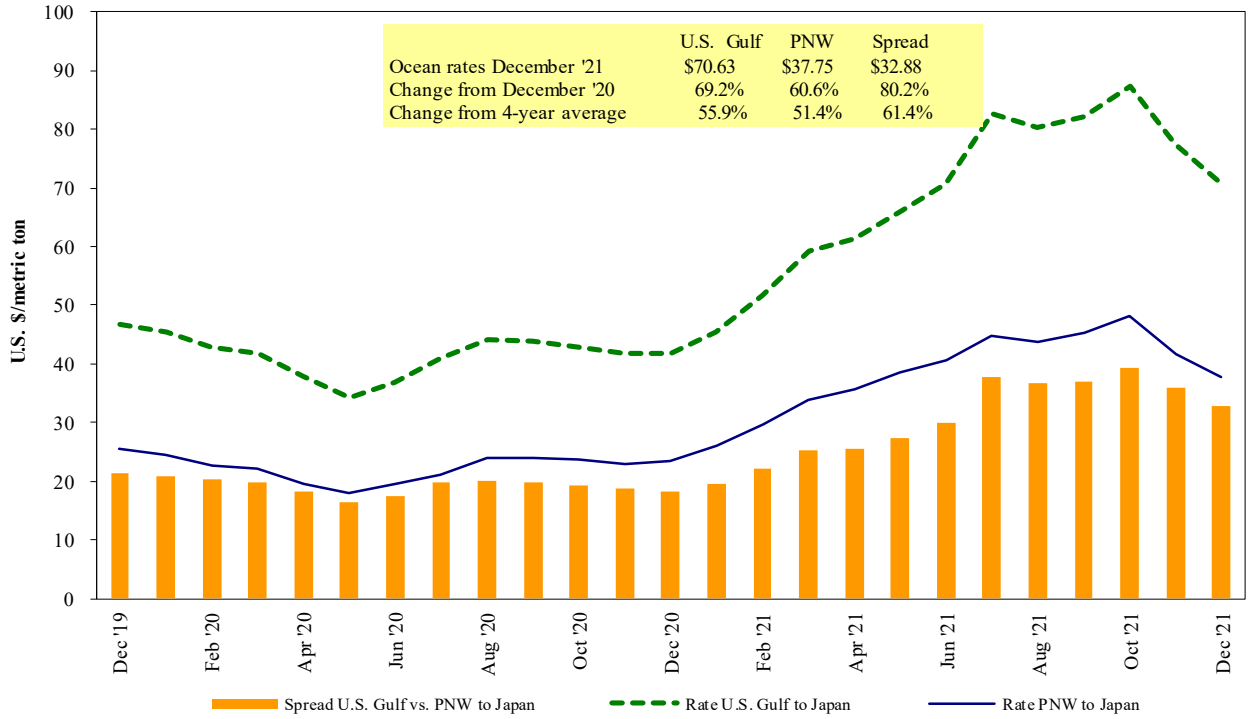


[1]U.S. Gulf includes Mississippi, Texas, and East Gulf.

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 01/22/2022

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

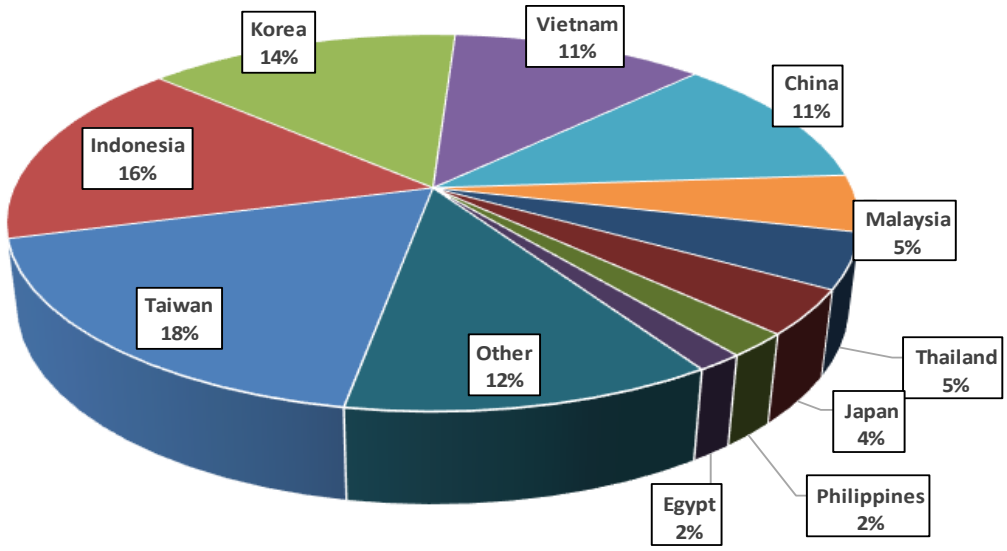
*50 percent of food aid from the United States is required to be shipped on U.S.-flag vessels.

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.

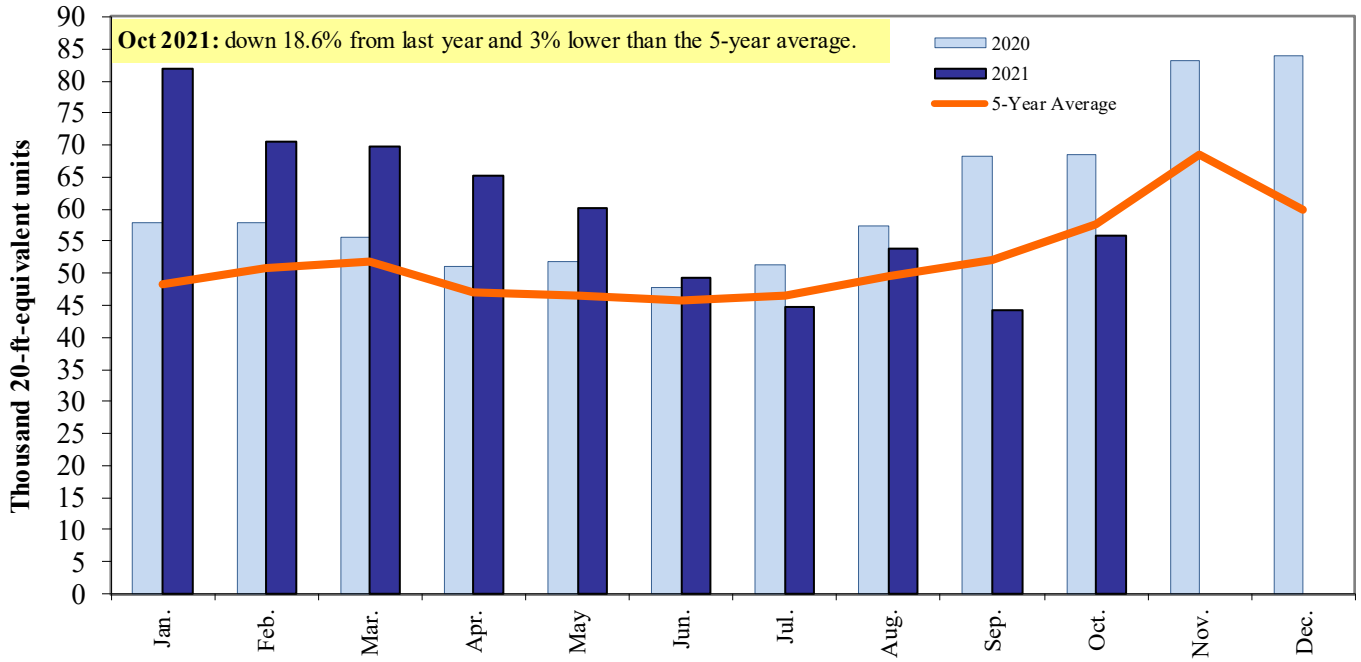
Figure 18
Top 10 destination markets for U.S. containerized grain exports, Jan-Oct 2021



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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