USDA United States Department of Agriculture

Grain Transportation Report

A weekly publication of the Agricultural Marketing Service
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February 20, 2020

Contents

The next release is February 27, 2020

WEEKLY HIGHLIGHTS

USDA's Agricultural Projections Through 2029

Last week, USDA released a report, *USDA Agricultural Projections to 2029*, with accompanying data tables. The report includes projections for farm income, U.S. crop and livestock supply and use, and global agricultural trade. USDA's long-term agricultural projections reflect departmentwide consensus on a longrun baseline scenario (2020-29) for the agricultural sector. The projections can help agricultural shippers and carriers anticipate patterns in future transportation demand for agricultural products.

U.S. Army Corps Announces Funding of Six Port Channel Projects

The U.S. Army Corps of Engineers has allocated $403 million in response to port requests to accommodate growing vessel sizes. The most funding ($274 million) went to the Port of Mobile, AL, to dredge its port channel to 50 feet (ft.), followed by $85 million to deepen the Mississippi River to 50 ft. between the Gulf of Mexico and a point between the Ports of New Orleans and Baton Rouge in Louisiana. Other allocations included $29.1 million to Port Everglades, FL, for widening the Intracoastal Waterway by 250 ft.; $13.3 million for dredging and maintenance work in Jacksonville (FL) Harbor; $1.5 million for a study on deepening the Seagirt Loop Channel for the Port of Baltimore (MD); and $200,000 for completing the NY and NJ Harbor Navigation Improvements Study for the Ports of New York and New Jersey. A 2019 USDA study estimated that increasing the lower Mississippi draft depth to 50 feet would save $13.02 in ocean freight rates per metric ton of soybeans shipped from the Gulf.

Diesel Fuel Prices Fall for Sixth Consecutive Week

During the week ending February 17, U.S. on-highway **diesel fuel prices** averaged $2.89 per gallon, 2 cents lower than the previous week and 11.6 cents below last year. Average diesel prices have fallen 18.9 cents per gallon over the past 6 weeks. A fall in crude oil demand because of the coronavirus and warmer than normal January temperatures in the United States have put downward pressure on crude oil and diesel fuel prices. Inventories of distillate fuel oils, used to make both diesel fuels and heating oils, have fallen each of the past 4 weeks ending February 7, after reaching a more than 2-year high in early January.

Snapshots by Sector

Export Sales

For the week ending February 6, **unshipped balances** of wheat, corn, and soybeans totaled 22.7 million metric tons (mmt). This represents a 27-percent decrease in outstanding sales, compared to the same time last year. Net **corn export sales** reached 0.969 mmt, down 22 percent from the past week. Net **soybean export sales** were .645 mmt, down 8 percent from the previous week. Net weekly **wheat export sales** reached .643 mmt, up 90 percent from the previous week.

Rail

U.S. Class I railroads originated 20,888 **grain carloads** during the week ending February 8. This was a 9-percent increase from the previous week, 1 percent more than last year, and 4 percent more than the 3-year average.

Average February shuttle **secondary railcar** bids/offers (per car) were $306 below tariff for the week ending February 13. This was $27 less than last week and $1,523 lower than this week last year. There were no non-shuttle bids/offers this week.

Barge

For the week ending February 15, **barge grain movements** totaled 553,054. This was a 22.8-percent increase from the previous week and 46 percent more than the same period last year.

For the week ending February 15, 374 grain barges **moved down river**—76 barges more than the previous week. There were 659 grain barges **unloaded in New Orleans**, 8 percent more than the previous week.

Ocean

For the week ending February 13, 31 **oceangoing grain vessels** were loaded in the Gulf—18.4 percent fewer than the same period last year. Within the next 10 days (starting February 14), 47 vessels were expected to be loaded—31.9 percent fewer than the same period last year.

As of February 13, the rate for shipping a metric ton (mt) of grain from the U.S. Gulf to Japan was $42.75. This was 2 percent more than the previous week. The rate from the Pacific Northwest to Japan was $22.25 per mt, 1 percent more than the previous week.

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Feature Article/Calendar

How Propane Shortages Ripple To Affect Transportation Demand: The Story of the Midwest Propane Shortage of 2019

To understand the connection between propane supply and grain transportation demand, it is first vital to understand propane's role in corn production. Before storing or transporting harvested corn, farmers will often remove excess moisture with grain dryers.[1] Historically, the most widely used and cost-effective fuel option for grain dryers has been propane. However, especially in times of high propane demand, disruptions in propane availability can delay drying and affect the supply of corn.[2]

In general, higher propane demand leads to higher propane prices, which in turn, increase drying costs and reduce farmers' margins. During a propane shortage, propane prices can spike, and the resulting corn-supply disruptions can weaken the short-term demand for corn transportation—the next link in the corn supply chain. Thus, input costs such as propane may factor heavily into farmers' decisions about transportation spending.

Midwest Propane Shortage of 2019: The Perfect Storm

The Midwest propane shortage of 2019 unleashed a "perfect storm" of cascading effects. In the spring of 2019, flooding delayed the Midwest crop harvest by 3 to 4 weeks, and a wetter than normal crop raised the demand for propane. Later in the season, this demand was compounded by the demand for fueling winter space heating. The resulting surge in propane demand delayed corn drying and led to a fourth-quarter decrease in Midwest propane stocks of 7.4 million barrels, versus the previous 5-year average fourth-quarter decrease of 5.3 million barrels.[3] However, unlike 2013 and 2014 when there was a general supply shortage of propane, the winter of 2019 saw a national propane inventory that actually exceeded the 5-year average.

The problem lay with the distribution and transportation of propane. First, the current small pipeline diameters could not quickly transport the large volumes of propane needed. Second, safety regulations restricted the quantities that could ship from supply points. Third, during peak harvest season (and peak propane demand) in the Midwest, a November 19-27 strike by Canadian National Railway workers stopped propane shipments from Western Canada. This 1-week delay in shipments prevented Midwest retailers from restocking local propane inventories that were already depleted from harvest-related use.[4] As a result of all this turmoil, propane's retail price increased from $1.39 to $1.65 in the fourth quarter,[5] exceeding the 5-year average increase by 10 cents. However, as of last week, propane prices had fallen to $1.61, which is below the same week last year and in 2013 and 2014.

Some farmers had to look beyond their usual local elevators, which were short on propane and on receiving capacity. Seeking more distant elevators added to their transport costs. For example, the truck rate in the North Central U.S. in the fourth quarter of 2019 increased from roughly $0.12/bushel (bu) (for distances less than 25 miles) to $0.16/bu (for distances between 26 and 100 miles).[6]

[1] Although corn is not the only grain that requires grain dryers, it is the primary one and the one examined in this article. Yellow dent corn (#2 corn) needs to be dried to 15-percent moisture for long-term storage. Otherwise, it is at risk of spoiling in as little as 3 days.
[2] Typically, demand for propane rises during the seasonal time window for drying corn (the primary grain requiring drying), from late September to early November. However, the demand for propane fluctuates with crop maturation rates (i.e., early, late, or normal harvest) and weather (e.g., rain or snow during harvest can increase drying time).
[3] Department of Energy, Energy Information Administration, December 2019.
[4] Although Upper Midwest States source propane from other areas, propane's immediate availability in these States depends on local inventory at retail distributors and end-user storage tanks.
[5] Department of Energy, Energy Information Administration, December 2019.
[6] USDA-AMS, *Grain Truck and Ocean Rate Advisory* report, fourth quarter 2019, February 13, 2020. Note that $0.12 assumes a 25-mile shipment, and $0.16 assumes a 50-mile shipment.

Propane Costs Affect Drying Costs, Farmers' Margins, and Transportation

Every harvest, farmers must decide whether, when, and how to procure propane—all of which ultimately affect the short-term demand for transportation. To guard their already slim margins on corn, farmers refrain from procuring propane until they need it or until they can buy it at the lowest price. They tend to take greater risks with variable weather when crop prices are low and propane prices are high, allowing crops to dry in the field to minimize costs. In the reverse scenario with a high corn price or lower propane price, farmers are less willing to risk losing a crop (to inclement weather or changing market price) by leaving it to dry slowly in the field.[1] In such cases, farmers use dryers to reduce moisture content after harvest and before storage. Higher moisture content of corn and higher propane price increase drying costs. With wetter corn, lower corn prices, and higher propane prices, propane accounts for a larger portion of corn price (table1).

Table 1: Sample propane drying costs as percentage of corn price per bushel

Corn price ($/bushel)[1]	Propane price[2]	Propane % of corn price-20% moisture[3]	Propane % of corn price- 22% moisture	Propane % of corn price-25% moisture
$3.48	$1.57	4	6	8
$3.52	$1.42	4	5	7
$3.64	$1.38	3	4	6
$3.87	$1.64	4	8	8
$3.92	$1.79	4	6	8
$4.06	$1.97	4	6	9

[1] Prices in select Midwest States in November 2019. Source: USDA, National Agricultural Statistics Service (NASS).

[2] Prices in select Midwest States in November 2019. Source: Department of Energy, Energy Information Administration (EIA).

[3]Calculations based on average propane consumption for high-temperature drying of 0.018 gallons/bushel /percentage point of moisture (Shouse, Hanna, and Peterson, 2012) and assuming corn is dried to 15-percent moisture. Moisture content are based on NASS Survey in select Midwest states in November 2019.

Table 2 illustrates how propane prices and the prevailing transportation rate can affect farmers' margins and the demand for transportation.[2] In November 2019, propane increased from $1.43/gallon to $1.82/gallon, drying costs increased by $.03/bu, and truck rates increased by $.04/bu, for farmers forced to seek more distant elevators because of limited receiving capacity locally. Together, these increases reduced the farmer's margin by 7 cents/bu. To maintain the original margin, the farmer could spend only $.09/bu on truck, which is 7 cents less than the actual rate for the longer haul. Thus, both the truck rate and propane cost may influence decisions on how much to ship and how much to store, because the farmer could no longer ship the same amount for the same cost. For States where corn had even higher moisture contents, such as Michigan or Wisconsin, the propane cost would have an even greater effect on farmer margins and transportation demand. Kranti.Mulik@usda.gov

Table 2: Sample effect of propane price increase on farmers' margins and transportation cost

Category	Before*	After**
Corn price ($/bu)[1]	3.66	3.66
Propane price($/gallon)[2]	1.43	1.82
Propane cost($/bu)[3]	0.13	0.16
Truck cost($/bu)[4]	0.12	0.16
Margin($/bu)[5]	**3.41**	**3.34**
Required truck cost to maintain previous margin ($/bu)	NA	**0.09**

[1]Corn price for Illinois in November 2019. Source: USDA, National Agricultural Statistical Service (NASS).

[2]Propane prices in Illinois. Source: Department of Energy, Energy Information Administration.

[3]Assuming 20-percent initial average moisture content, corn is dried to 15-percent moisture and average propane consumption of 0.018 gallons/bushel/perecentage point of mositure for high-temperature drying (Shouse, Hanna, and Peterson, 2012).

[4]Fourth quarter 2019 truck rate for North Central US assuming 25-mile shipment ("Before") and 50-mile shipment ("After"). Source: Grain Truck and Ocean Rate Advisory Report: Quarterly Updates, USDA, fourth quarter 2019

[5]For illustration, margin is estimated using propane cost and transportation cost. In reality many other input costs determine farmers' final margins.

Note: *Prices/costs before propane price increase;**prices/costs after propane price increase; bu=bushel; NA = not applicable.

[1]Quetica, LLC. "Optimizing the Propane Supply chain in the State of Iowa," September 2016.

[2] As an example, we use costs from fourth quarter 2019 for a hypothetical Illinois corn farmer who takes corn to an elevator within a 25-mile radius. We assume an initial moisture content of 20 percent and no changes in input costs, except for propane and transportation.

Grain Transportation Indicators

Table 1

Grain transport cost indicators [1]

	Truck	Rail		Barge	Ocean	
For the week ending		Unit train	Shuttle		Gulf	Pacific
02/19/20	194	n/a	212	162	191	158
02/12/20	195	n/a	214	164	188	156

[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	2/14/2020	2/7/2020
Corn	IL–Gulf	-0.56	-0.57
Corn	NE–Gulf	-0.71	-0.72
Soybean	IA–Gulf	-1.13	-1.14
HRW	KS–Gulf	-2.26	-2.19
HRS	ND–Portland	-2.38	-2.28

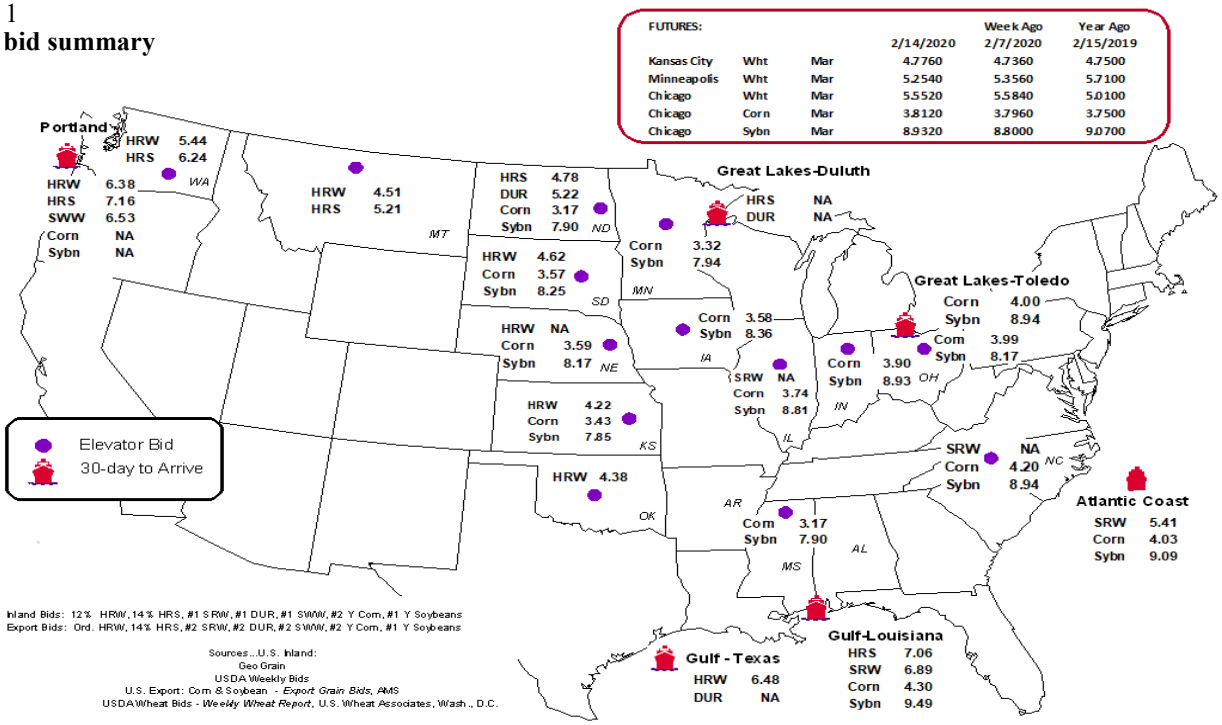
Note: nq = no quote; n/a = not available; HRW = hard red winter wheat; HRS = hard red spring wheat.

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]
2/12/2020[p]	114	532	5,391	360	6,397	2/8/2020	2,382
2/05/2020[r]	638	522	4,768	92	6,020	2/1/2020	1,906
2020 YTD[r]	3,320	4,294	27,921	1,334	36,869	2020 YTD	13,130
2019 YTD[r]	3,512	6,933	36,103	3,139	49,687	2019 YTD	15,723
2020 YTD as % of 2019 YTD	95	62	77	42	74	% change YTD	84
Last 4 weeks as % of 2019[2]	77	52	86	36	76	Last 4wks. % 2019	85
Last 4 weeks as % of 4-year avg.[2]	71	39	72	28	63	Last 4wks. % 4 yr.	102
Total 2019	40,974	51,167	251,181	16,192	359,514	Total 2019	127,622
Total 2018	22,118	46,532	310,449	21,432	400,531	Total 2018	129,674

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

[2] Compared with same 4-weeks in 2019 and prior 4-year average.

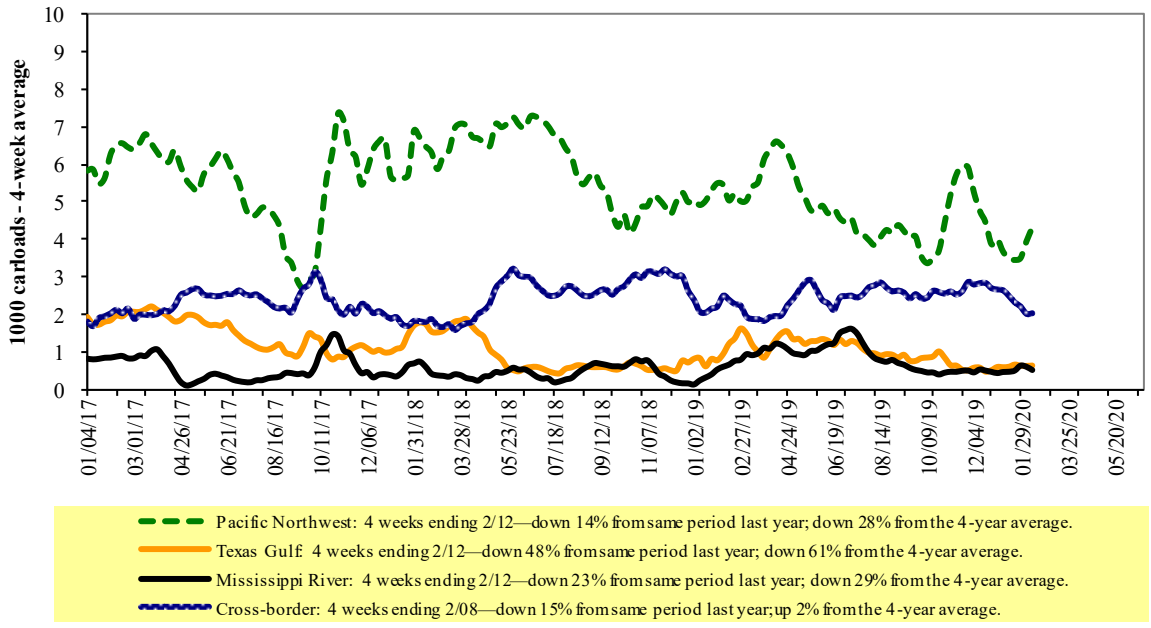
[3] Cross-border weekly data is approximately 15 percent below the Association of American Railroads' reported weekly carloads received by Mexican railroads. to reflect switching between Kansas City Southern de Mexico (KCSM) and Grupo Mexico.

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	
2/8/2020	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	1,919	2,326	10,799	1,168	4,676	20,888	3,385	3,174
This week last year	2,118	2,720	9,814	899	5,220	20,771	3,748	3,317
2020 YTD	10,624	13,905	61,257	6,547	26,728	119,061	20,925	21,351
2019 YTD	11,446	16,061	67,180	6,133	31,031	131,851	22,845	23,995
2020 YTD as % of 2019 YTD	93	87	91	107	86	90	92	89
Last 4 weeks as % of 2019*	97	87	94	97	93	94	86	88
Last 4 weeks as % of 3-yr. avg.**	95	83	92	98	86	90	87	84
Total 2019	91,611	137,277	568,369	58,527	260,269	1,116,053	212,621	235,892

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

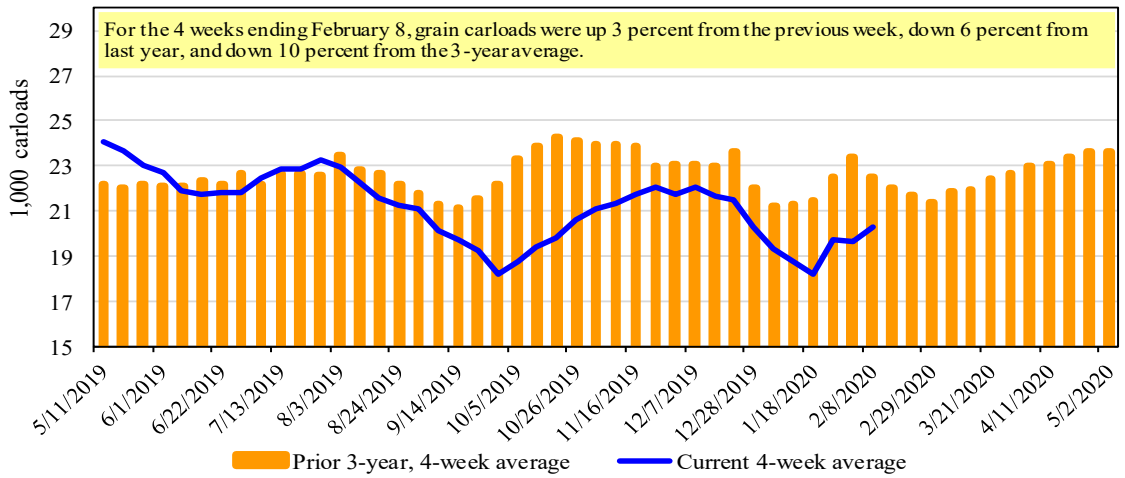
**The past 4 weeks as a percent of the same period from the prior 3-year average. YTD = year-to-date; avg. = average; yr. = year.

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							
2/13/2020		Feb-20	Feb-19	Mar-20	Mar-19	Apr-20	Apr-19	May-20	May-19
BNSF[3]	COT grain units	no offer	no offer	0	0	no bid	no bids	no bid	no bids
	COT grain single-car	no offer	no offer	0	92	0	3	0	2
UP[4]	GCAS/Region 1	no offer	no offer	no offer	no offer	no offer	10	n/a	n/a
	GCAS/Region 2	no bid	no offer	no bid	no offer	no bid	10	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.

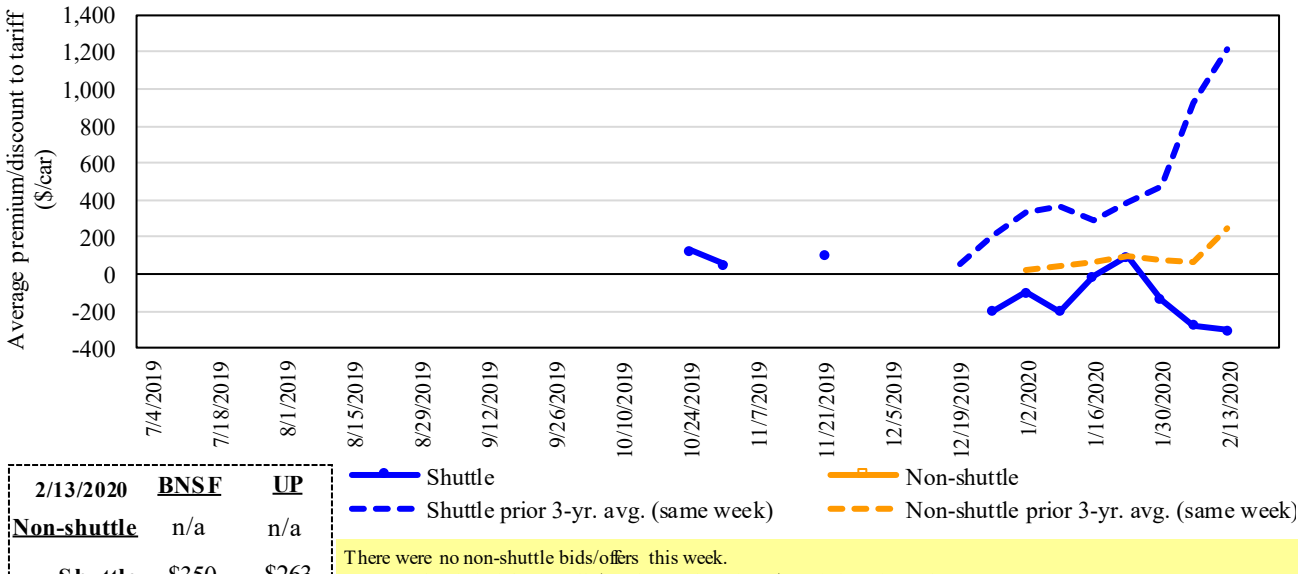
Region 1 includes: AR, IL, LA, MO, NM, OK, TX, WI, and Duluth, MN.

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 2020, secondary market

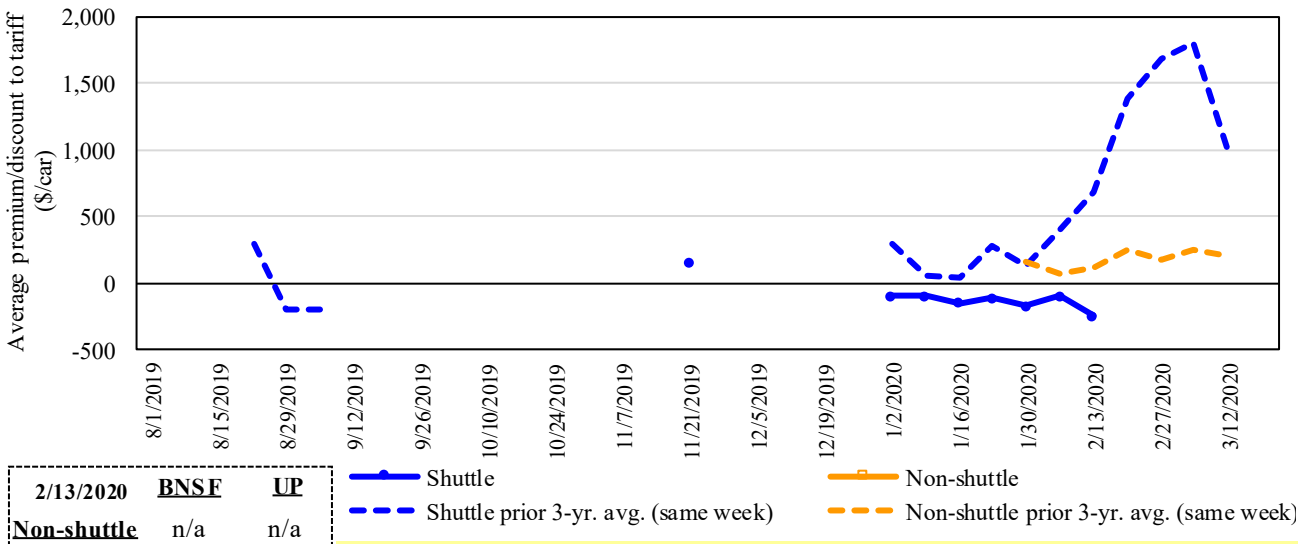


2/13/2020	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	-$350	-$263

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers fell $27 this week and are $431 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 2020, secondary market



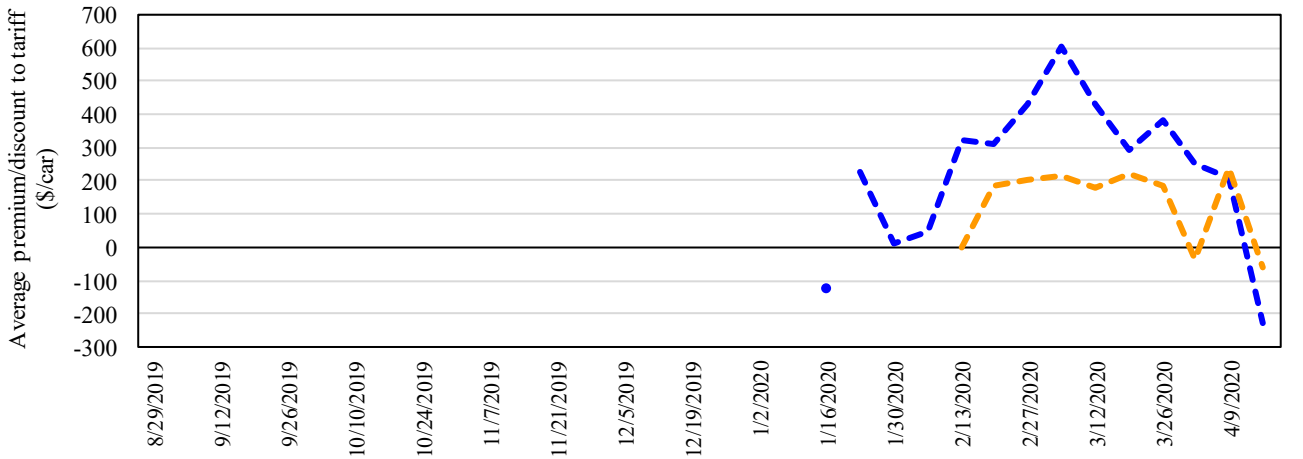
2/13/2020	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	-$350	-$150

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers fell $150 this week and are $400 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 2020, secondary market



2/13/2020	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	n/a	n/a

There were no non-shuttle bids/offers this week.
There were no shuttle bids/offers this week.

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: 2/13/2020	Delivery period					
		Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20
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 2019	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 2019	n/a	n/a	n/a	n/a	n/a	n/a
Shuttle	**BNSF-GF**	**(350)**	**(350)**	**n/a**	**n/a**	**n/a**	**n/a**
	Change from last week	(8)	n/a	n/a	n/a	n/a	n/a
	Change from same week 2019	(2050)	(1050)	n/a	n/a	n/a	n/a
	UP-Pool	**(263)**	**(150)**	**n/a**	**n/a**	**n/a**	**n/a**
	Change from last week	(46)	(50)	n/a	n/a	n/a	n/a
	Change from same week 2019	(996)	(250)	n/a	n/a	n/a	n/a

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

Note: Bids listed are market indicators only and are not guaranteed prices. n/a = not available; GF = guaranteed freight; Pool = guaranteed pool; BNSF = BNSF Railway; UP = Union Pacific Railroad.

Data from James B. Joiner Co., Tradewest Brokerage Co.

Source: USDA, Agricultural Marketing Service.

The **tariff rail rate** is the base price of freight rail service. Together with **fuel surcharges** and any **auction and secondary rail** values, the tariff rail rate constitutes the full cost of shipping by rail. Typically, auction and secondary rail values are a small fraction of the full cost of shipping by rail relative to the tariff rate. However, during times of high rail demand or short supply, high auction and secondary rail values can exceed the cost of the tariff rate plus fuel surcharge.

Table 7

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

February 2020	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	$3,983	$101	$40.56	$1.10	0
	Grand Forks, ND	Duluth-Superior, MN	$4,333	$0	$43.03	$1.17	2
	Wichita, KS	Los Angeles, CA	$7,240	$0	$71.90	$1.96	1
	Wichita, KS	New Orleans, LA	$4,525	$178	$46.70	$1.27	-1
	Sioux Falls, SD	Galveston-Houston, TX	$6,976	$0	$69.28	$1.89	1
	Colby, KS	Galveston-Houston, TX	$4,801	$195	$49.61	$1.35	0
	Amarillo, TX	Los Angeles, CA	$5,121	$271	$53.55	$1.46	0
Corn	Champaign-Urbana, IL	New Orleans, LA	$3,900	$201	$40.73	$1.03	-3
	Toledo, OH	Raleigh, NC	$6,816	$0	$67.69	$1.72	4
	Des Moines, IA	Davenport, IA	$2,415	$43	$24.41	$0.62	7
	Indianapolis, IN	Atlanta, GA	$5,818	$0	$57.78	$1.47	3
	Indianapolis, IN	Knoxville, TN	$4,874	$0	$48.40	$1.23	4
	Des Moines, IA	Little Rock, AR	$3,800	$125	$38.98	$0.99	-2
	Des Moines, IA	Los Angeles, CA	$5,680	$365	$60.03	$1.52	-1
Soybeans	Minneapolis, MN	New Orleans, LA	$3,631	$194	$37.98	$1.03	-12
	Toledo, OH	Huntsville, AL	$5,630	$0	$55.91	$1.52	3
	Indianapolis, IN	Raleigh, NC	$6,932	$0	$68.84	$1.87	3
	Indianapolis, IN	Huntsville, AL	$5,107	$0	$50.71	$1.38	3
	Champaign-Urbana, IL	New Orleans, LA	$4,645	$201	$48.13	$1.31	-2
Shuttle train							
Wheat	Great Falls, MT	Portland, OR	$4,143	$0	$41.14	$1.12	2
	Wichita, KS	Galveston-Houston, TX	$4,361	$0	$43.31	$1.18	2
	Chicago, IL	Albany, NY	$7,074	$0	$70.25	$1.91	20
	Grand Forks, ND	Portland, OR	$5,801	$0	$57.61	$1.57	1
	Grand Forks, ND	Galveston-Houston, TX	$6,121	$0	$60.78	$1.65	1
	Colby, KS	Portland, OR	$6,012	$320	$62.88	$1.71	1
Corn	Minneapolis, MN	Portland, OR	$5,180	$0	$51.44	$1.31	0
	Sioux Falls, SD	Tacoma, WA	$5,140	$0	$51.04	$1.30	0
	Champaign-Urbana, IL	New Orleans, LA	$3,820	$201	$39.93	$1.01	0
	Lincoln, NE	Galveston-Houston, TX	$3,880	$0	$38.53	$0.98	0
	Des Moines, IA	Amarillo, TX	$4,220	$157	$43.47	$1.10	4
	Minneapolis, MN	Tacoma, WA	$5,180	$0	$51.44	$1.31	0
	Council Bluffs, IA	Stockton, CA	$5,000	$0	$49.65	$1.26	0
Soybeans	Sioux Falls, SD	Tacoma, WA	$5,850	$0	$58.09	$1.58	2
	Minneapolis, MN	Portland, OR	$5,900	$0	$58.59	$1.59	2
	Fargo, ND	Tacoma, WA	$5,750	$0	$57.10	$1.55	2
	Council Bluffs, IA	New Orleans, LA	$4,875	$232	$50.71	$1.38	2
	Toledo, OH	Huntsville, AL	$4,805	$0	$47.72	$1.30	4
	Grand Island, NE	Portland, OR	$5,860	$327	$61.44	$1.67	2

[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: February 2020							
Commodity	Origin state	Destination region	Tariff rate/car[1]	Fuel surcharge per car[2]	Tariff plus surcharge per: metric ton[3]	Tariff plus surcharge per: bushel[3]	Percent change[4] Y/Y
Wheat	MT	Chihuahua, CI	$7,509	$0	$76.72	$2.09	3
	OK	Cuautitlan, EM	$6,775	$139	$70.65	$1.92	0
	KS	Guadalajara, JA	$7,534	$633	$83.44	$2.27	5
	TX	Salinas Victoria, NL	$4,329	$84	$45.09	$1.23	0
Corn	IA	Guadalajara, JA	$8,902	$542	$96.49	$2.45	6
	SD	Celaya, GJ	$8,140	$0	$83.17	$2.11	3
	NE	Queretaro, QA	$8,278	$284	$87.49	$2.22	1
	SD	Salinas Victoria, NL	$6,905	$0	$70.55	$1.79	0
	MO	Tlalnepantla, EM	$7,643	$277	$80.92	$2.05	1
	SD	Torreon, CU	$7,690	$0	$78.57	$1.99	3
Soybeans	MO	Bojay (Tula), HG	$8,547	$506	$92.49	$2.51	5
	NE	Guadalajara, JA	$9,172	$529	$99.11	$2.69	5
	IA	El Castillo, JA	$9,490	$0	$96.97	$2.64	4
	KS	Torreon, CU	$7,964	$366	$85.10	$2.31	4
Sorghum	NE	Celaya, GJ	$7,772	$479	$84.31	$2.14	5
	KS	Queretaro, QA	$8,108	$174	$84.62	$2.15	1
	NE	Salinas Victoria, NL	$6,713	$140	$70.01	$1.78	1
	NE	Torreon, CU	$7,157	$339	$76.59	$1.94	4

[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.

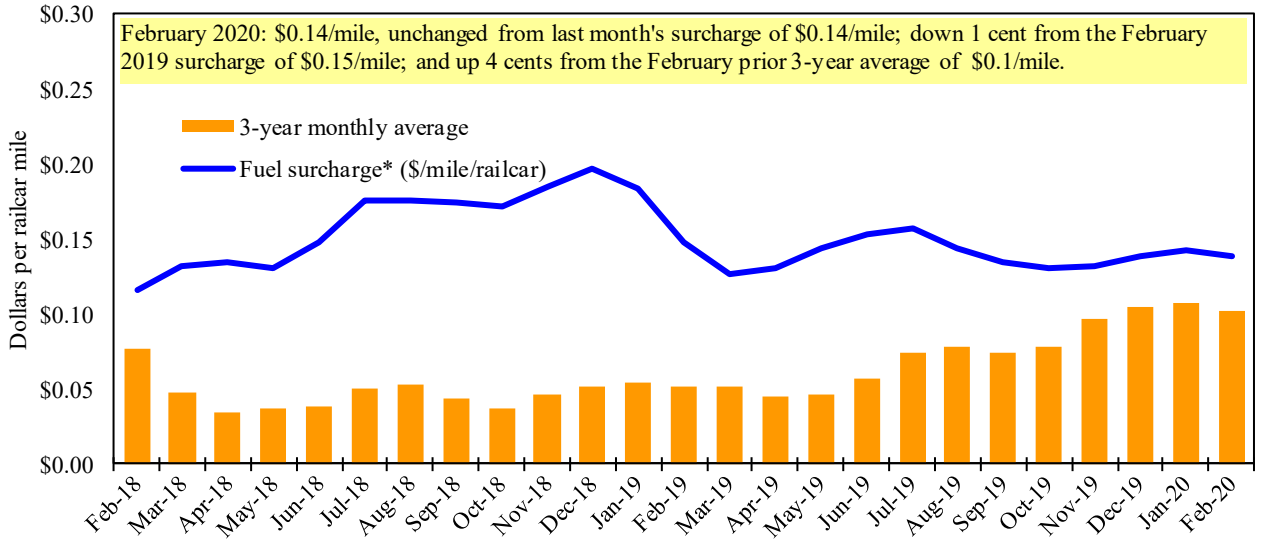
[3]Approximate load per car = 97.87 metric tons: Corn & Sorghum 56 lbs/bu, Wheat & Soybeans 60 lbs/bu.

[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.

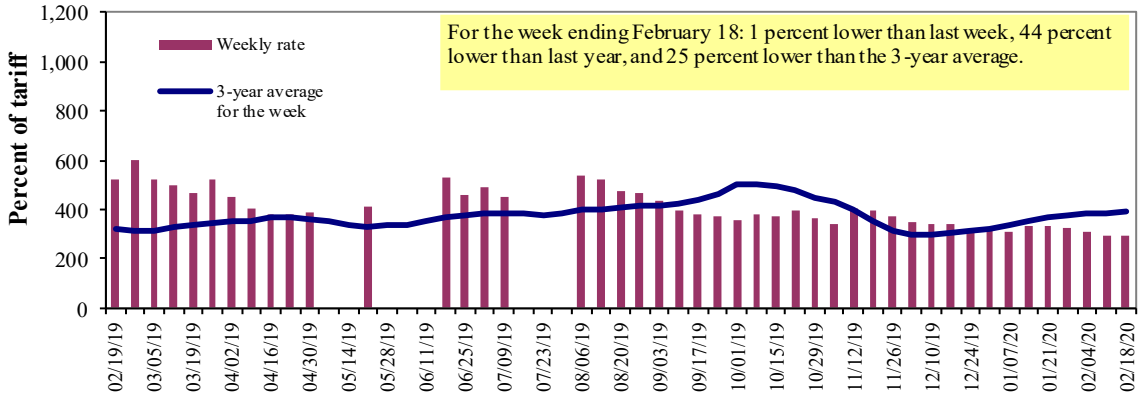
**CSX strike price changed from $2.00/gal. to $3.75/gal. starting January 1, 2015.

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]	2/18/2020	-	-	292	190	208	208	180
	2/11/2020	-	-	296	192	210	210	184
$/ton	2/18/2020	-	-	13.55	7.58	9.76	8.40	5.65
	2/11/2020	-	-	13.73	7.66	9.85	8.48	5.78
Current week % change from the same week:								
	Last year	-	-	-44	-57	-57	-58	-56
	3-year avg.[2]	-	-	-25	-37	-39	-39	-31
Rate[1]	February	-	-	298	203	213	213	192
	April	377	338	308	208	218	218	197

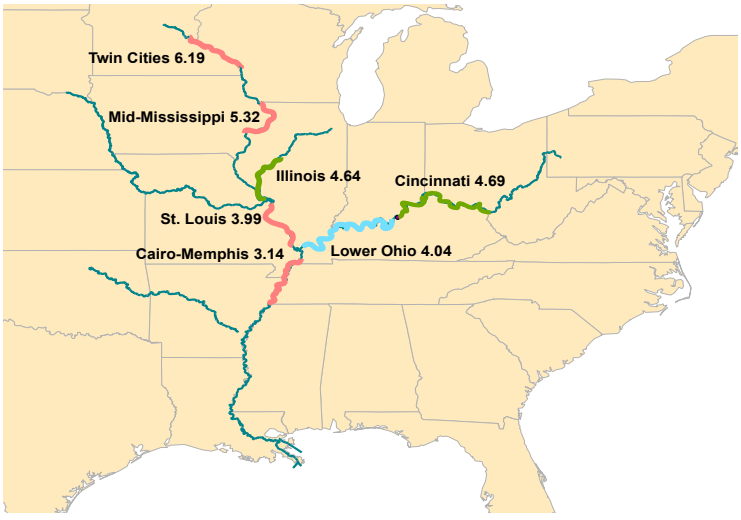
[1]Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); [2]4-week moving average; ton = 2,000 pounds; "-" not available due to closure.

Source: USDA, Agricultural Marketing Service.

Figure 9
Benchmark tariff rates

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

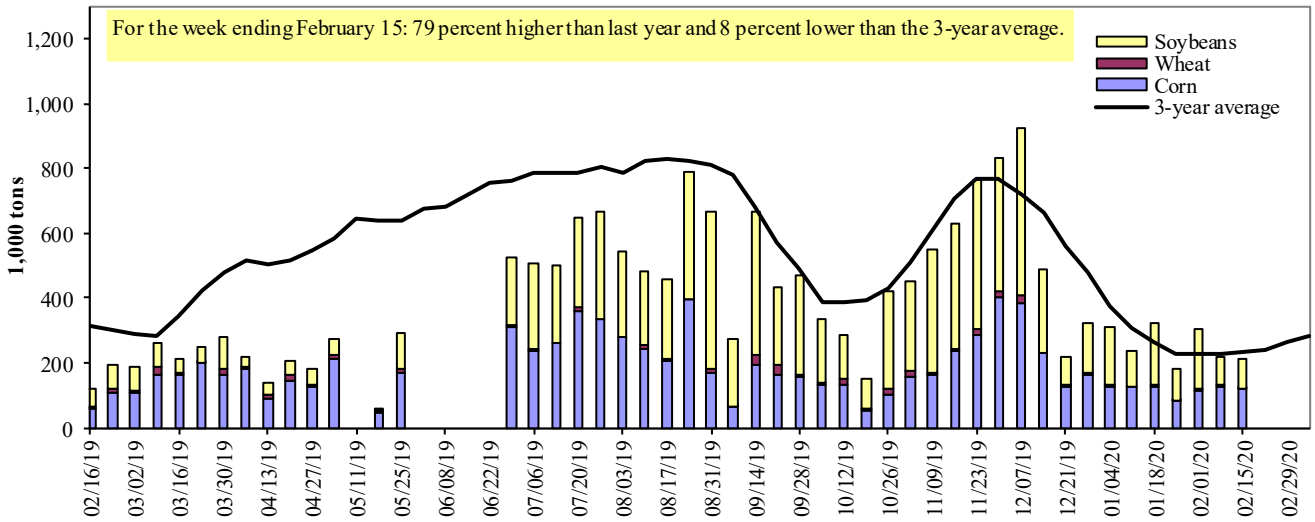
Select applicable index from market quotes are included in tables on this page. The 1976 benchmark rates per ton are provided in map.



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 02/15/2020	Corn	Wheat	Soybeans	Other	Total
Mississippi River					
Rock Island, IL (L15)	0	0	0	0	0
Winfield, MO (L25)	0	0	0	0	0
Alton, IL (L26)	160	3	95	0	258
Granite City, IL (L27)	162	3	113	0	278
Illinois River (La Grange)	120	3	90	0	213
Ohio River (Olmsted)	157	2	45	0	203
Arkansas River (L1)	0	41	31	0	72
Weekly total - 2020	319	46	189	0	553
Weekly total - 2019	167	22	191	0	379
2020 YTD[1]	1,635	168	1,835	6	3,644
2019 YTD[1]	1,362	257	1,490	9	3,117
2020 as % of 2019 YTD	120	66	123	65	117
Last 4 weeks as % of 2019[2]	165	71	108	81	126
Total 2019	12,780	1,631	14,683	154	29,247

[1] Weekly total, YTD (year-to-date), and calendar year total include MS/27, OH/Olmsted, and AR/1; Other refers to oats, barley, sorghum, and rye. L (as in "L15") refers to a lock or lock and dam facility. Olmsted = Olmsted Locks and Dam. La Grange = La Grange Lock and Dam.

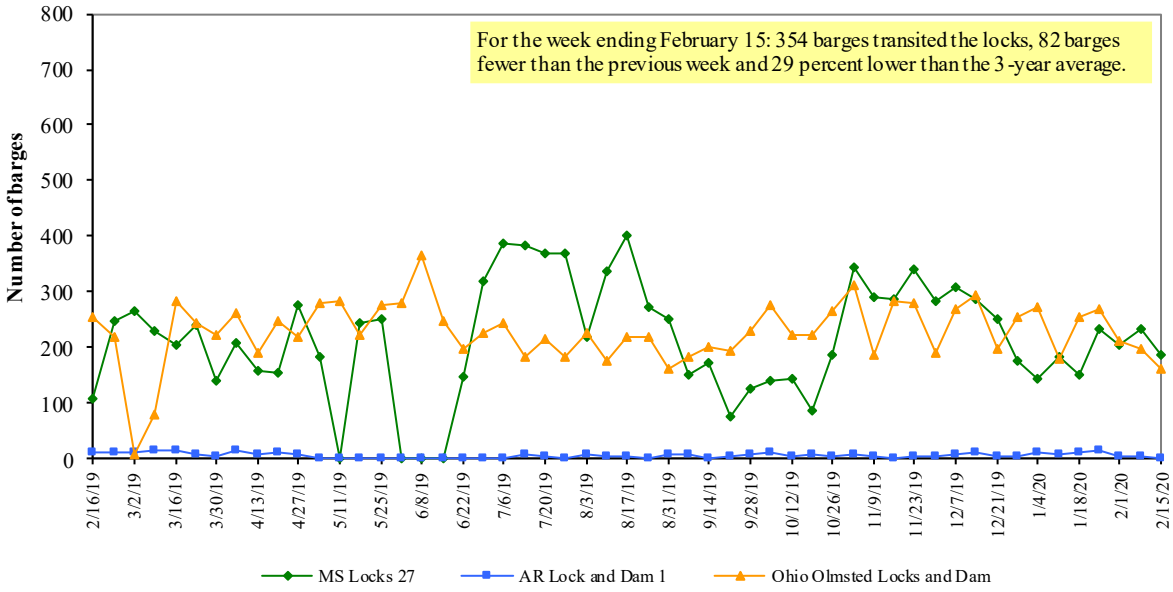
[2] As a percent of same period in 2019.

Note: Total may not add exactly because of rounding. Starting from 11/24/2018, weekly movement through Ohio 52 is replaced by Olmsted.

Source: U.S. Army Corps of Engineers.

Figure 11

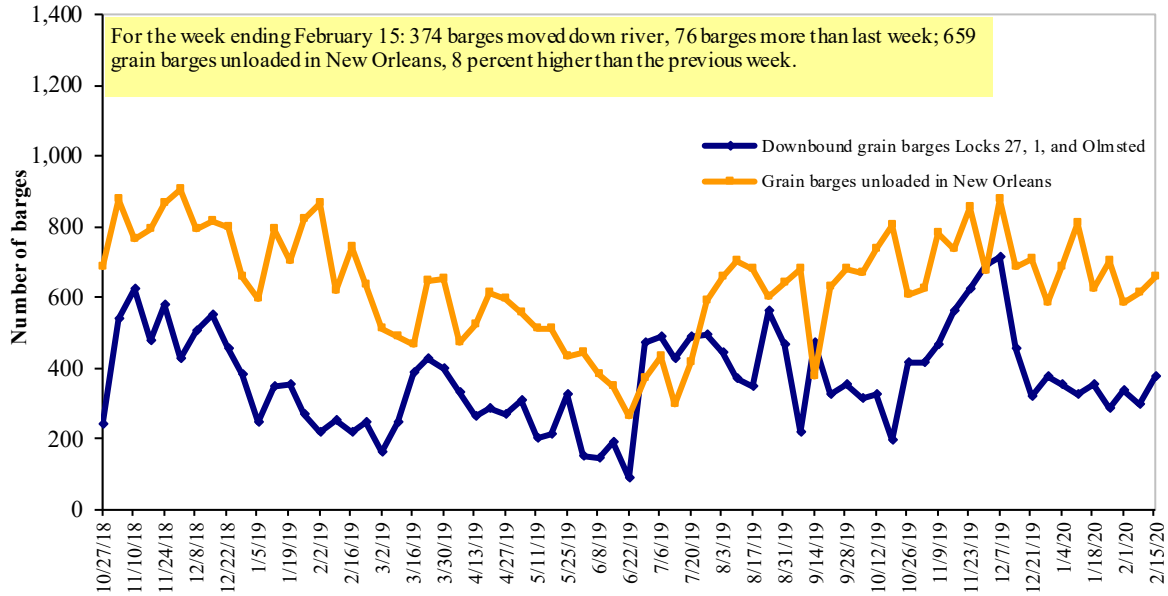
Upbound empty barges transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam



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 2/17/2020 (U.S. $/gallon)

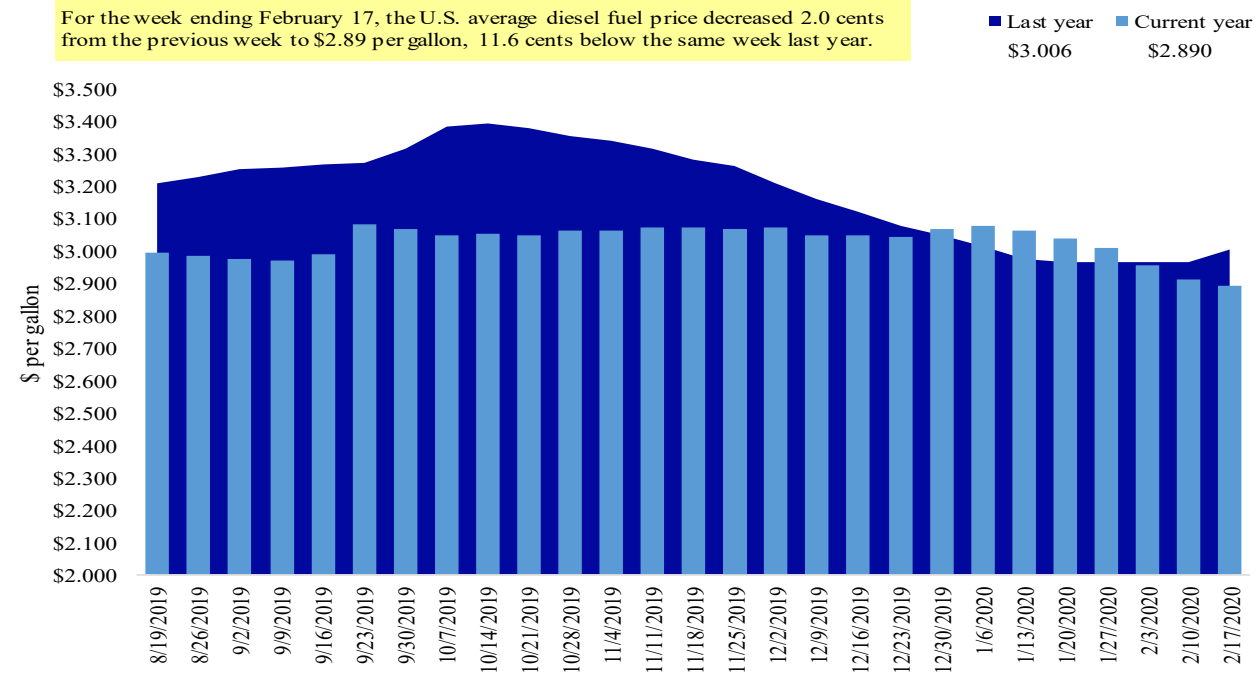
Region	Location	Price	Change from Week ago	Change from Year ago
I	East Coast	2.940	-0.022	-0.133
	New England	3.070	-0.005	-0.095
	Central Atlantic	3.123	-0.023	-0.133
	Lower Atlantic	2.793	-0.023	-0.134
II	Midwest	2.757	-0.019	-0.147
III	Gulf Coast	2.658	-0.017	-0.151
IV	Rocky Mountain	2.858	-0.037	-0.029
V	West Coast	3.468	-0.013	0.010
	West Coast less California	3.081	-0.017	-0.023
	California	3.774	-0.010	0.035
Total	United States	2.890	-0.020	-0.116

[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]									
2/6/2020	1,908	393	1,577	1,219	197	5,294	11,869	5,505	22,668
This week year ago	1,808	886	1,511	1,167	90	5,463	13,021	12,517	31,001
Cumulative exports-marketing year[2]									
2019/20 YTD	6,261	1,809	4,732	3,189	624	16,615	11,890	27,448	55,952
2018/19 YTD	3,771	1,391	3,993	2,962	330	12,446	19,267	17,852	49,565
YTD 2019/20 as % of 2018/19	166	130	119	108	189	133	62	154	113
Last 4 wks. as % of same period 2018/19*	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total 2018/19	8,591	3,204	6,776	5,164	479	24,214	48,924	46,189	119,327
Total 2017/18	9,150	2,343	5,689	4,854	384	22,419	57,209	56,214	135,842

[1] Current unshipped (outstanding) export sales to date.

[2] Shipped export sales to date; new marketing year now in effect for wheat, corn, and soybeans.

*n/a = not available because of a partial government shutdown in January 2019.

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 2/6/2020	Total commitments[2]		% change	Exports[3]
	2019/20 current MY	2018/19 last MY*	current MY from last MY	3-yr. avg. 2016-18
		- 1,000 mt -		
Mexico	10,013	11,150	(10)	14,659
Japan	4,306	6,366	(32)	11,955
Korea	0	2,300	(100)	4,977
Colombia	2,299	2,151	7	4,692
Peru	65	1,469	(96)	2,808
Top 5 importers	**16,683**	**23,436**	**(29)**	**39,091**
Total U.S. corn export sales	**23,759**	**32,287**	**(26)**	**54,024**
% of projected exports	54%	61%		
Change from prior week[2]	**969**	**n/a**		
Top 5 importers' share of U.S. corn export sales	70%	73%		72%
USDA forecast February 2020	**43,893**	**52,545**	**(16)**	
Corn use for ethanol USDA forecast, February 2020	**137,795**	**136,551**	**1**	

[1] Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2018/19; 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.

*n/a = not available because of a partial government shutdown in January 2019.

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 2/6/2020	Total commitments[2] 2019/20 current MY	Total commitments[2] 2018/19 last MY*	% change current MY from last MY	Exports[3] 3-yr. avg. 2016-18
		- 1,000 mt -		- 1,000 mt -
China	12,139	3,484	248	25,733
Mexico	3,236	4,100	(21)	4,271
Indonesia	1,067	1,163	(8)	2,386
Japan	1,508	1,377	10	2,243
Egypt	1,959	1,227	60	1,983
Top 5 importers	**19,909**	**11,350**	**75**	**36,616**
Total U.S. soybean export sales	**32,953**	**30,369**	**9**	**53,746**
% of projected exports	66%	64%		
change from prior week[2]	**645**	**n/a**		
Top 5 importers' share of U.S. soybean export sales	60%	37%		**68%**
USDA forecast, February 2020	**49,728**	**47,629**	**104**	

[1]Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2018/19; 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.

*n/a = not available because of a partial government shutdown in January 2019.

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 2/6/2020	Total commitments[2] 2019/20 current MY	Total commitments[2] 2018/19 last MY*	% change current MY from last MY	Exports[3] 3-yr. avg. 2016-18
		- 1,000 mt -		- 1,000 mt -
Philippines	2,802	2,415	16	3,047
Mexico	3,089	2,213	40	3,034
Japan	2,201	2,166	2	2,695
Nigeria	1,297	862	50	1,564
Indonesia	766	692	11	1,381
Korea	1,188	1,134	5	1,355
Taiwan	1,059	812	30	1,164
Egypt	101	391	(74)	821
Thailand	757	790	(4)	747
Iraq	262	414	(37)	574
Top 10 importers	**13,522**	**11,888**	14	**16,382**
Total U.S. wheat export sales	**21,909**	**17,909**	**22**	**24,388**
% of projected exports	80%	70%		
change from prior week[2]	**643**	**n/a**		
Top 10 importers' share of U.S. wheat export sales	62%	66%		67%
USDA forecast, February 2020	**27,248**	**25,504**	**7**	

[1] Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2018/19; 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.

*n/a = not available because of a partial government shutdown in January 2019.

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 02/13/20	Previous week*	Current week as % of previous	2020 YTD*	2019 YTD*	2020 YTD as % of 2019 YTD	Last 4-weeks as % of: Last year	Last 4-weeks as % of: Prior 3-yr. avg.	2019 total*
Pacific Northwest									
Wheat	302	344	88	1,991	1,535	130	123	113	13,961
Corn	202	1	n/a	269	1,500	18	25	23	7,047
Soybeans	214	175	122	1,610	1,528	105	95	80	11,969
Total	**718**	**520**	**138**	**3,870**	**4,563**	**85**	**83**	**74**	**32,977**
Mississippi Gulf									
Wheat	110	116	95	512	664	77	61	69	4,448
Corn	458	589	78	2,951	3,360	88	94	81	20,763
Soybeans	674	306	220	5,050	4,444	114	95	84	31,398
Total	**1,241**	**1,011**	**123**	**8,513**	**8,467**	**101**	**91**	**82**	**56,609**
Texas Gulf									
Wheat	51	55	93	515	561	92	55	48	6,009
Corn	0	0	n/a	74	63	117	175	124	640
Soybeans	0	0	n/a	0	0	n/a	n/a	n/a	2
Total	**51**	**55**	**93**	**589**	**625**	**94**	**65**	**55**	**6,650**
Interior									
Wheat	66	50	131	288	211	136	183	128	1,987
Corn	122	184	66	889	850	105	109	101	7,857
Soybeans	138	172	80	1,024	844	121	109	123	7,043
Total	**325**	**407**	**80**	**2,201**	**1,905**	**116**	**115**	**114**	**16,887**
Great Lakes									
Wheat	0	0	n/a	1	21	4	0	0	1,339
Corn	0	0	n/a	0	0	n/a	n/a	n/a	11
Soybeans	0	0	n/a	0	16	0	n/a	n/a	493
Total	**0**	**0**	**n/a**	**1**	**38**	**2**	**0**	**0**	**1,844**
Atlantic									
Wheat	0	0	n/a	0	0	n/a	n/a	0	37
Corn	0	0	n/a	0	21	0	0	0	99
Soybeans	18	20	92	171	209	82	82	43	1,353
Total	**18**	**20**	**92**	**171**	**230**	**75**	**77**	**41**	**1,489**
U.S. total from ports*									
Wheat	528	564	94	3,307	2,993	110	98	91	27,781
Corn	781	775	101	4,183	5,794	72	79	70	36,417
Soybeans	1,044	674	155	7,856	7,040	112	96	85	52,258
Total	**2,354**	**2,013**	**117**	**15,346**	**15,827**	**97**	**90**	**81**	**116,457**

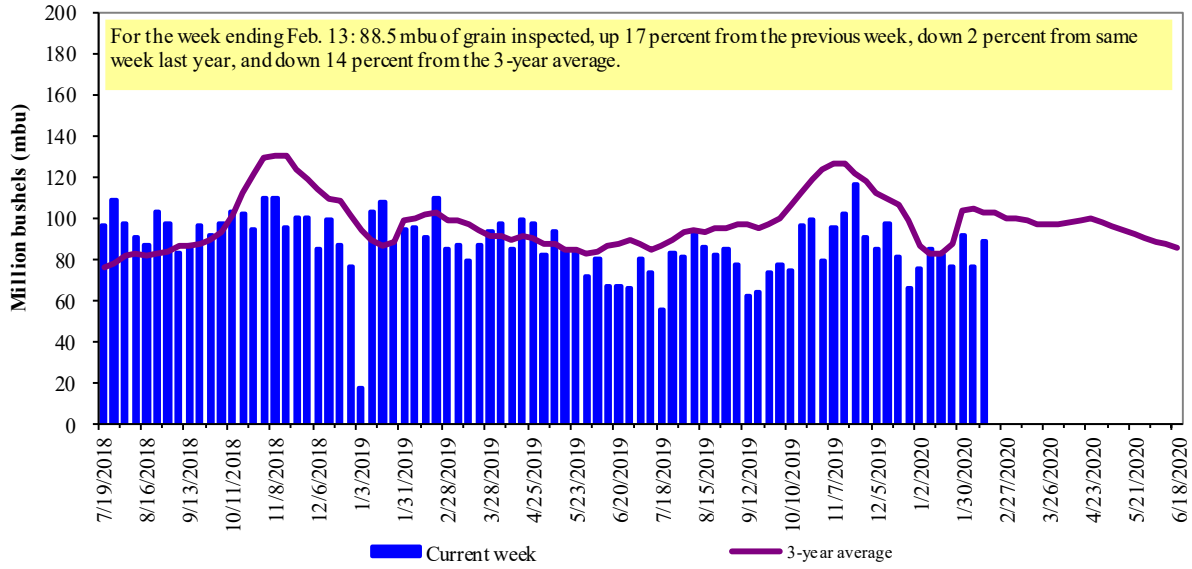
*Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

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 53 percent of the U.S. export grain shipments departed through the U.S. Gulf region in 2018.

Figure 14

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

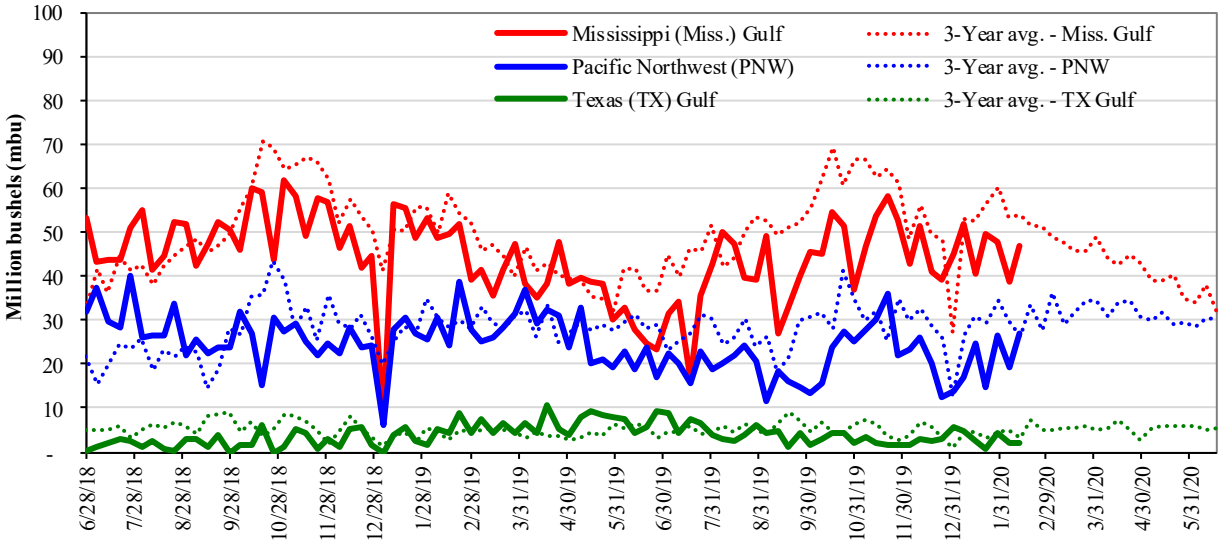


Note: 3-year average consists of 4-week running average.

Source: USDA, Federal Grain Inspection Service.

Figure 15

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



Week ending 02/13/20 inspections (mbu):	
MS Gulf:	46.8
PNW:	26.9
TX Gulf:	1.9

Percent change from:	MS Gulf	TX Gulf	U.S. Gulf	PNW
Last wk:	up 21	down 7	up 20	up 41
Last Year (same wk):	down 5	down 57	down 10	up 12
3-yr avg. (4-wk. mov. Avg):	down 16	down 53	down 19	down 10

Source: USDA, Federal Grain Inspection Service.

Table 17

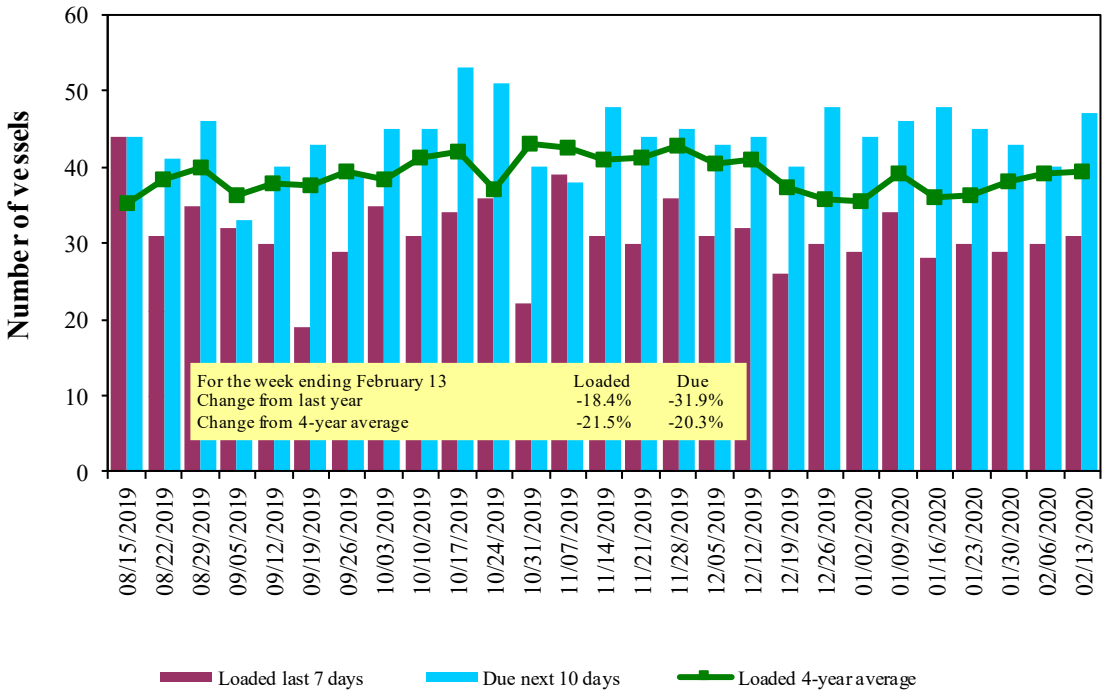
Weekly port region grain ocean vessel activity (number of vessels)

	Gulf			Pacific Northwest
Date	In port	Loaded 7-days	Due next 10-days	In port
2/13/2020	34	31	47	15
2/6/2020	43	30	40	15
2019 range	(26…61)	(18...44)	(33...69)	(8...33)
2019 average	40	31	49	17

Source: USDA, Agricultural Marketing Service.

Figure 16

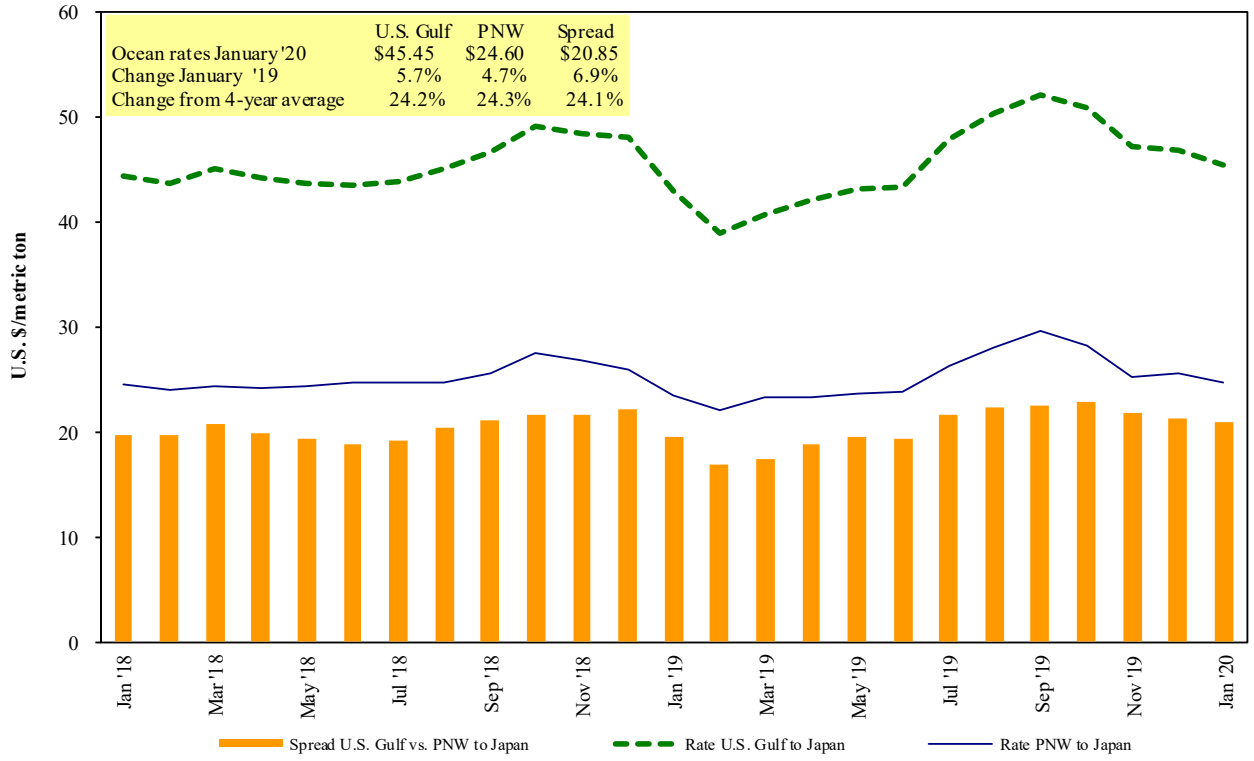
U.S. Gulf[1] vessel loading activity



[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 02/15/2020

Export region	Import region	Grain types	Loading date	Volume loads (metric tons)	Freight rate (US$/metric ton)
U.S. Gulf	Bangladesh	Wheat	Dec 10/20	48,990	79.92*
U.S. Gulf	China	Heavy grain	Jan 25/30	65,000	46.50
U.S. Gulf	China	Heavy grain	Dec 15/20	65,000	49.75
U.S. Gulf	China	Heavy grain	Nov 15/18	66,000	49.00
U.S. Gulf	Rotterdam	Heavy grain	Feb 5/11	55,000	19.50
PNW	China	Heavy grain	Jan 22/26	63,000	23.00
PNW	Bangladesh	Wheat	Dec 10/20	23,080	74.44*
Brazil	China	Heavy grain	May 1/31	60,000	33.25 op 33.00
Brazil	China	Heavy grain	Mar 1/10	65,000	32.00
Brazil	China	Heavy grain	Feb 12/21	65,000	34.50
Brazil	China	Heavy grain	Feb 18/27	60,000	34.00
Brazil	Japan	Corn	Dec 22/31	49,000	37.25 op 37.15

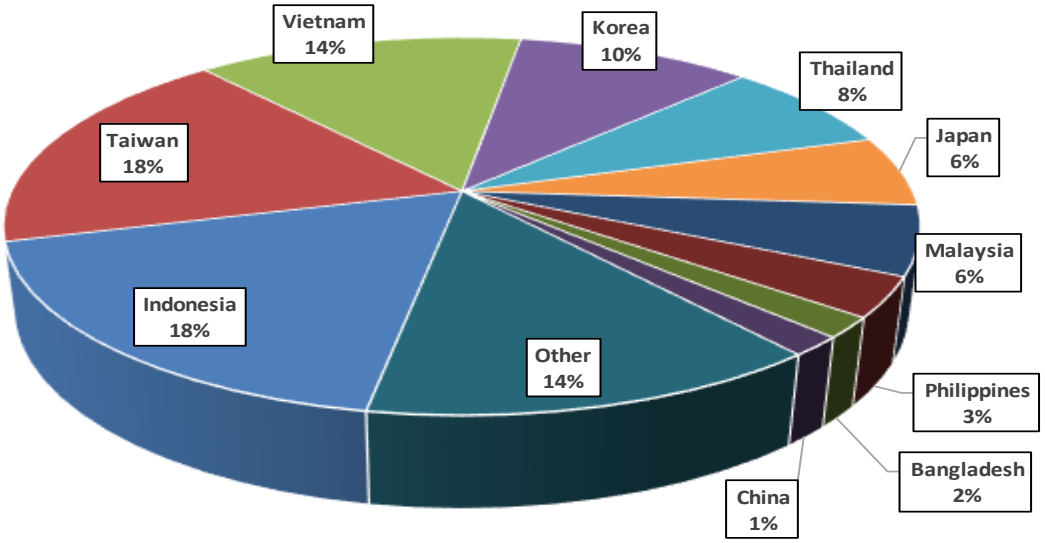
*50 percent of food aid from the United States is required to be shipped on U.S.-flag vessels.

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 2018, containers were used to transport 8 percent of total U.S. waterborne grain exports. Approximately 55 percent of U.S. waterborne grain exports in 2018 went to Asia, of which 13 percent were moved in containers. Approximately 94 percent of U.S. waterborne containerized grain exports were destined for Asia.

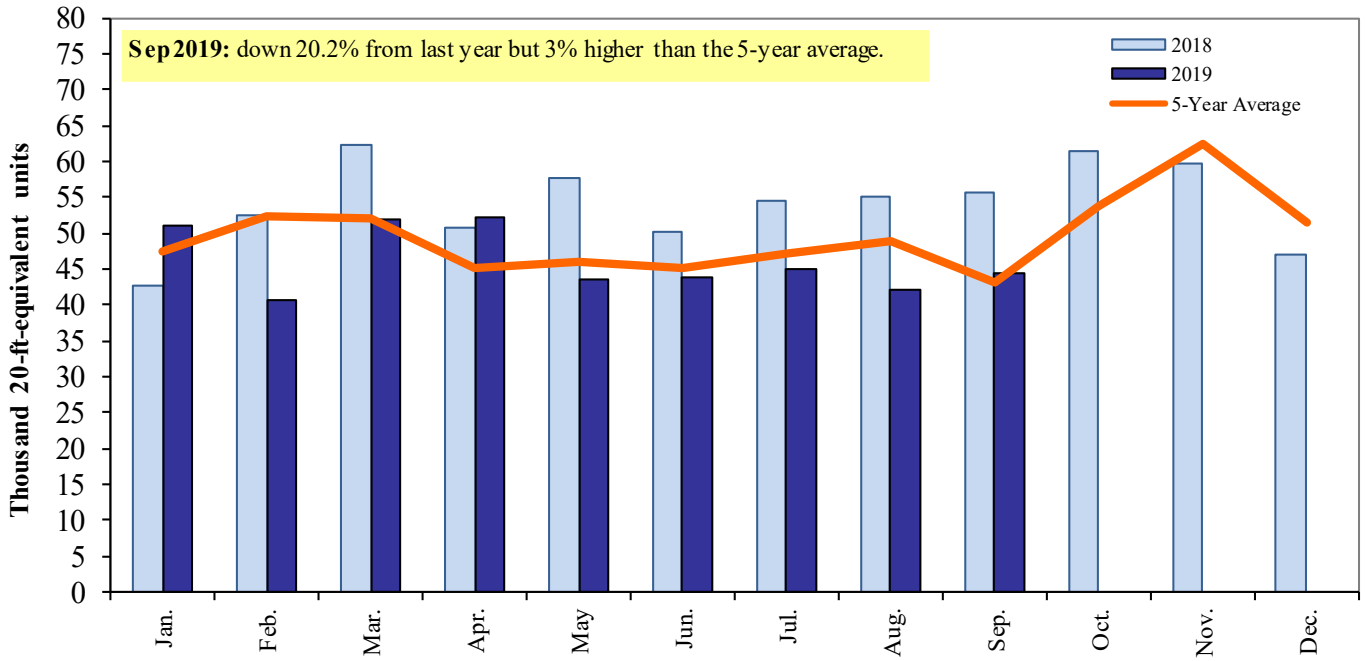
Figure 18
Top 10 destination markets for U.S. containerized grain exports, Jan-Sep 2019



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, and 120810.

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

Figure 19
Monthly shipments of containerized grain to Asia



Note: The following Harmonized Tariff Codes are used to calculate containerized grains movements: 100190, 100200, 100300, 100400, 100590, 100700, 110100, 110220, 110290, 120100, 120810, 230210, 230310, 230330, and 230990.

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

Contacts and Links

Coordinators		
Surajudeen (Deen) Olowolayemo	surajudeen.olowolayemo@usda.gov	(202) 720 - 0119
Maria Williams	maria.williams@usda.gov	(202) 690 - 4430
Bernadette Winston	bernadette.winston@usda.gov	(202) 690 - 0487
Grain Transportation Indicators		
Surajudeen (Deen) Olowolayemo	surajudeen.olowolayemo@usda.gov	(202) 720 - 0119
Rail Transportation		
Johnny Hill	johnny.hill@usda.gov	(202) 690 - 3295
Jesse Gastelle	jesse.gastelle@usda.gov	(202) 690 - 1144
Peter Caffarelli	petera.caffarelli@usda.gov	(202) 690 - 3244
Barge Transportation		
April Taylor	april.taylor@usda.gov	(202) 720 - 7880
Kelly P. Nelson	kelly.nelson@usda.gov	(202) 690 - 0992
Bernadette Winston	bernadette.winston@usda.gov	(202) 690 - 0487
Truck Transportation		
April Taylor	april.taylor@usda.gov	(202) 720 - 7880
Grain Exports		
Johnny Hill	johnny.hill@usda.gov	(202) 690 - 3295
Kranti Mulik	kranti.mulik@usda.gov	(202) 756 - 2577
Ocean Transportation		
Surajudeen (Deen) Olowolayemo (Freight rates and vessels)	surajudeen.olowolayemo@usda.gov	(202) 720 - 0119
April Taylor (Container movements)	april.taylor@usda.gov	(202) 720 - 7880
Editor		
Maria Williams	maria.williams@usda.gov	(202) 690-4430

Subscription Information: Send relevant information to **GTRContactUs@usda.gov** for an electronic copy *(printed copies are also available upon request)*.

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