USDA Agricultural Marketing Service
U.S. DEPARTMENT OF AGRICULTURE

Grain Transportation Report

A weekly publication of the Agricultural Marketing Service
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Contents

The next release is December 16, 2021

WEEKLY HIGHLIGHTS

ATRI Releases 2021 *Operational Costs of Trucking* Report

On November 23, the American Transportation Research Institute (ATRI) released its 2021 update to *An Analysis of the Operational Costs of Trucking*. The report uses 2020 financial data from motor carriers of all sectors and fleet sizes to highlight the impacts of the COVID-19 pandemic on trucking. Faster speeds due to less traffic during the pandemic affected several cost categories. Other impacts included a 21-percent increase in dead-head miles (i.e., trucks traveling empty after dropping off their loads); an average 89,358-mile decrease in annual operating miles; and a 20-percent decline in fuel costs. Other trends unrelated to COVID-19 included a more than 18-percent increase in insurance costs—the highest in the history of ATRI's operation costs report history. Although 2019-20 truck driver wages rose—with overall truck driver compensation at 73.7 cents/mile—fringe benefits decreased. Safety and retention bonuses rose by 10.5 percent and 14.2 percent, respectively, while starting bonuses fell by 10 percent. ATRI speculates carriers may have prioritized safety and retention bonuses over starting bonuses because of the high turnover of drivers in 2020 and 2021. The average marginal cost per mile for motor carriers in 2020 fell by 5 cents/mile to $1.64, while the total hourly per-mile costs dropped slightly to $66.87.

Dike Repair Delays Lower Mississippi River Barge Traffic

On December 2, the Army Corps of Engineers (USACE) started repair of the stone dike at Victoria Bend on the Lower Mississippi River at Mile 595.5 (near Waxhaw, MS), delaying both northbound and southbound traffic. USACE had planned to allow vessels to pass through the construction site 12 hours per day (6 pm to 6 am) during the first week of the work, but operations were affected by nearby dredging and an unexpected river closure on December 3. Following the reopening to limited traffic on December 7, delays are expected to gradually improve over the next 2 weeks, and dredging will end on December 11. The dike repair work is scheduled to finish by December 30.

FMCSA Extends Emergency HOS Waiver for Feed and Fuel

On November 29, the Federal Motor Carrier Safety Administration (FMCSA) extended through February 28, 2022, its waiver on hours-of-service (HOS) requirements for trucks transporting feed and ethanol. FMCSA cautions the waiver may end sooner if conditions warrant. Originally issued in 2020 to help address the national COVID-19 emergency, the current waiver still exempts property-carrying vehicles from FMCSA-mandated maximum driving times. Like previous iterations, the waiver forbids motor carriers from asking truckers to haul loads when they say they are tired. The waiver does not cover routine commercial deliveries—including mixed loads—with nominal amounts of waiver-qualifying materials.

Snapshots by Sector

Export Sales

For the week ending November 25, **unshipped balances** of wheat, corn, and soybeans for marketing year 2021/22 totaled 46.4 million metric tons (mmt), down 22 percent from same time last year and down 3 percent from the previous week. Net **corn export sales** were 1.021 mmt, down 29 percent from the previous week. Net **soybean export sales** were 1.063 mmt, down 32 percent from the previous week. Net weekly **wheat export sales** were 0.080 mmt, down 86 percent from the previous week.

Rail

U.S. Class I railroads originated 23,616 **grain carloads** during the week ending November 27. This was a 4-percent decrease from the previous week, 6 percent fewer than last year, and 8 percent more than the 3-year average.

Average December shuttle **secondary railcar** bids/offers (per car) were $404 above tariff for the week ending December 2. This was $104 less than last week and $362 more than this week last year. There were no non-shuttle bids/offers this week.

Barge

For the week ending December 4, **barged grain movements** totaled 867,202 tons. This was 27 percent higher than the previous week and 22 percent less than the same period last year.

For the week ending December 4, 541 grain barges **moved down river**—116 more barges than the previous week. There were 749 grain barges unloaded in the New Orleans region, 18 percent fewer than last week.

Ocean

For the week ending December 2, 34 **oceangoing grain vessels** were loaded in the Gulf—down 3 percent from the same period last year. Within the next 10 days (starting December 3), 52 vessels were expected to be loaded—16 percent fewer than the same period last year.

As of December 2, the rate for shipping a metric ton (mt) of grain from the U.S. Gulf to Japan was $71.00. This was 1 percent lower than the last available rate on November 18. The rate from PNW to Japan was $37.50 per mt, unchanged from the rate on November 18.

Fuel

For the week ending December 6, the U.S. average **diesel fuel price** decreased by 4.6 cents from the previous week to $3.674 per gallon, $1.15 above the same week last year. At $3.536 per gallon, the average Midwest diesel price has declined for 5 consecutive weeks and is at its lowest level since October 11, 2021.

Preferred citation: U.S. Department of Agriculture, Agricultural Marketing Service. *Grain Transportation Report.* December 9, 2021.
Web: http://dx.doi.org/10.9752/TS056.12-09-2021

Feature Article/Calendar

Third-Quarter Landed Costs of U.S. Soybeans Trend Down, While Brazil's Tick Up

The world's two leading producers of soybeans—United States and Brazil—have long competed for the same overseas markets. The competitiveness of U.S. and Brazilian soybeans depends on low transportation and landed costs (i.e., transportation costs plus farm values) to China and Europe. For both soybean-exporting countries, China and Europe are key destinations. This article compares quarterly and yearly changes in the costs of moving soybeans from the United States and Brazil to Shanghai, China (table 1) and to Hamburg, Germany (table 2).

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

	2020 3rd qtr.	2021 2nd qtr.	2021 3rd qtr.	Percent change Yr. to yr.	Percent change Qtr. to qtr.	2020 3rd qtr.	2021 2nd qtr.	2021 3rd qtr.	Percent change Yr. to yr.	Percent change Qtr. to qtr.
	United States (via U.S. Gulf)									
	Minneapolis, MN					Davenport, IA				
	--$/mt--					--$/mt--				
Truck	12.38	13.99	13.18	6.46	-5.79	12.38	13.99	13.18	6.46	-5.79
Rail[1]	-	-	-	-	-	-	-	-	-	-
Barge	29.89	29.61	32.62	9.13	10.17	21.58	20.17	26.21	21.46	29.95
Ocean[2]	42.14	64.88	80.83	91.81	24.58	42.14	64.88	80.83	91.81	24.58
Total transportation	84.41	108.48	126.63	50.02	16.73	76.10	99.04	120.22	57.98	21.39
Farm value[3]	331.43	529.11	483.79	45.97	-8.57	322.85	529.11	494.82	53.27	-6.48
Landed cost[4]	415.84	637.59	610.42	46.79	-4.26	398.95	628.15	615.04	54.16	-2.09
Transport % of landed cost	20.30	17.01	20.74	-	-	19.08	15.77	19.55	-	-
	Via PNW									
	Fargo, ND					Sioux Falls, SD				
Truck	12.38	13.99	13.18	6.46	-5.79	12.38	13.99	13.18	6.46	-5.79
Rail[1]	57.10	57.10	57.76	1.16	1.16	58.09	58.09	58.76	1.15	1.15
Ocean	22.37	37.60	43.98	96.60	16.97	22.37	37.60	43.98	96.60	16.97
Total transportation	91.85	108.69	114.92	25.12	5.73	92.84	109.68	115.92	24.86	5.69
Farm value	305.83	518.09	462.97	51.38	-10.64	310.36	525.43	483.79	55.88	-7.92
Landed cost	397.68	626.78	577.89	45.32	-7.80	403.20	635.11	599.71	48.74	-5.57
Transport % of landed cost	23.10	17.34	19.89	-	-	23.03	17.27	19.33	-	-
	Brazil									
	North MT[5] - Santos[6]					South GO[5] - Paranagua[6]				
	--$/mt--					--$/mt--				
Truck	60.52	66.24	59.59	-1.54	-10.04	35.57	38.73	34.66	-2.56	-10.51
Ocean[7]	31.33	50.60	64.00	104.28	26.48	33.08	52.40	66.00	99.52	25.95
Total transportation	91.85	116.84	123.59	34.56	5.78	68.65	91.13	100.66	46.63	10.46
Farm Value[8]	367.89	495.57	513.31	39.53	3.58	333.45	500.77	495.90	48.72	-0.97
Landed Cost	459.74	612.41	636.90	38.53	4.00	402.10	591.90	596.56	48.36	0.79
Transport % of landed cost	19.98	19.08	19.40	-	-	17.07	15.40	16.87	-	-

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

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

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

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

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

[6]Export ports.

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

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

Note: qtr. = quarter; yr. = year; mt = metric ton; "-" indicates data not required or applicable. Total may not add exactly because of rounding.

Source: Compiled by the USDA, Agricultural Marketing Service.

Quarter-to-quarter transportation costs. From second quarter 2021 to third quarter 2021 (quarter to quarter), total transportation costs rose for exporting U.S. soybeans to China—either through the U.S. Gulf or Pacific Northwest (PNW) (table 1) or through the U.S. Gulf to Germany (table 2). Brazil's transportation costs followed the same upward trend as U.S. costs.

In the United States, transportation costs to Germany climbed with rising ocean freight and barge rates, and costs to China increased with rising ocean freight, barge, and modestly rising rail rates (public tariff, plus the fuel surcharge). In Brazil, transportation costs rose with higher ocean freight rates. Truck rates fell in both the United States and Brazil. In the United States, barge rates increased because of high demand for empty barges, more scrapping activity, and new logistical challenges related to Hurricane Ida (*Grain Transportation Report (GTR)*, October 28, 2021). Ocean freight rates rose globally in response to strong trade of bulk commodities and tight vessel supply, created by congestion and other logistical inefficiencies (*GTR*, October 14, 2021).

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

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

	2020 3rd qtr.	2021 2nd qtr.	2021 3rd qtr.	Percent change Yr. to yr.	Percent change Qtr. to qtr.	2020 3rd qtr.	2021 2nd qtr.	2021 3rd qtr.	Percent change Yr. to yr.	Percent change Qtr. to qtr.
	United States (via U.S. Gulf)									
	Minneapolis, MN --$/mt--					Davenport, IA --$/mt--				
Truck	12.38	13.99	13.18	6.46	-5.79	12.38	13.99	13.18	6.46	-5.79
Rail[1]	-	-	-	-	-	-	-	-	-	-
Barge	29.89	29.61	32.62	9.13	10.17	21.58	20.17	26.21	21.46	29.95
Ocean[2]	19.41	23.19	28.21	45.34	21.65	19.41	23.19	28.21	45.34	21.65
Total transportation	61.68	66.79	74.01	19.99	10.81	53.37	57.35	67.60	26.66	17.87
Farm value[3]	331.43	529.11	483.79	45.97	-8.57	322.85	529.11	494.82	53.27	-6.48
Landed cost[4]	393.11	595.90	557.80	41.89	-6.39	376.22	586.46	562.42	49.49	-4.10
Transport % of landed cost	15.69	11.21	13.27	-	-	14.19	9.78	12.02	-	-
	Brazil									
	North MT[5] - Santos[6] --$/mt--					South GO[5] - Paranagua[6] --$/mt--				
Truck	60.52	66.24	59.59	-1.54	-10.04	35.57	38.73	34.66	-2.56	-10.51
Ocean[7]	24.00	42.70	54.00	125.00	26.46	25.00	41.90	53.00	112.00	26.49
Total transportation	84.52	108.94	113.59	34.39	4.27	60.57	80.63	87.66	44.73	8.72
Farm value[8]	367.89	495.57	513.31	39.53	3.58	333.43	500.77	495.90	48.73	-0.97
Landed cost	452.41	604.51	626.90	38.57	3.70	394.00	581.40	583.56	48.11	0.37
Transport % of landed cost	18.68	18.02	18.12	-	-	15.37	13.87	15.02	-	-

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

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

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

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

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

[6]Export ports.

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

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

Note: qtr. = quarter; yr. = year; mt = metric ton; "-" indicates data not required or applicable. Total may not add exactly because of rounding.
Source: Compiled by the USDA, Agricultural Marketing Service.

Quarter-to-quarter landed costs. Quarter to quarter, landed costs decreased in the United States, but increased in Brazil. For shipments from the United States, falling farm values were the main reasons behind declining landed costs. In Brazil, the reasons behind rising landed costs varied. For shipments from North Mato Grosso (MT), landed costs rose because of both higher transportation costs and higher farm values. However, for shipments from South Goiás (GO), rising transportation costs were the main driver of rising landed costs. The transportation share of third-quarter U.S. landed costs was 19-21 percent for shipments to China (table 1) and 12-13 percent for shipments to Germany (table 2). The transportation share of Brazil's total landed costs was 17-19 percent for shipments to China (table 1) and 15-18 percent for shipments to Germany (table 2).

Year-to-year landed costs. Year to year, landed costs rose in both countries. For exports from both countries, the increase reflected higher transportation costs and higher soybean farm values.

U.S. exports to China. According to USDA's Federal Grain Inspection Service, China imported 1.18 million metric tons (mmt) of U.S. soybeans in third quarter 2021, versus 0.11 mmt in the previous quarter and 0.63 mmt in third quarter 2020. Total U.S. soybean exports are projected at 55.79 mmt in marketing year (MY) 2021/22, down from 61.66 mmt in MY 2020/21, according to USDA's November *World Agricultural Supply and Demand Estimates*. On the other hand, Brazil is projected to export 94 mmt in MY 2021/22, up from 81.65 mmt in MY 2020/21. For more on soybean transportation in Brazil, see the quarterly *Brazil Soybean Transportation* report. surajudeen.olowlayemo@usda.gov

Grain Transportation Indicators

Table 1

Grain transport cost indicators[1]

	Truck	Rail		Barge	Ocean	
For the week ending		Non-Shuttle	Shuttle		Gulf	Pacific
12/08/21	247	299	247	318	318	266
12/01/21	250	297	251	267	n/a	n/a

[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)

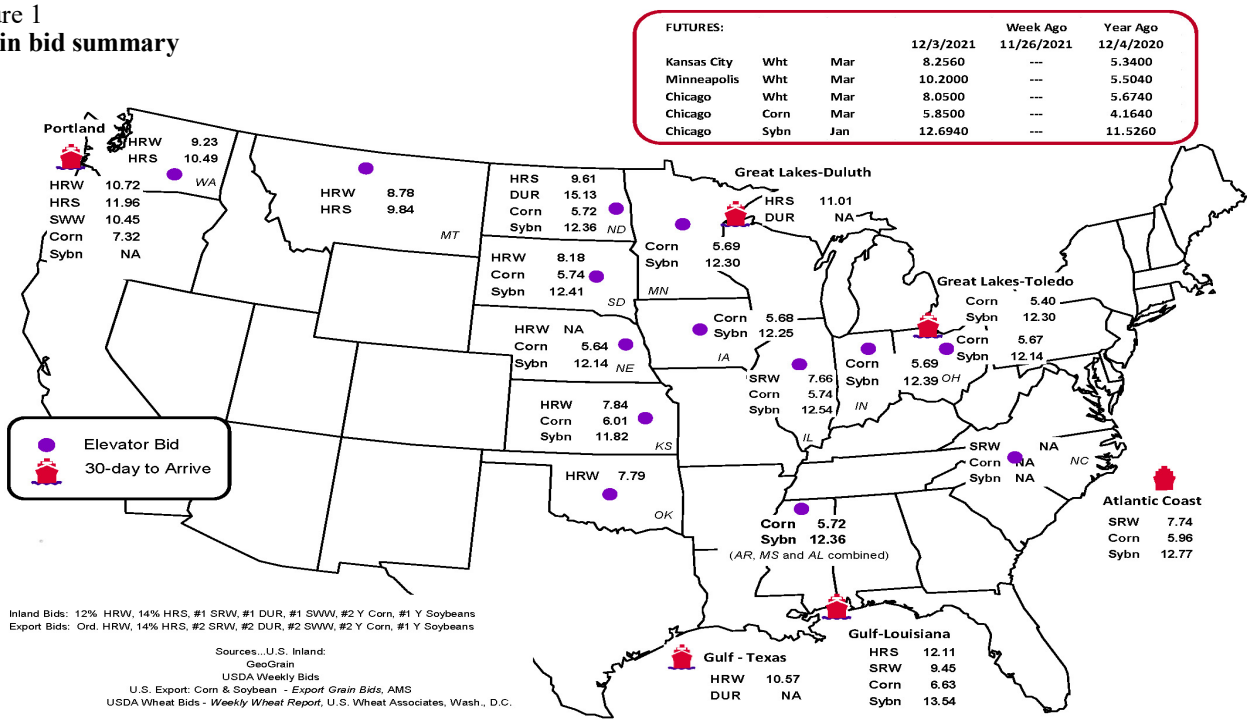
Commodity	Origin–destination	12/3/2021	11/26/2021
Corn	IL–Gulf	-0.89	n/a
Corn	NE–Gulf	-0.99	n/a
Soybean	IA–Gulf	-1.29	n/a
HRW	KS–Gulf	-2.73	n/a
HRS	ND–Portland	-2.35	n/a

Note: nq = no quote; n/a = not available; HRW = hard red winter wheat; HRS = hard red spring wheat.
Source: USDA, Agricultural Marketing Service.

The **grain bid summary** illustrates the market relationships for commodities. Positive and negative adjustments in differential between terminal and futures markets, and the relationship to inland market points, are indicators of changes in fundamental market supply and demand. The map may be used to monitor market and time differentials.

Figure 1

Grain bid summary



Rail Transportation

Table 3

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]
12/01/2021[p]	1,332	1,481	7,084	661	10,558	11/27/2021	3,238
11/24/2021[r]	1,238	1,563	8,639	820	12,260	11/20/2021	2,794
2021 YTD[r]	47,835	62,961	279,357	18,739	408,892	2021 YTD	134,279
2020 YTD[r]	36,940	54,805	260,200	19,542	371,487	2020 YTD	116,568
2021 YTD as % of 2020 YTD	129	115	107	96	110	% change YTD	115
Last 4 weeks as % of 2020[2]	64	75	95	71	85	Last 4wks. % 2020	121
Last 4 weeks as % of 4-year avg.[2]	176	143	135	146	140	Last 4wks. % 4 yr.	111
Total 2020	45,294	64,116	299,882	24,458	433,750	Total 2020	126,407
Total 2019	40,974	51,167	251,181	16,192	359,514	Total 2019	127,622

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

[2] Compared with same 4-weeks in 2020 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.

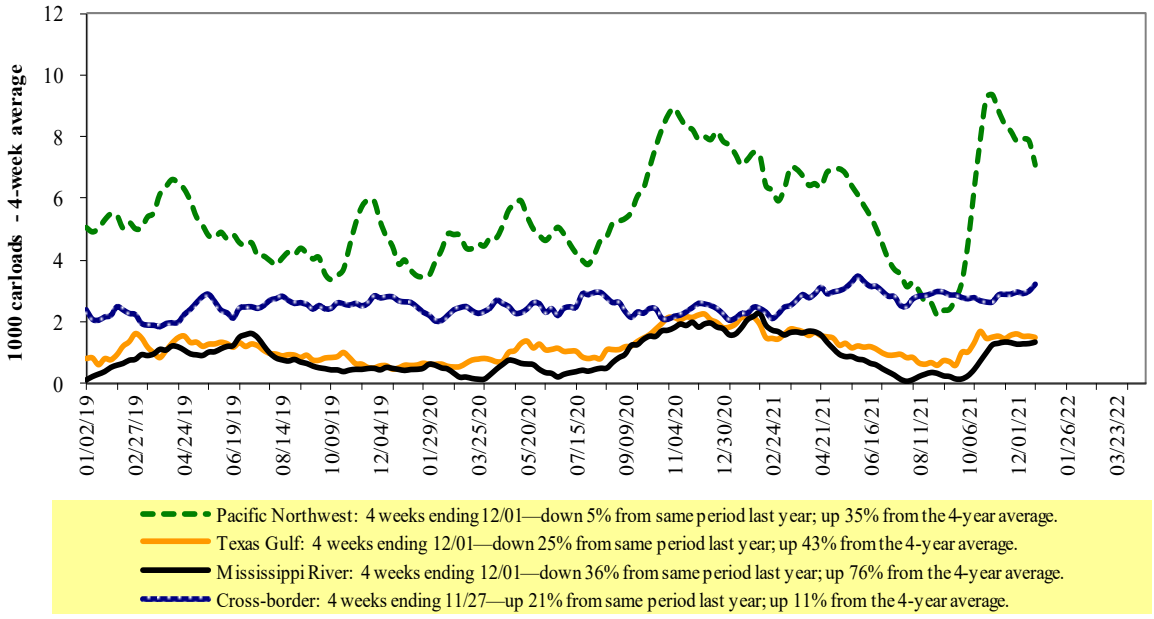
YTD = year-to-date; p = preliminary data; r = revised data; n/a = not available; wks. = weeks; avg. = average.

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	
11/27/2021	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	1,652	1,799	13,532	1,296	5,337	23,616	3,301	4,036
This week last year	1,991	2,305	14,049	1,167	5,484	24,996	5,727	6,845
2021 YTD	83,980	109,650	551,393	57,421	288,955	1,091,399	192,425	222,721
2020 YTD	81,844	116,682	547,282	52,584	262,332	1,060,724	211,903	233,129
2021 YTD as % of 2020 YTD	103	94	101	109	110	103	91	96
Last 4 weeks as % of 2020*	92	67	97	108	94	93	68	75
Last 4 weeks as % of 3-yr. avg.**	103	76	108	122	115	106	81	86
Total 2020	91,659	129,711	613,630	57,782	296,701	1,189,483	238,148	261,778

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

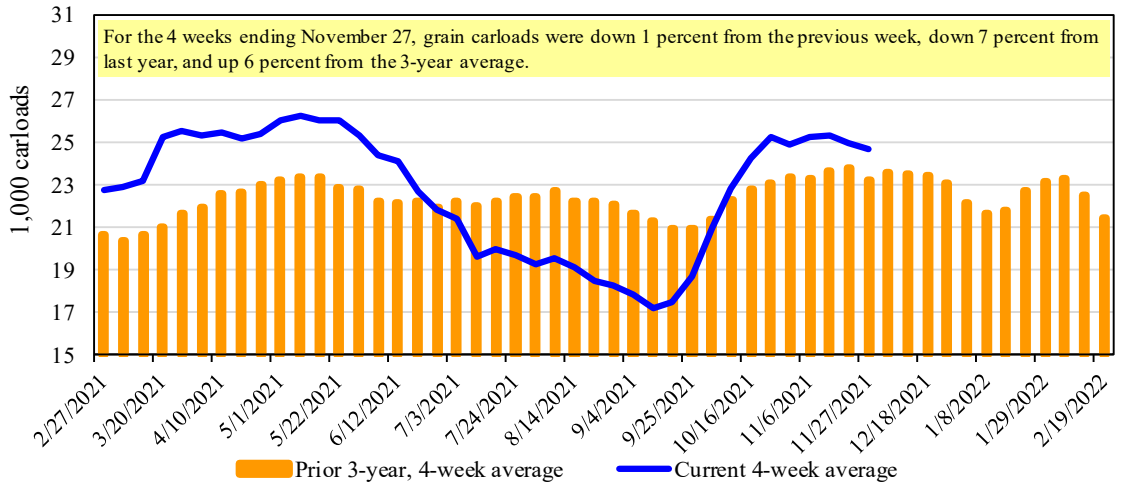
**The past 4 weeks as a percent of the same period from the prior 3-year average. YTD = year-to-date; avg. = average; yr. = year.

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							
12/2/2021		Dec-21	Dec-20	Jan-22	Jan-21	Feb-22	Feb-21	Mar-22	Mar-21
BNSF[3]	COT grain units	no bids	no bids	1	0	no bids	no bids	no bids	no bids
	COT grain single-car	0	101	0	173	0	174	0	135
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.

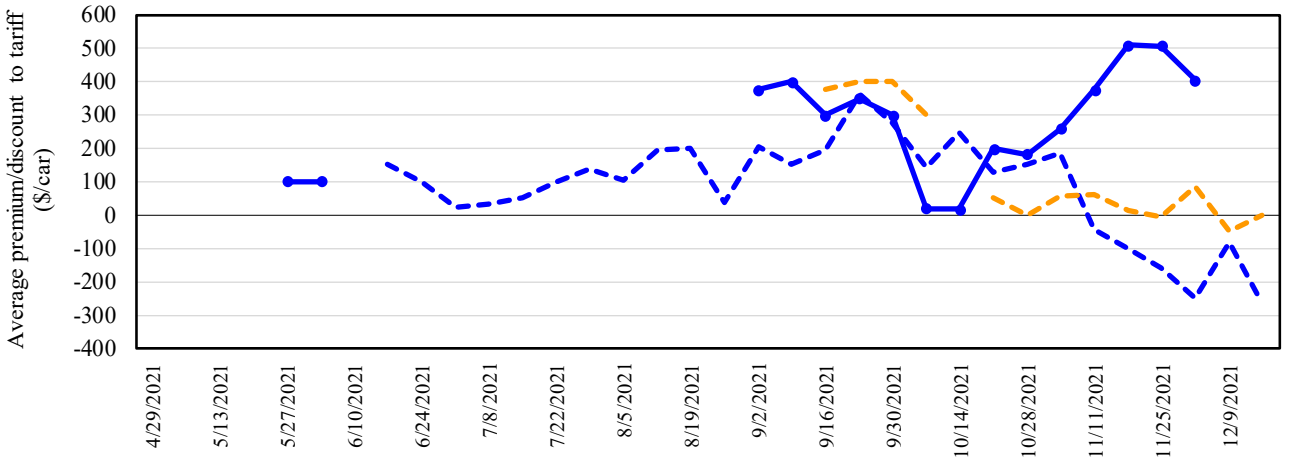
Region 2 includes: CO, IA, KS, MN, NE, WY, and Kansas City and St. Joseph, MO.

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 December 2021, secondary market



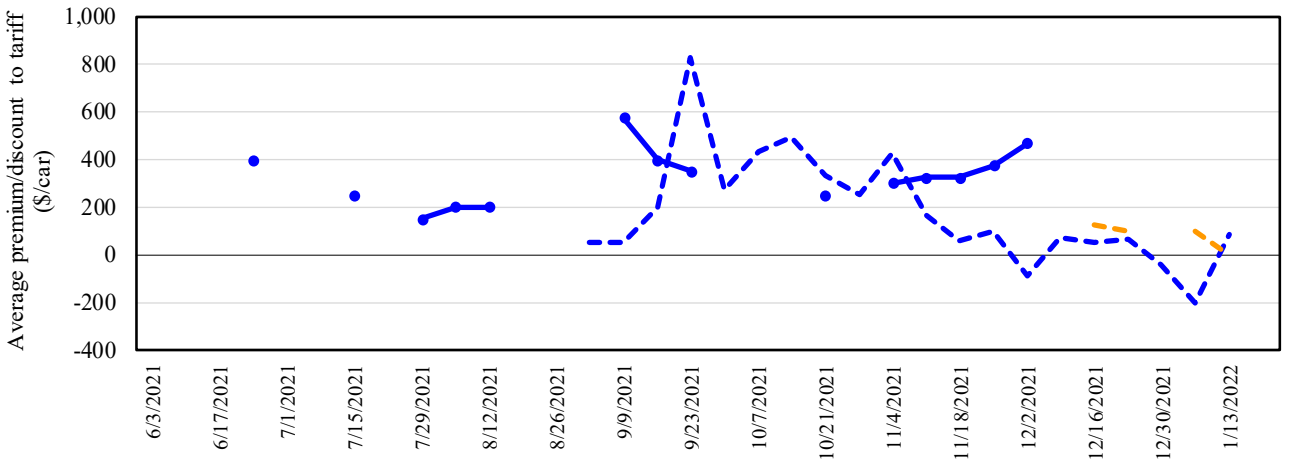
12/2/2021	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$347	$461

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers fell $104 this week and are $106 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 January 2022, secondary market



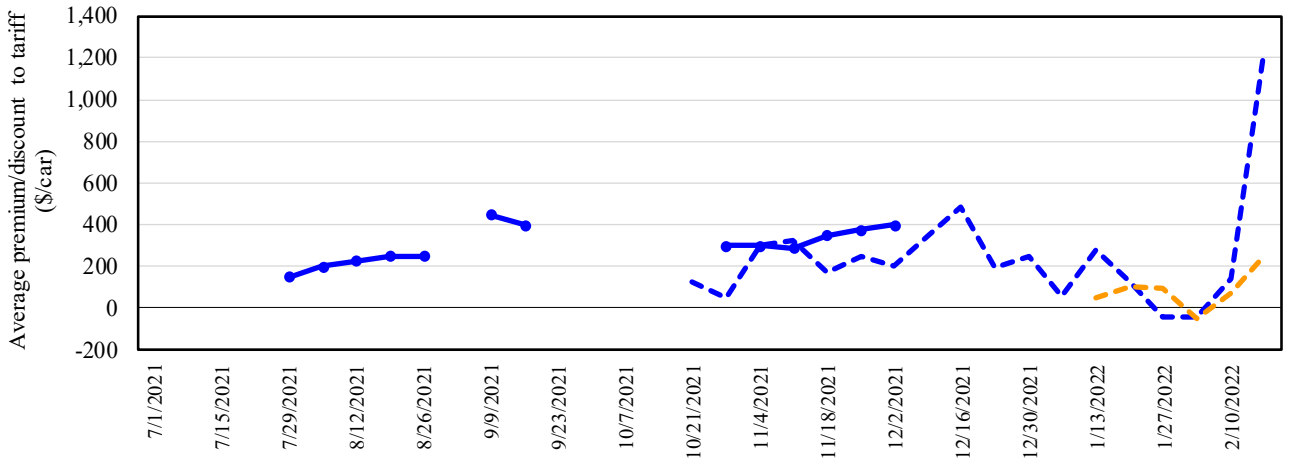
12/2/2021	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$400	$538

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers rose $94 this week and are $106 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 February 2022, secondary market



12/2/2021	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$400	n/a

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers rose $25 this week and are $50 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: 12/2/2021	Delivery period					
		Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-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 2020	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 2020	n/a	n/a	n/a	n/a	n/a	n/a
Shuttle	**BNSF-GF**	**347**	**400**	**400**	**200**	**(200)**	**n/a**
	Change from last week	(57)	(50)	(50)	n/a	(100)	n/a
	Change from same week 2020	364	n/a	n/a	n/a	n/a	n/a
	UP-Pool	**461**	**538**	**n/a**	**250**	**n/a**	**n/a**
	Change from last week	(150)	238	n/a	n/a	n/a	n/a
	Change from same week 2020	361	363	n/a	150	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]

December 2021	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	$412	$40.15	$1.09	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	$5,721	$0	$56.81	$1.55	-5
	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	10
	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.

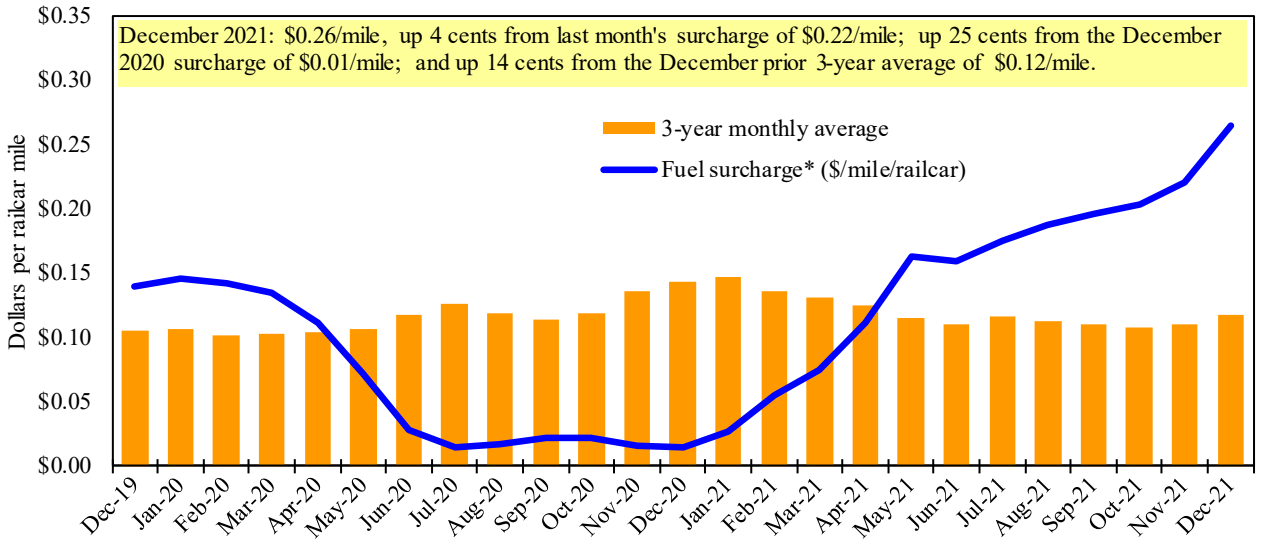
[3]Approximate load per car = 97.87 metric tons: Corn & Sorghum 56 lbs/bu, Wheat & Soybeans 60 lbs/bu.

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

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.

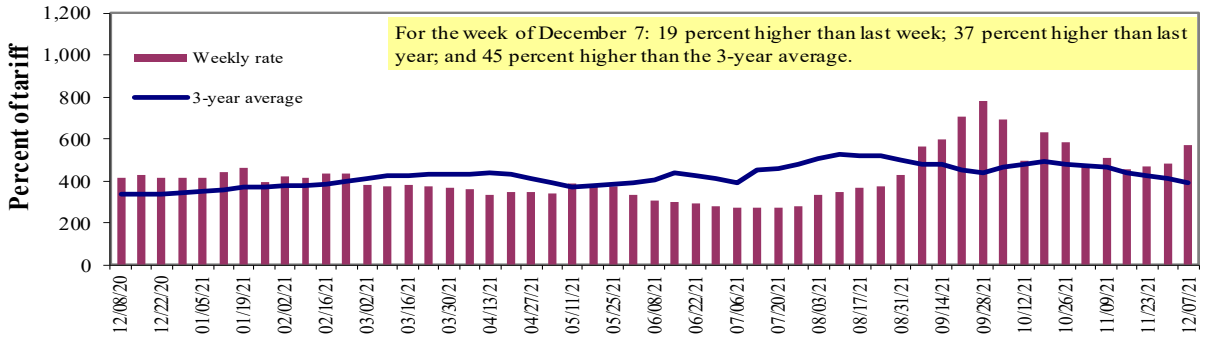
* Beginning January 2009, the Canadian Pacific fuel surcharge is computed by a monthly average of the bi-weekly fuel surcharge.

**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

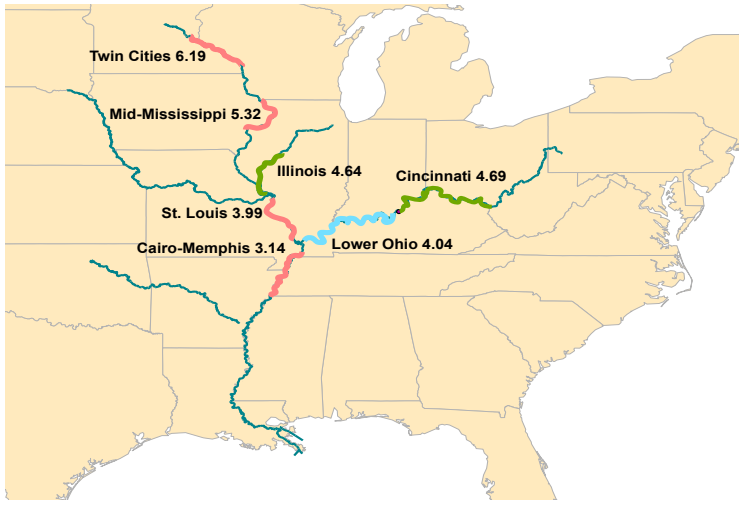
		Twin Cities	Mid-Mississippi	Lower Illinois River	St. Louis	Cincinnati	Lower Ohio	Cairo-Memphis
Rate[1]	12/7/2021	-	610	572	454	590	590	425
	11/30/2021	-	485	480	374	480	480	345
$/ton	12/7/2021	-	32.45	26.54	18.11	27.67	23.84	13.35
	11/30/2021	-	25.80	22.27	14.92	22.51	19.39	10.83
Current week % change from the same week:								
	Last year	-	44	37	45	42	42	47
	3-year avg. [2]	-	57	45	52	74	74	57
Rate[1]	January	-	-	492	385	420	420	340
	March	-	-	418	318	340	340	282

[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

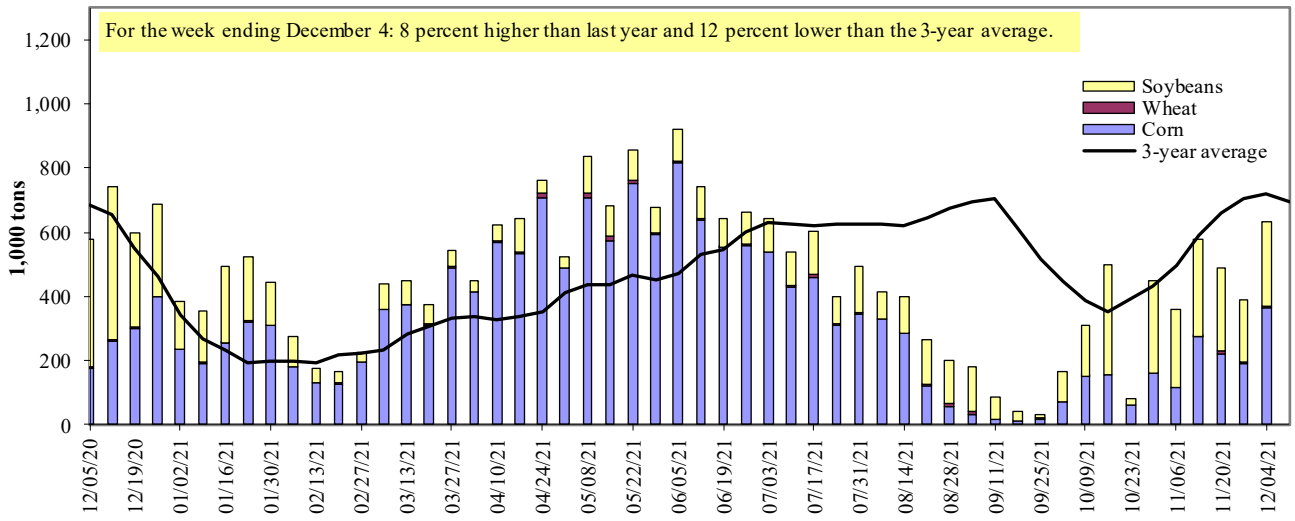
Select applicable index from market quotes are included in tables on this page. The 1976 benchmark rates per ton are provided in map.



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 12/04/2021	Corn	Wheat	Soybeans	Other	Total
Mississippi River					
Rock Island, IL (L15)	23	0	44	0	67
Winfield, MO (L25)	239	2	171	10	421
Alton, IL (L26)	321	5	253	10	589
Granite City, IL (L27)	364	5	261	22	652
Illinois River (La Grange)	84	0	113	0	197
Ohio River (Olmsted)	70	0	106	4	179
Arkansas River (L1)	1	10	25	0	36
Weekly total - 2021	435	15	392	26	867
Weekly total - 2020	360	23	733	2	1,118
2021 YTD[1]	22,167	1,558	9,860	278	33,862
2020 YTD[1]	16,993	1,689	16,472	211	35,365
2021 as % of 2020 YTD	130	92	60	132	96
Last 4 weeks as % of 2020[2]	93	85	67	179	78
Total 2020	18,942	1,765	19,205	237	40,149

[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.

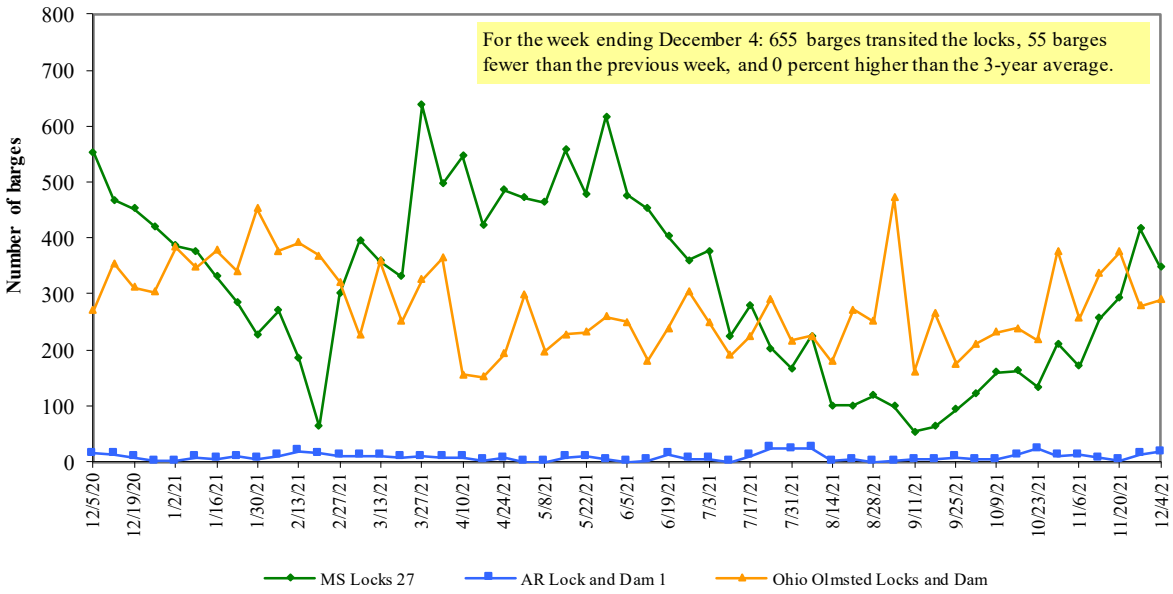
[2] As a percent of same period in 2020.

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

Source: U.S. Army Corps of Engineers.

Figure 11

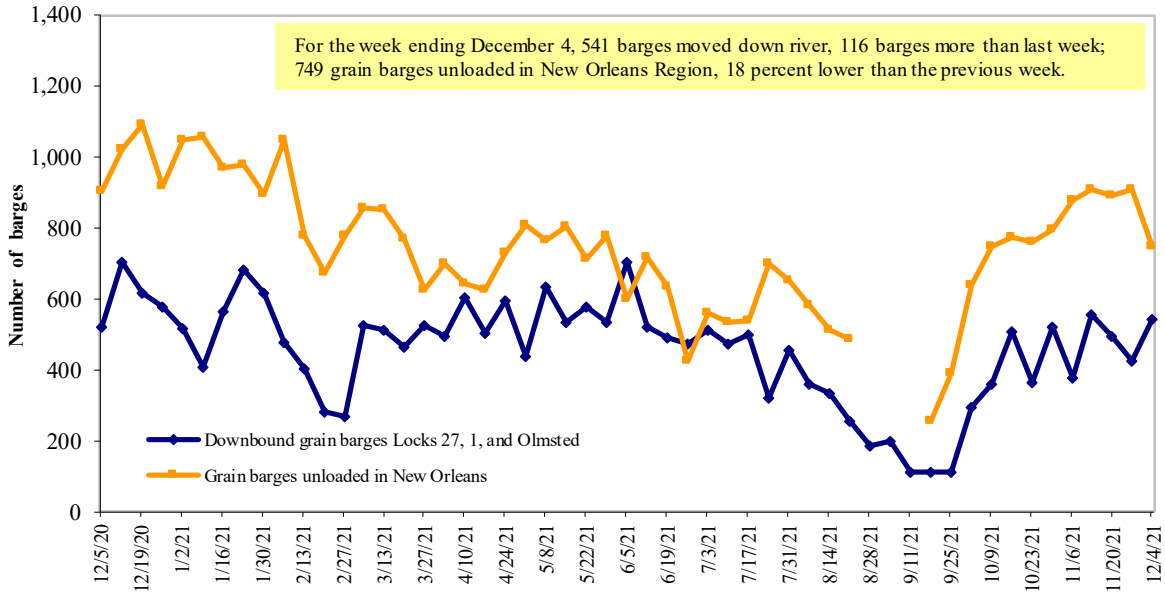
Upbound empty barges transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam



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 12/6/2021 (U.S. $/gallon)

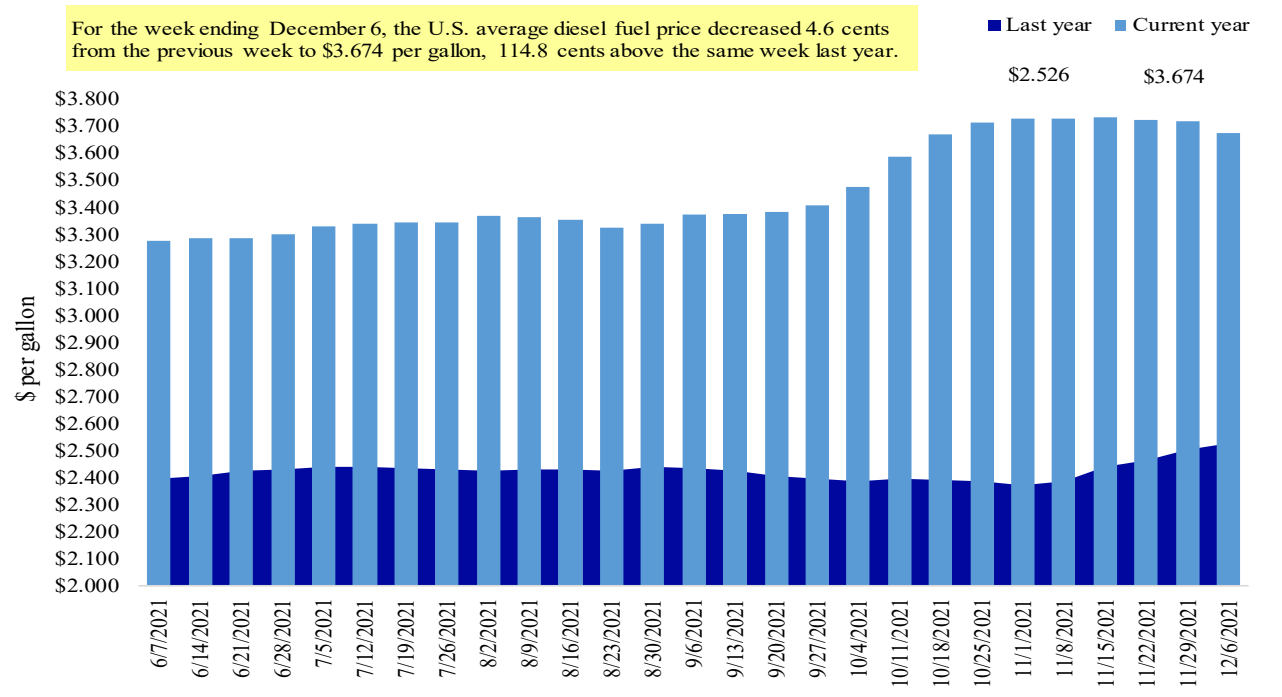
			Change from	
Region	Location	Price	Week ago	Year ago
I	East Coast	3.658	-0.026	1.085
	New England	3.654	-0.012	1.067
	Central Atlantic	3.824	-0.021	1.045
	Lower Atlantic	3.556	-0.030	1.123
II	Midwest	3.536	-0.066	1.101
III	Gulf Coast	3.402	-0.052	1.126
IV	Rocky Mountain	3.780	-0.044	1.239
V	West Coast	4.416	-0.034	1.372
	West Coast less California	3.992	-0.040	1.268
	California	4.789	-0.029	1.478
Total	United States	3.674	-0.046	1.148

[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]									
11/25/2021	1,979	601	1,114	748	52	4,495	25,784	16,097	46,375
This week year ago	1,531	394	1,521	2,503	172	6,120	27,920	25,211	59,252
Cumulative exports-marketing year[2]									
2021/22 YTD	3,710	1,479	2,729	1,811	97	9,826	9,647	21,070	40,543
2020/21 YTD	4,949	1,001	3,595	2,434	393	12,372	10,373	27,060	49,804
YTD 2021/22 as % of 2020/21	75	148	76	74	25	79	93	78	81
Last 4 wks. as % of same period 2020/21*	126	147	78	31	30	74	91	70	80
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 11/25/2021	Total commitments[2] 2021/22 current MY	Total commitments[2] 2020/21 last MY	% change current MY from last MY	Exports[3] 3-yr. avg. 2019-21
	1,000 mt -			
Mexico	10,148	8,534	19	14,817
Japan	3,083	4,968	(38)	11,082
China	12,005	11,179	7	7,920
Columbia	1,895	1,883	1	4,491
Korea	72	927	(92)	3,302
Top 5 importers	**27,203**	**27,491**	**(1)**	**41,613**
Total U.S. corn export sales	**35,430**	**38,293**	**(7)**	**53,145**
% of projected exports	56%	55%		
Change from prior week[2]	**1,021**	**1,372**		
Top 5 importers' share of U.S. corn export sales	77%	72%		78%
USDA forecast November 2021	**63,613**	**70,051**	**(9)**	
Corn use for ethanol USDA forecast, November 2021	**133,350**	**127,711**	**4**	

[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 11/25/2021	Total commitments[2] 2021/22 current MY	Total commitments[2] 2020/21 last MY	% change current MY from last MY	Exports[3] 3-yr. avg. 2018-20
				- 1,000 mt -
China	20,389	29,669	(31)	21,666
Mexico	2,502	2,980	(16)	4,754
Egypt	1,456	1,575	(8)	3,093
Indonesia	521	974	(47)	2,325
Japan	1,005	921	9	2,275
Top 5 importers	**25,873**	**36,118**	**(28)**	**34,113**
Total U.S. soybean export sales	**37,167**	**52,271**	**(29)**	**50,758**
% of projected exports	67%	85%		
change from prior week[2]	**1,063**	**340**		
Top 5 importers' share of U.S. soybean export sales	70%	69%		**67%**
USDA forecast, November 2021	**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 11/25/2021	Total Commitments[2] 2021/22 current MY	Total Commitments[2] 2020/21 last MY	% change current MY from last MY	Exports[3] 3-yr. avg. 2018-20
		1,000 mt -		- 1,000 mt -
Mexico	2,530	2,386	6	3,388
Philippines	2,150	2,443	(12)	3,121
Japan	1,577	1,706	(8)	2,567
Korea	858	1,251	(31)	1,501
Nigeria	1,566	854	83	1,490
China	848	2,059	(59)	1,268
Taiwan	599	855	(30)	1,187
Indonesia	67	675	(90)	1,131
Thailand	376	555	(32)	768
Italy	164	491	(67)	681
Top 10 importers	**10,736**	**13,273**	(19)	**17,102**
Total U.S. wheat export sales	**14,320**	**18,492**	(23)	**24,617**
% of projected exports	61%	68%		
change from prior week[2]	**80**	**446**		
Top 10 importers' share of U.S. wheat export sales	75%	72%		69%
USDA forecast, November 2021	**23,433**	**27,030**	(13)	

[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 12/02/21	Previous week*	Current week as % of previous	2021 YTD*	2020 YTD*	2021 YTD as % of 2020 YTD	Last 4-weeks as % of: Last year	Last 4-weeks as % of: Prior 3-yr. avg.	2020 total*
Pacific Northwest									
Wheat	168	269	62	12,881	14,881	87	56	63	15,966
Corn	135	0	n/a	12,565	9,053	139	33	29	9,969
Soybeans	718	788	91	12,565	12,109	104	120	192	14,028
Total	**1,020**	**1,057**	**97**	**38,011**	**36,044**	**105**	**91**	**119**	**39,963**
Mississippi Gulf									
Wheat	33	25	132	3,082	3,361	92	135	81	3,422
Corn	327	550	59	36,794	26,593	138	97	109	28,781
Soybeans	1,423	1,110	128	23,175	32,420	71	91	116	38,013
Total	**1,784**	**1,685**	**106**	**63,051**	**62,374**	**101**	**93**	**113**	**70,215**
Texas Gulf									
Wheat	0	55	0	3,669	4,178	88	118	107	4,248
Corn	7	19	37	577	682	85	224	220	723
Soybeans	0	153	0	1,581	1,609	98	62	187	2,098
Total	**7**	**227**	**3**	**5,828**	**6,469**	**90**	**86**	**145**	**7,068**
Interior									
Wheat	53	61	87	2,786	2,072	135	88	124	2,263
Corn	269	222	121	9,335	8,084	115	126	131	8,683
Soybeans	140	137	102	5,931	6,633	89	96	116	7,274
Total	**461**	**419**	**110**	**18,052**	**16,789**	**108**	**108**	**124**	**18,220**
Great Lakes									
Wheat	1	1	142	433	836	52	30	30	891
Corn	7	0	n/a	121	61	199	n/a	n/a	111
Soybeans	0	21	0	552	982	56	85	138	1,111
Total	**9**	**22**	**40**	**1,107**	**1,879**	**59**	**75**	**103**	**2,113**
Atlantic									
Wheat	3	0	n/a	128	65	196	10	31	65
Corn	0	0	n/a	81	33	246	533	26	33
Soybeans	84	114	74	1,835	1,520	121	77	117	1,870
Total	**88**	**114**	**77**	**2,044**	**1,619**	**126**	**72**	**113**	**1,968**
U.S. total from ports*									
Wheat	259	411	63	22,981	25,393	91	69	74	26,854
Corn	745	791	94	59,474	44,507	134	94	99	48,301
Soybeans	2,365	2,322	102	45,639	55,273	83	96	135	64,394
Total	**3,369**	**3,525**	**96**	**128,094**	**125,173**	**102**	**93**	**117**	**139,548**

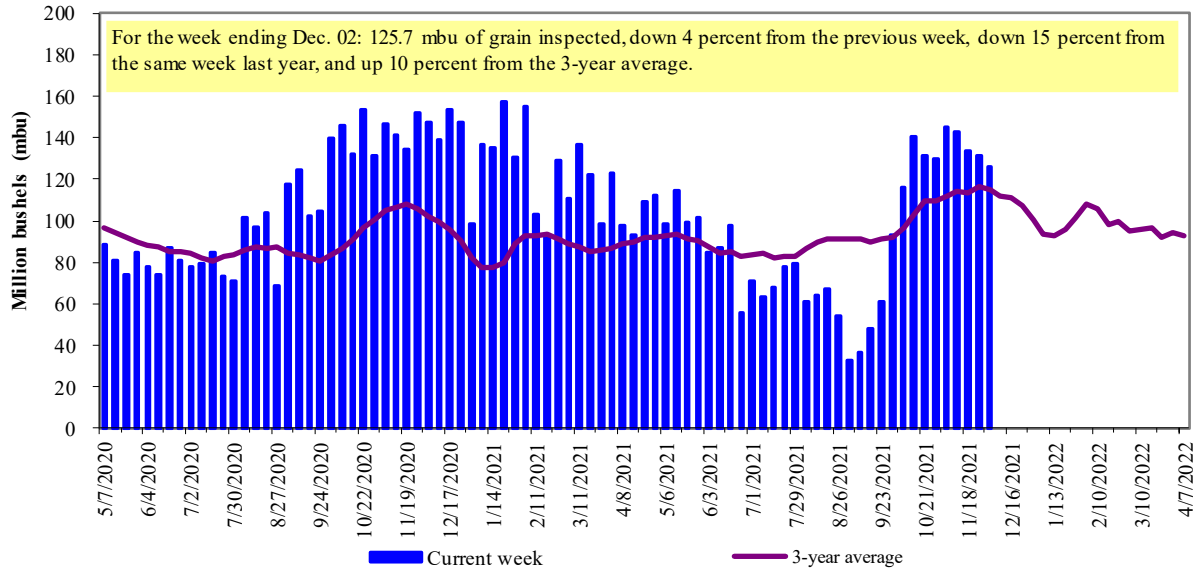
*Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

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 2020.

Figure 14

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

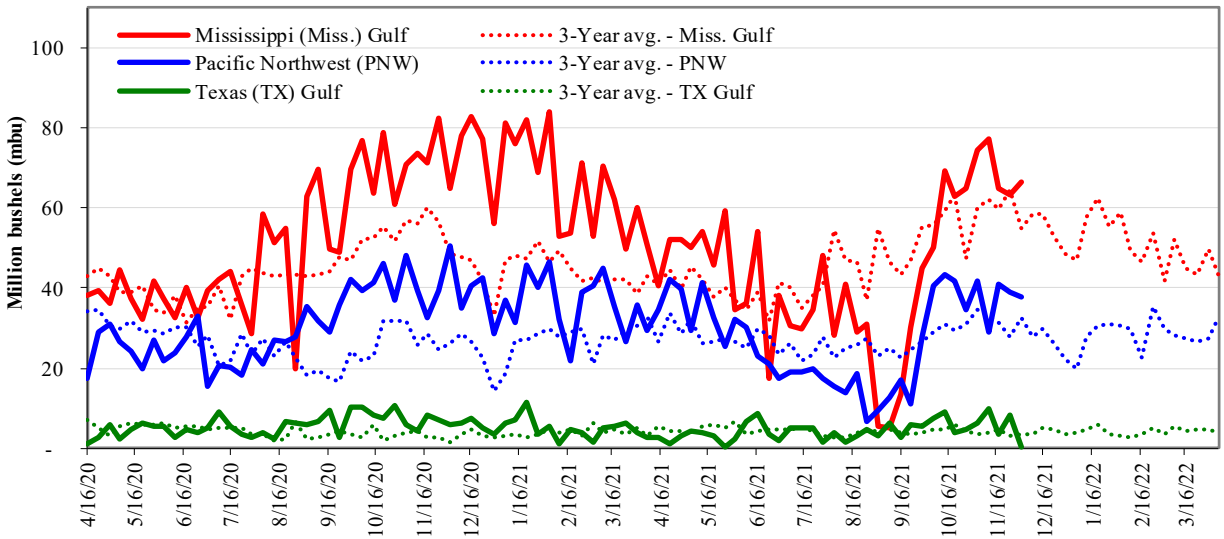


Note: 3-year average consists of 4-week running average.

Source: USDA, Federal Grain Inspection Service.

Figure 15

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



Week ending 12/02/21 inspections (mbu):	
MS Gulf:	66.4
PNW:	37.8
TX Gulf:	0.3

Percent change from:	MS Gulf	TX Gulf	U.S. Gulf	PNW
Last wk:	up 5	down 97	down 7	down 3
Last Year (same wk):	up 2	down 95	down 5	down 25
3-yr avg. (4-wk. mov. Avg):	up 10	down 93	up 4	up 21

Source: USDA, Federal Grain Inspection Service.

Table 17

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

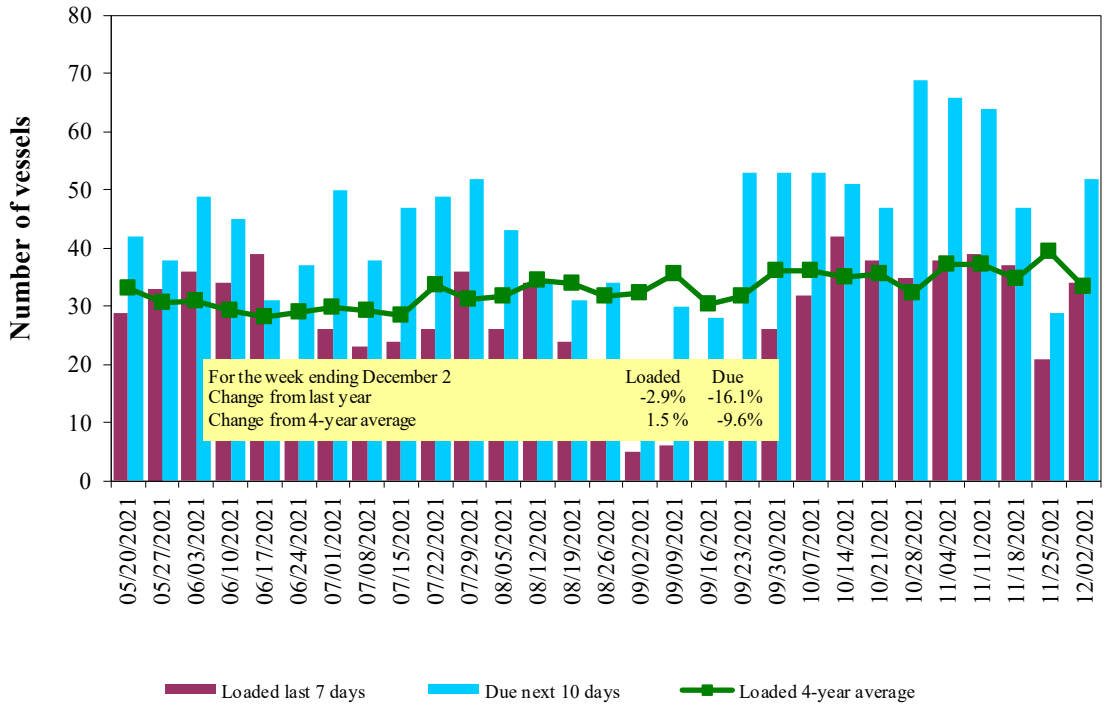
	Gulf			Pacific Northwest
Date	In port	Loaded 7-days	Due next 10-days	In port
12/2/2021	43	34	52	20
11/25/2021	26	21	29	n/a
2020 range	(22…60)	(23...46)	(34...68)	(7…24)
2020 average	37	33	49	15

Note: n/a = not available due to the holiday; numbers may be underreported due to the holiday.

Source: USDA, Agricultural Marketing Service.

Figure 16

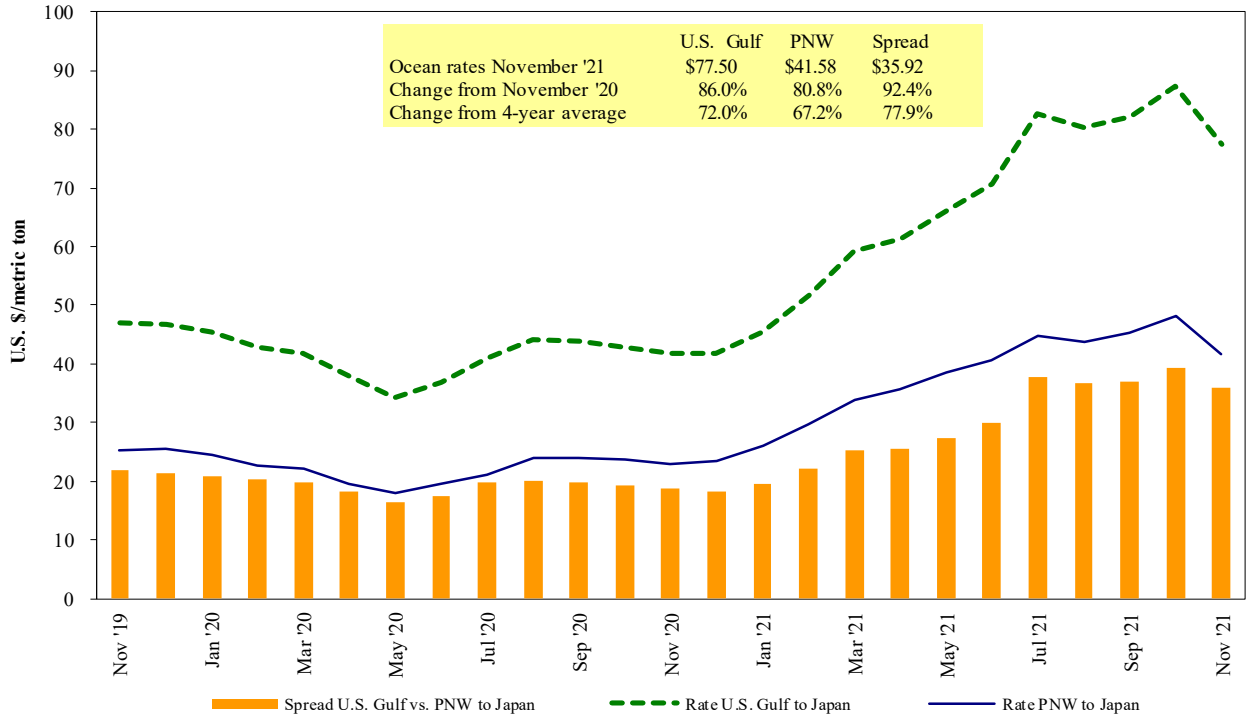
U.S. Gulf[1] vessel loading activity



[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 12/04/2021

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*
U.S. Gulf	S. Korea	Heavy grain	Dec 1/10, 2021	51,000	940.00
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
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

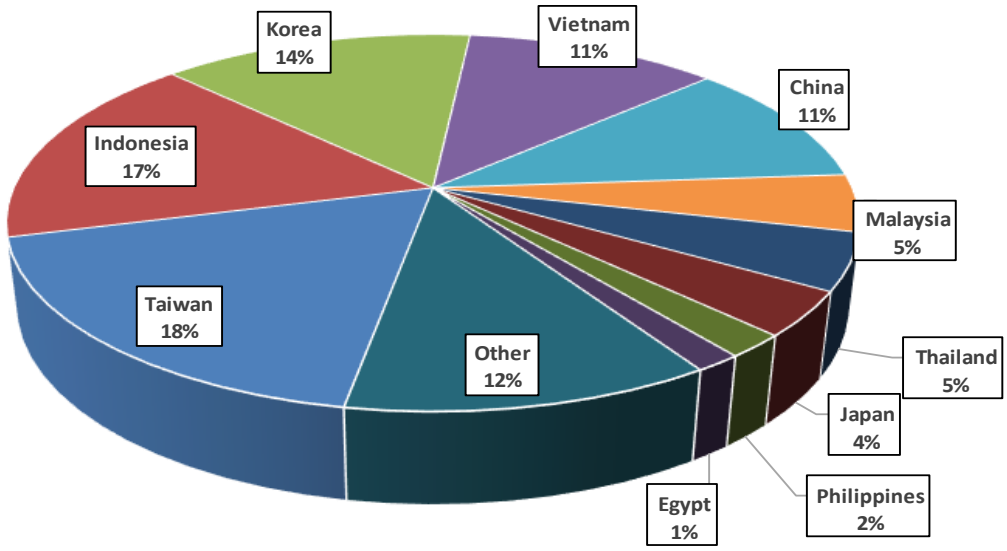
*50 percent of food aid from the United States is required to be shipped on U.S.-flag vessels.

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

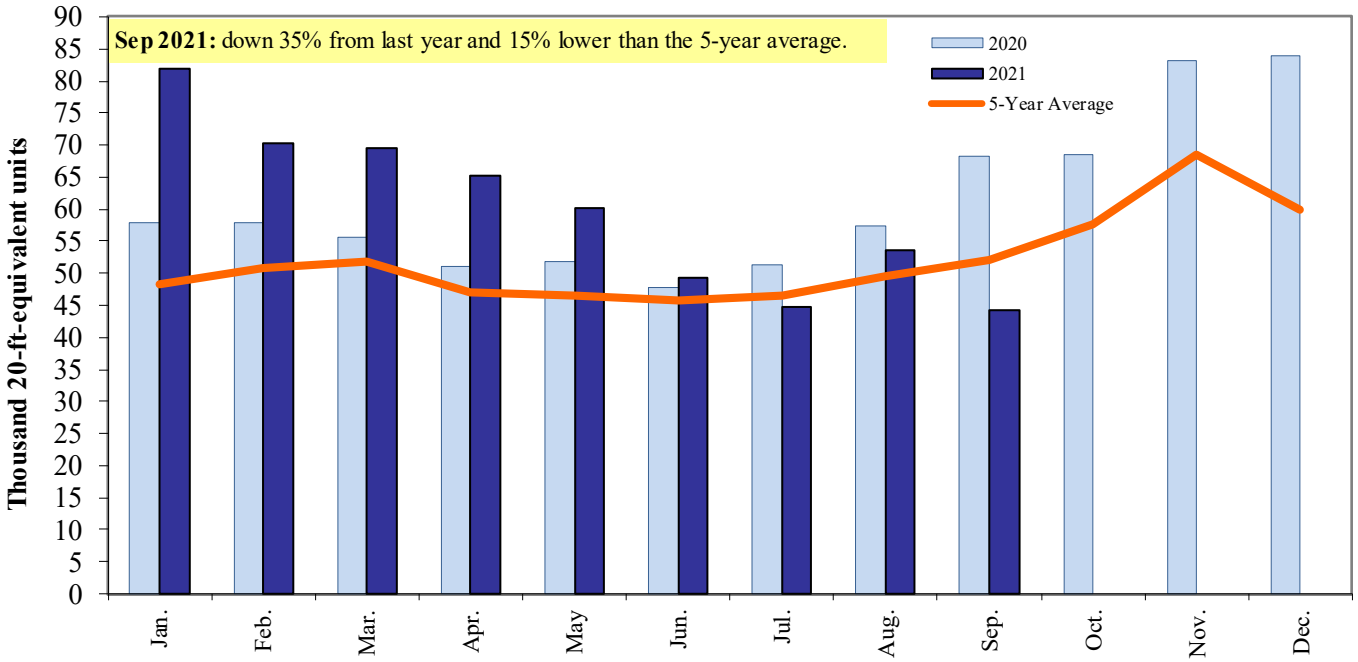
Figure 18
Top 10 destination markets for U.S. containerized grain exports, Jan-Sep 2021



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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