USDA United States Department of Agriculture

Grain Transportation Report

A weekly publication of the Agricultural Marketing Service
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March 5, 2020

Contents

The next release is March 12, 2020

WEEKLY HIGHLIGHTS

Ports Begin Enforcement of Bunker Fuel Carriage Ban

Ports in the United States and around the world have tightened their oversight and started enforcing the IMO 2020 low-sulfur fuel regulation as of March 1. The regulation lowered the maximum allowed sulfur content of fuel from 3.5 percent to 0.5 percent and officially took effect January 1. However, ships were given a grace period while the industry transitioned. As of March 1, any ships burning or merely storing high-sulfur, noncompliant fuel may be detained and penalized. Penalties may include a "Notice of Violation" by the Coast Guard and fines between $2,000 to $10,000. In addition, the U.S. Environmental Protection Agency may assess civil penalties of over $75,000 per violation per day, according to *American Shipper*.

Surface Transportation Board Announces Final Rule on Demurrage Regulation

On February 28, the Surface Transportation Board announced a final rule clarifying the regulation of demurrage. The final rule amends regulations governing the class exemptions for certain commodities. For these commodities, the final rule clearly states that demurrage continues to be subject to Board regulation. Additionally, the final rule partially revokes the class exemption that currently covers certain non-grain, agricultural commodities: the exemption will no longer apply to the regulation of demurrage. The final rule will become effective April 3, 2020.

DOT Announces $1 Billion in Funding for Surface Transportation Investments

In February, the Department of Transportation (DOT) announced $1 billion to be awarded for national infrastructure investments through its Better Utilizing Investments to Leverage Development (or "BUILD") transportation grants program. The fiscal year 2020 funds are competitively awarded for surface transportation infrastructure projects that will have a significant local or regional impact. Eligible projects include road and bridge, rail, port, and intermodal investment. Fifty percent of BUILD grant funding will go to rural projects that deliver positive benefits for rural communities, consistent with a DOT initiative to prioritize rural economic opportunity. Applications for BUILD Transportation grants are due May 18, 2020.

Snapshots by Sector

Export Sales

For the week ending February 20, **unshipped balances** of wheat, corn, and soybeans totaled 22.2 million metric tons (mmt). This represented a 34-percent decrease in outstanding sales, compared to the same time last year. Net **corn export sales** reached 0.865 mmt, down 31 percent from the past week. Net **soybean export sales** were 0.339 mmt, down 31 percent from the previous week. Net weekly **wheat export sales** reached 0.382 mmt, up 10 percent from the previous week.

Rail

U.S. Class I railroads originated 18,909 **grain carloads** during the week ending February 22. This was a 3-percent increase from the previous week, 13 percent less than last year, and 10 percent lower than the 3-year average.

Average March shuttle **secondary railcar** bids/offers (per car) were $160 below tariff for the week ending February 27. This is $19 less than last week and $2,222 lower than this week last year. There were no non-shuttle bids/offers this week.

Barge

For the week ending February 29, **barge grain movements** totaled 408,595. This was a 3-percent increase from the previous week and 71 percent more than the same period last year.

For the week ending February 29, 263 grain barges **moved down river**—10 barges more than the previous week. There were 479 grain barges **unloaded in New Orleans**, 9 percent fewer than the previous week.

Ocean

For the week ending February 27, 31 **oceangoing grain vessels** were loaded in the Gulf—6.1 percent fewer than the same period last year. Within the next 10 days (starting February 28), 39 vessels were expected to be loaded—41.8 percent fewer than the same period last year.

As of February 27, the rate for shipping a metric ton (mt) of grain from the U.S. Gulf to Japan was $43.50. This was 1 percent more than the previous week. The rate from the Pacific Northwest to Japan was $23.50 per mt, 3 percent more than the previous week.

Fuel

For the week ending March 2, the U.S. average **diesel fuel price** decreased 3.1 cents from the previous week to $2.851 per gallon, 22.5 cents below the same week last year.

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Web: http://dx.doi.org/10.9752/TS056.03-05-2020

Feature Article/Calendar

Grain Transportation Costs to Mexico in Fourth Quarter 2019

Mexico is the largest importer of U.S. grain (corn, soybeans, and wheat). Based on the past 3-year average, it is the leading importer of U.S. **corn** and the second largest importer of U.S. **wheat** and **soybeans**. Grain can be transported to Mexico through cross-border movements by land or shipped via the sea route to an appropriate port for inland distribution. In this article, we examine the costs of transporting grain from the United States to Mexico through the land and water routes and track how those costs change from quarter to quarter and year to year.

From the third quarter to fourth quarter 2019 (quarter to quarter), the transportation costs of shipping grain (corn, soybeans, and wheat) to Mexico through the water route declined, while the costs of shipping by the land route remained steady. Also, quarter to quarter, lower barge and ocean freight rates pushed down the transportation costs of seaborne corn and soybeans. Lower truck and ocean freight rates pushed down the transportation cost of shipping wheat by the water route. The transportation costs of shipping corn and soybeans to Mexico by the land route remained relatively unchanged from quarter to quarter, while the costs of shipping corn by the land route fell by less than 1 percent.

Quarterly costs of transporting United States grain to Veracruz and Guadalajara, Mexico

	Water route (to Veracruz) $/metric ton					Land route (to Guadalajara) $/metric ton				
	2018 4th qtr.	2019 3rd qtr.	2019 4th qtr.	Percent change Yr. to yr.	Percent change Qtr. to qtr.	2018 4th qtr.	2019 3rd qtr.	2019 4th qtr.	Percent change Yr. to yr.	Percent change Qtr. to qtr.
Corn										
Origin			**IL**					**IA**		
Truck	12.10	9.18	11.46	-5.3	24.8	5.20	4.72	4.19	-19.4	-11.2
Rail [1]						91.13	95.44	96.23	5.6	0.8
Barge	21.38	23.89	18.46	-13.7	-22.7					
Ocean[2]	15.63	15.50	15.23	-2.6	-1.7					
Total transportation cost	49.11	48.57	45.15	-8.1	-7.0	96.33	100.16	100.42	4.2	0.3
Farm value[3]	137.99	155.50	146.45	6.1	-5.8	135.43	154.06	146.06	7.8	-5.2
Landed cost[4]	187.10	204.07	191.60	2.4	-6.1	231.76	254.22	246.48	6.4	-3.0
Transport % of landed cost	26	24	24			42	39	41		
Soybeans										
Origin			**IL**					**NE**		
Truck	12.10	9.18	11.46	-5.3	24.8	5.20	4.72	4.19	-19.4	-11.2
Rail						94.37	97.91	98.86	4.8	1.0
Barge	21.38	23.89	18.46	-13.7	-22.7					
Ocean	15.63	15.50	15.23	-2.6	-1.7					
Total transportation cost	49.11	48.57	45.15	-8.1	-7.0	99.57	102.63	103.05	3.5	0.4
Farm value	323.34	317.10	329.96	2.0	4.1	300.20	293.83	304.12	1.3	3.5
Landed cost	372.45	365.67	375.11	0.7	2.6	399.77	396.46	407.17	1.9	2.7
Transport % of landed cost	13	13	12			25	26	25		
Wheat										
Origin			**KS**					**KS**		
Truck	5.20	4.72	4.19	-19.4	-11.2	5.20	4.72	4.19	-19.4	-11.2
Rail	42.66	43.31	43.31	1.5	0.0	79.66	83.12	83.13	4.4	0.0
Ocean	15.63	15.50	15.23	-2.6	-1.7					
Total transportation cost	63.49	63.53	62.73	-1.2	-1.3	84.86	87.84	87.32	2.9	-0.6
Farm value	175.14	141.10	142.57	-18.6	1.0	175.14	141.10	142.57	-18.6	1.0
Landed cost	238.63	204.63	205.30	-14.0	0.3	260.00	228.94	229.89	-11.6	0.4
Transport % of landed cost	27	31	31			33	38	38		

[1]Rail rates include U.S. and Mexico portions of the movement. Mexico rail rates are estimated based on actual quoted market rates. BNSF and Union Pacific quoted rail tariff rates are through rates for shuttle trains. Rail rates include fuel surcharges, but do not include the cost of purchasing empty rail cars in the secondary market, which could exceed the rail tariff rate plus fuel surcharge shown in the table.
[2]Source for ocean freight rates: O'Neil Commodity Consulting.
[3]Source for farm values: USDA, National Agricultural Statistics Service.
[4]Landed cost is total transportation cost plus farm value.
Note: Total may not add exactly because of rounding.
Source: Compiled by the USDA, Agricultural Marketing Service.

Quarter to quarter, the decline in barge rates likely resulted from a higher-than-average empty barge supply in the Mississippi River System during the fourth quarter. More grain barges were **unloaded** in New Orleans in the fourth quarter than in the third quarter. This pattern, in turn, sent 258 more empty barges returning upriver during the fourth quarter—4 percent more than in the third quarter. In addition,

the navigational difficulties that had plagued the river through most of the summer cleared up by the fourth quarter, making travel easier. A lower risk of delays made carriers more willing to sell, as there was less risk of unanticipated cost overruns. Better navigation also made shippers to more willing to ship since deliveries to export elevators would have been more reliable. In the fourth quarter, 9.16 million tons of grain were shipped downriver, compared to 6.35 million tons in the third quarter. Also, in the fourth quarter, ocean freight rates for shipping bulk items, including grain, fell as a result of a weak trade of iron ore and coal (see January 16, 2020 *GTR*). Tariff rail rates remained fairly steady during the quarter.

Figure 1. Water route shipment costs ($/mt) to Veracruz, Mexico

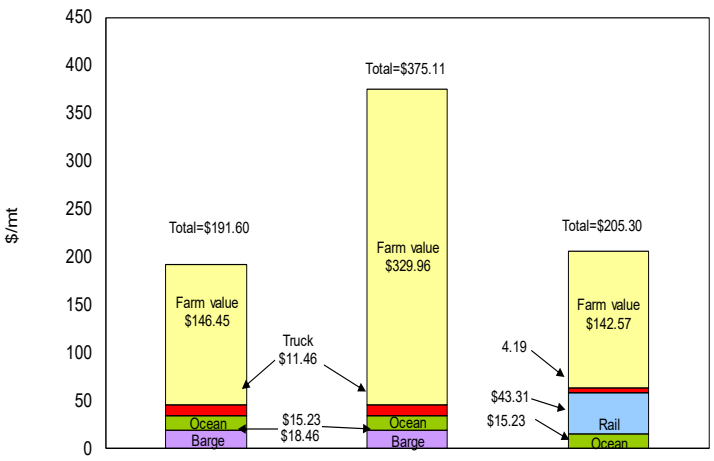
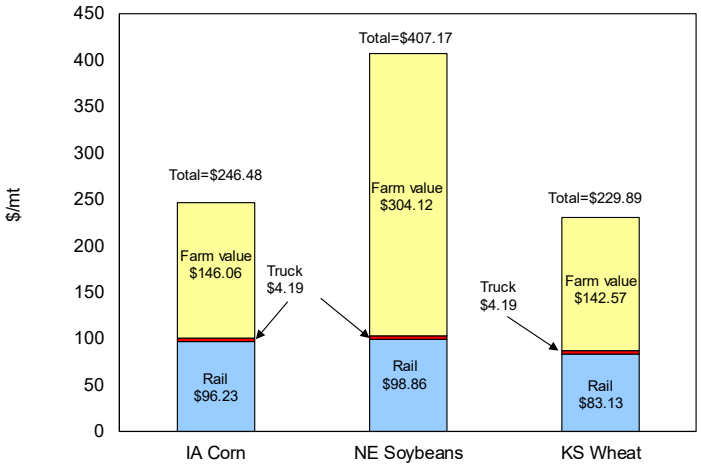


Figure 2. Land route shipment costs ($/mt) to Guadalajara, Mexico



Source: USDA, Agricultural Marketing Service.

Lower quarter-to-quarter landed costs for corn (over both water and land routes) reflected reduced transportation costs and farm values. However, soybean landed costs increased—mostly from the increase in the farm values—while the landed costs for wheat were unchanged. The fourth-quarter landed costs for the water route ranged from $192 per metric ton (mt) to $375 per mt (see table and fig. 1). For the land route, landed costs ranged from $230 per mt to $407 per mt (see table and fig. 2). The share of landed costs for transportation ranged from 12 percent to 31 percent for the water route and from 25 percent to 41 percent for the land route (see table). Higher farm values pushed up the year-to-year[1] landed costs for corn and soybeans, while lower year-to-year landed costs for wheat reflected farm values that were lower than in fourth-quarter 2018.

Although Mexico imported slightly less grain from the United States than it had in the previous quarter, it imported more U.S. grain than in fourth quarter 2018. According to USDA's grain inspection data, Mexico imported 3.07 million metric tons (mmt) of corn, 1.30 mmt of soybeans, and 0.86 mmt of wheat—3, 0, and 8 percent less than the previous quarter, respectively. However, year to year, U.S. inspections for export to Mexico rose 10 percent for soybeans and 33 percent for wheat, while corn inspections fell 14 percent. The recently signed trade agreement among the United States, Mexico, and Canada could boost U.S. grain export to Mexico.

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[1] "Year-to-year" change is from fourth quarter 2018 to fourth quarter 2019.

Grain Transportation Indicators

Table 1

Grain transport cost indicators [1]

	Truck	Rail		Barge	Ocean	
For the week ending		Unit train	Shuttle		Gulf	Pacific
03/04/20	191	n/a	218	160	195	167
02/26/20	193	n/a	219	158	193	161

[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	2/28/2020	2/21/2020
Corn	IL–Gulf	-0.53	-0.54
Corn	NE–Gulf	-0.71	-0.68
Soybean	IA–Gulf	-1.08	-1.13
HRW	KS–Gulf	-2.16	-2.14
HRS	ND–Portland	-2.29	-2.24

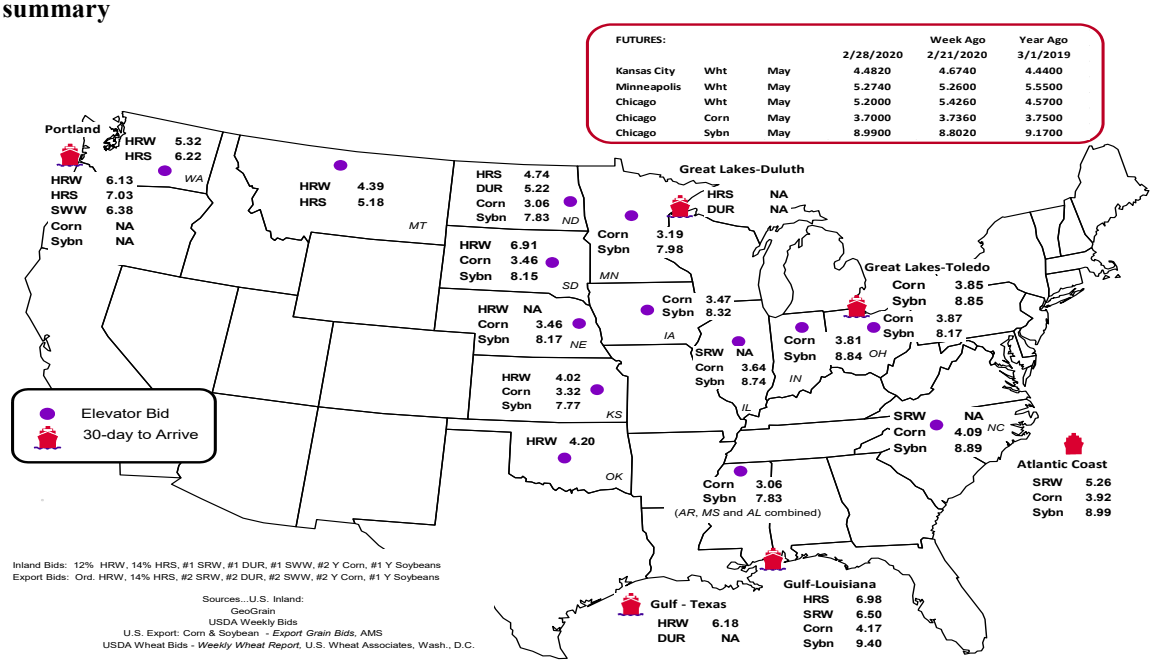
Note: nq = no quote; n/a = not available; HRW = hard red winter wheat; HRS = hard red spring wheat.

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]
2/26/2020[p]	111	554	3,979	186	4,830	2/22/2020	2,606
2/19/2020[r]	428	511	5,119	111	6,169	2/15/2020	2,665
2020 YTD[r]	3,859	5,359	37,019	1,631	47,868	2020 YTD	18,401
2019 YTD[r]	5,210	10,222	46,445	3,605	65,482	2019 YTD	19,797
2020 YTD as % of 2019 YTD	74	52	80	45	73	% change YTD	93
Last 4 weeks as % of 2019[2]	42	33	96	60	76	Last 4wks. % 2019	107
Last 4 weeks as % of 4-year avg.[2]	49	31	81	37	66	Last 4wks. % 4 yr.	122
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.

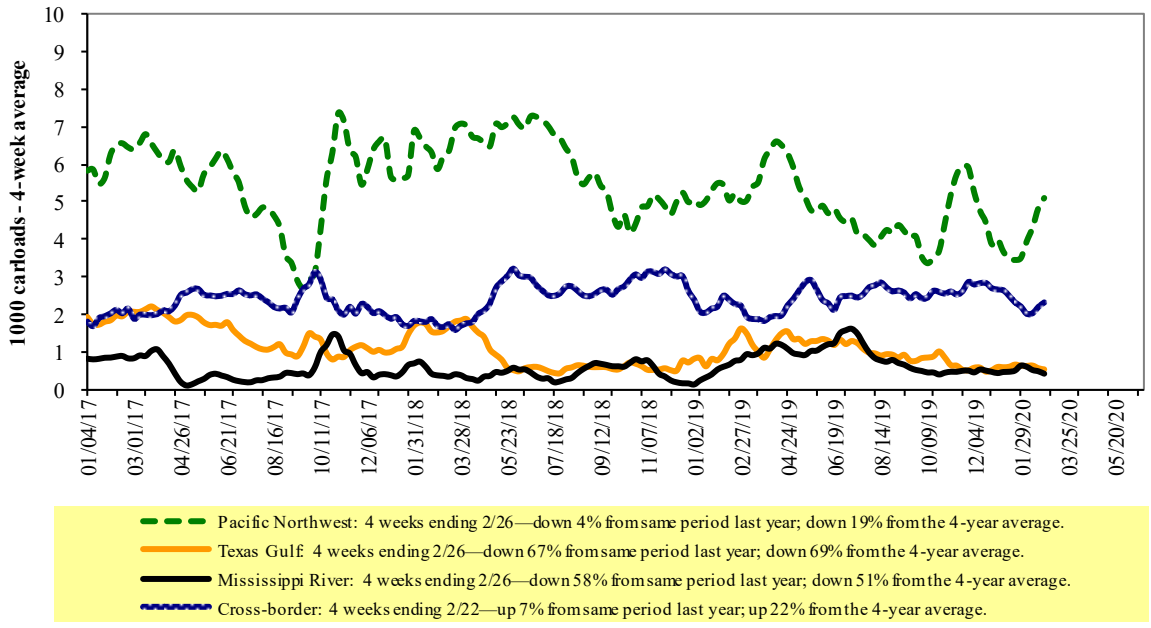
[3] Cross-border weekly data is approximately 15 percent below the Association of American Railroads' reported weekly carloads received by Mexican railroads. to reflect switching between Kansas City Southern de Mexico (KCSM) and Grupo Mexico.

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	
2/22/2020	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	2,066	2,310	9,448	976	4,109	18,909	3,052	3,932
This week last year	2,141	2,685	10,619	1,190	5,059	21,694	4,213	3,496
2020 YTD	14,040	17,855	81,026	8,420	34,954	156,295	26,336	28,943
2019 YTD	15,718	21,334	87,746	8,617	41,427	174,842	31,215	31,136
2020 YTD as % of 2019 YTD	89	84	92	98	84	89	84	93
Last 4 weeks as % of 2019*	85	81	95	94	88	91	76	108
Last 4 weeks as % of 3-yr. avg.**	89	84	92	104	83	89	84	95
Total 2019	91,611	137,271	568,369	58,527	260,269	1,116,047	212,592	235,892

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

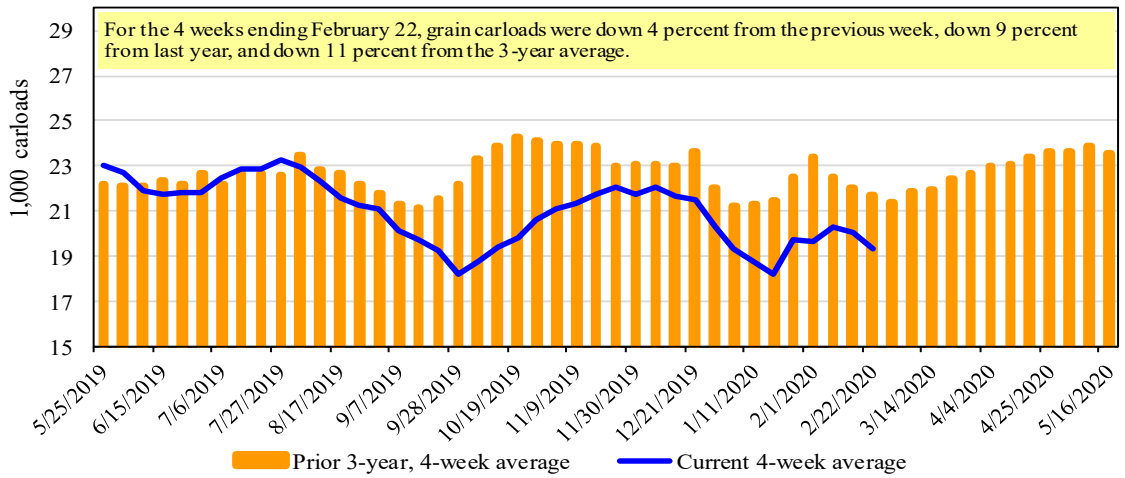
**The past 4 weeks as a percent of the same period from the prior 3-year average. YTD = year-to-date; avg. = average; yr. = year.

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							
2/27/2020		Mar-20	Mar-19	Apr-20	Apr-19	May-20	May-19	Jun-20	Jun-19
BNSF[3]	COT grain units	no bid	n/a	0	n/a	no bid	n/a	no bid	n/a
	COT grain single-car	0	n/a	0	n/a	0	n/a	0	n/a
UP[4]	GCAS/Region 1	no bid	no offer	no offer	no offer	no offer	no bid	n/a	n/a
	GCAS/Region 2	no bid	no offer	no bid	130	no bid	no bid	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.

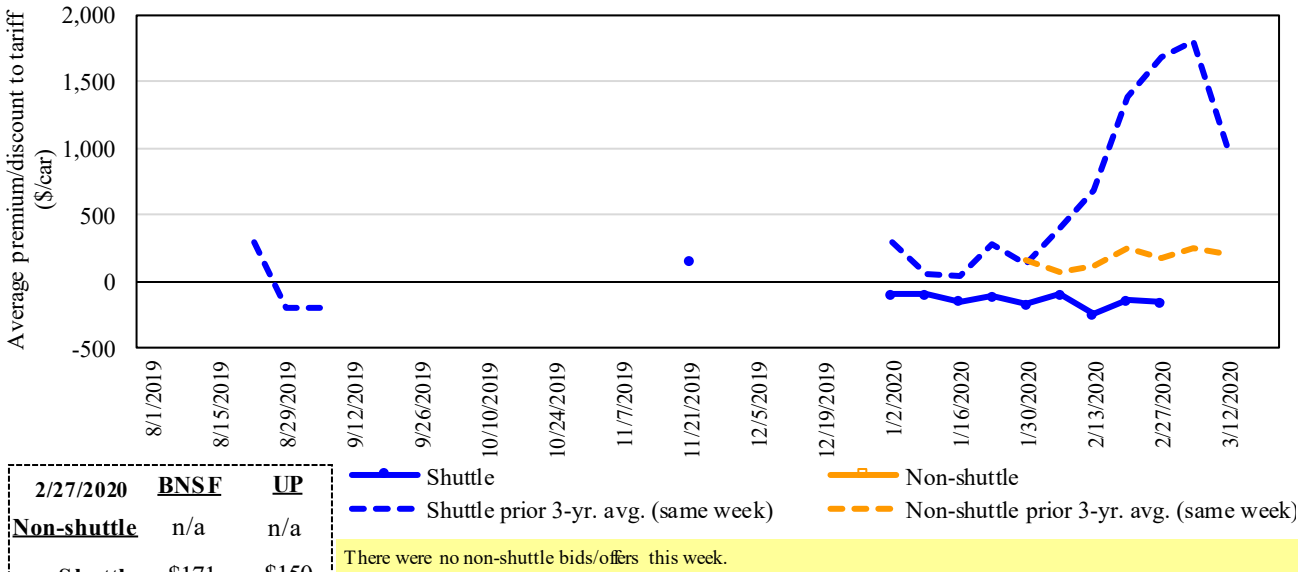
Region 1 includes: AR, IL, LA, MO, NM, OK, TX, WI, and Duluth, MN.

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 March 2020, secondary market

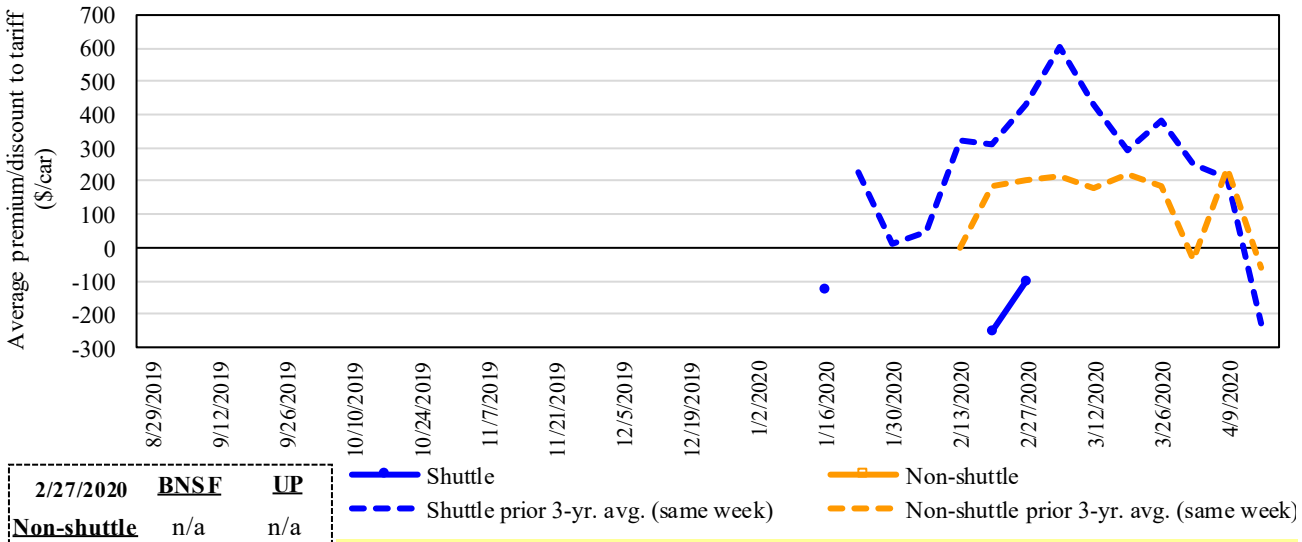


2/27/2020	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	-$171	-$150

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers fell $19 this week and are $310 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 April 2020, secondary market



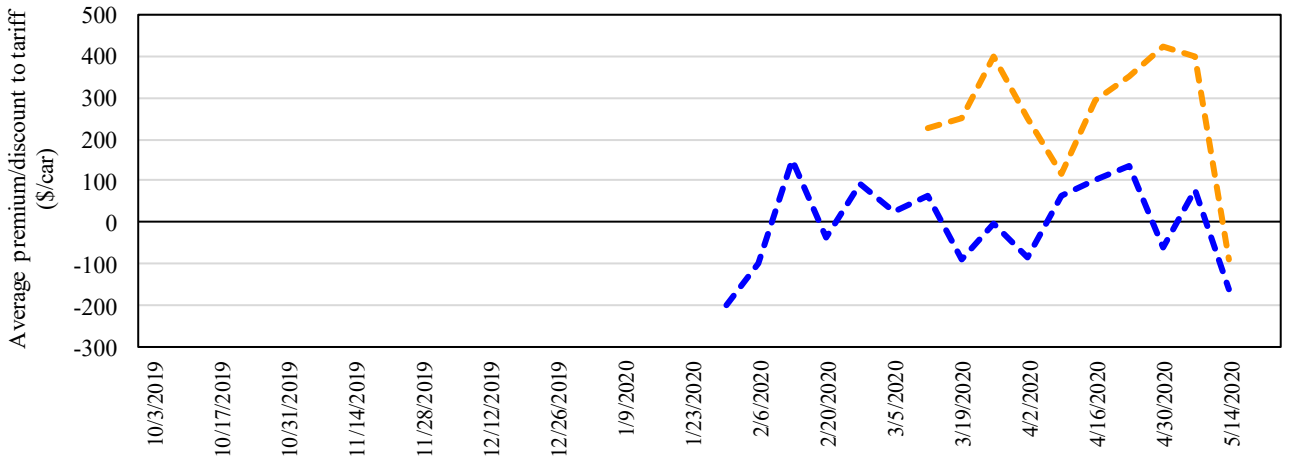
2/27/2020	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	n/a	-$100

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers rose $150 this week and are at the peak.

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

Figure 6

Bids/offers for railcars to be delivered in May 2020, secondary market



2/27/2020	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:	Delivery period					
	2/27/2020	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-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**	**(171)**	**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	(3060)	n/a	n/a	n/a	n/a	n/a
	UP-Pool	**(150)**	**(100)**	**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	(1383)	n/a	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]

March 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	$86	$40.41	$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	$151	$46.44	$1.26	-1
	Sioux Falls, SD	Galveston-Houston, TX	$6,976	$0	$69.28	$1.89	1
	Colby, KS	Galveston-Houston, TX	$4,801	$166	$49.32	$1.34	0
	Amarillo, TX	Los Angeles, CA	$5,121	$231	$53.14	$1.45	0
Corn	Champaign-Urbana, IL	New Orleans, LA	$3,900	$171	$40.43	$1.03	-3
	Toledo, OH	Raleigh, NC	$6,816	$0	$67.69	$1.72	4
	Des Moines, IA	Davenport, IA	$2,415	$36	$24.34	$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	$106	$38.79	$0.99	-2
	Des Moines, IA	Los Angeles, CA	$5,680	$310	$59.48	$1.51	-1
Soybeans	Minneapolis, MN	New Orleans, LA	$3,631	$186	$37.91	$1.03	-11
	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	$171	$47.83	$1.30	-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	$272	$62.40	$1.70	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	$171	$39.63	$1.01	0
	Lincoln, NE	Galveston-Houston, TX	$3,880	$0	$38.53	$0.98	0
	Des Moines, IA	Amarillo, TX	$4,220	$134	$43.24	$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	$197	$50.37	$1.37	2
	Toledo, OH	Huntsville, AL	$4,805	$0	$47.72	$1.30	4
	Grand Island, NE	Portland, OR	$5,860	$278	$60.96	$1.66	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: March 2020							
	Origin		Tariff rate	Fuel surcharge	Tariff rate plus fuel surcharge per:		Percent change[4]
Commodity	state	Destination region	per car[1]	per car[2]	metric ton[3]	bushel[3]	Y/Y
Wheat	MT	Chihuahua, CI	$7,509	$0	$76.72	$2.09	3
	OK	Cuautitlan, EM	$6,775	$118	$70.44	$1.92	0
	KS	Guadalajara, JA	$7,534	$576	$82.86	$2.25	4
	TX	Salinas Victoria, NL	$4,329	$75	$44.99	$1.22	0
Corn	IA	Guadalajara, JA	$8,902	$488	$95.94	$2.43	5
	SD	Celaya, GJ	$8,140	$0	$83.17	$2.11	3
	NE	Queretaro, QA	$8,278	$265	$87.30	$2.22	1
	SD	Salinas Victoria, NL	$6,905	$0	$70.55	$1.79	0
	MO	Tlalnepantla, EM	$7,643	$259	$80.74	$2.05	1
	SD	Torreon, CU	$7,690	$0	$78.57	$1.99	3
Soybeans	MO	Bojay (Tula), HG	$8,547	$456	$91.99	$2.50	4
	NE	Guadalajara, JA	$9,172	$476	$98.57	$2.68	5
	IA	El Castillo, JA	$9,490	$0	$96.97	$2.64	4
	KS	Torreon, CU	$7,964	$327	$84.71	$2.30	4
Sorghum	NE	Celaya, GJ	$7,772	$430	$83.81	$2.13	4
	KS	Queretaro, QA	$8,108	$148	$84.35	$2.14	1
	NE	Salinas Victoria, NL	$6,713	$119	$69.80	$1.77	1
	NE	Torreon, CU	$7,157	$302	$76.22	$1.93	3

[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.

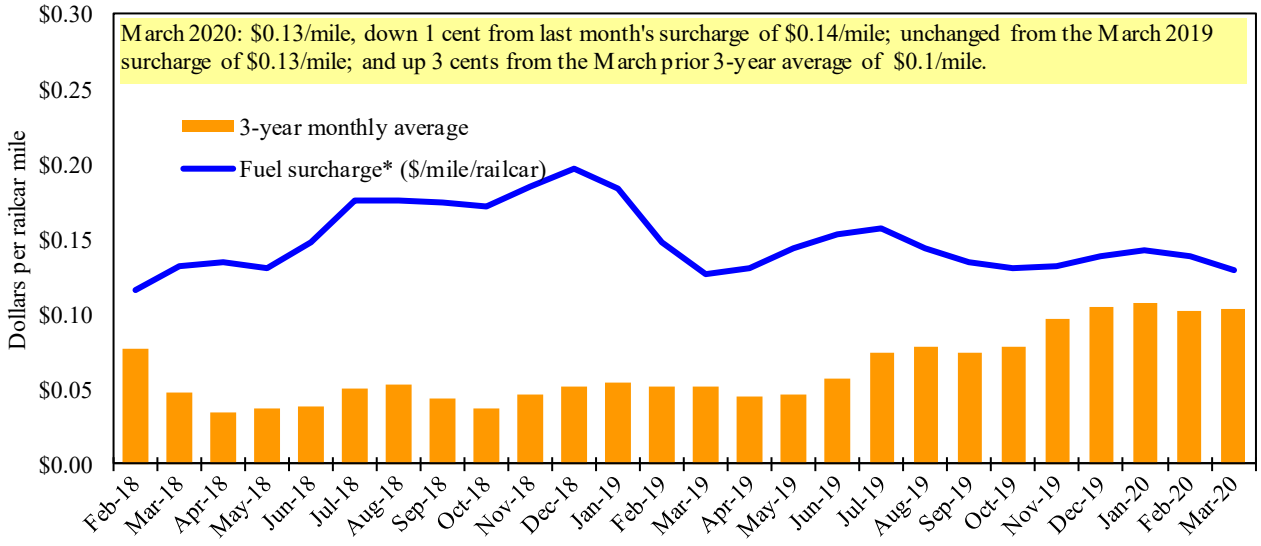
[3]Approximate load per car = 97.87 metric tons: Corn & Sorghum 56 lbs/bu, Wheat & Soybeans 60 lbs/bu.

[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.

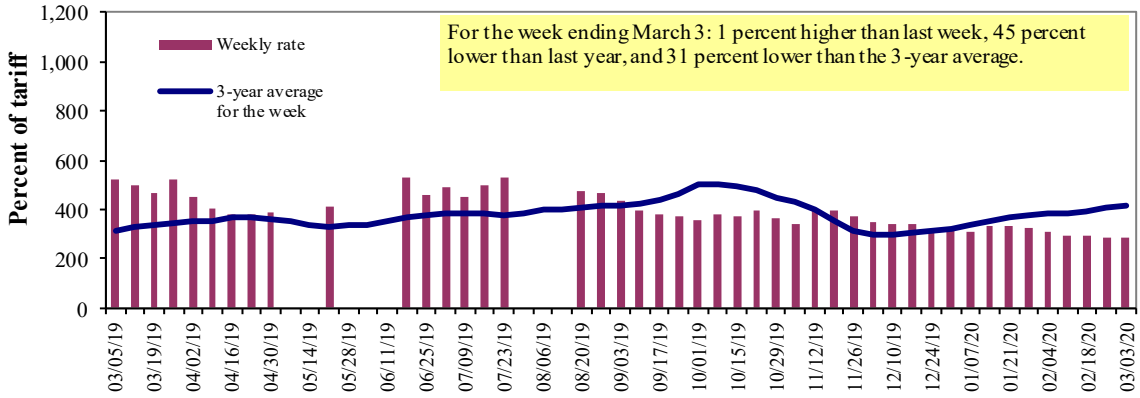
**CSX strike price changed from $2.00/gal. to $3.75/gal. starting January 1, 2015.

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]	3/3/2020	-	-	288	185	198	198	179
	2/25/2020	-	-	284	186	200	200	180
$/ton	3/3/2020	-	-	13.36	7.38	9.29	8.00	5.62
	2/25/2020	-	-	13.18	7.42	9.38	8.08	5.65
Current week % change from the same week:								
	Last year	-	-	-45	-54	-	-	-52
	3-year avg.[2]	-	-	-31	-42	-44	-45	-36
Rate[1]	April	366	326	301	199	215	215	190
	June	362	326	306	205	217	217	192

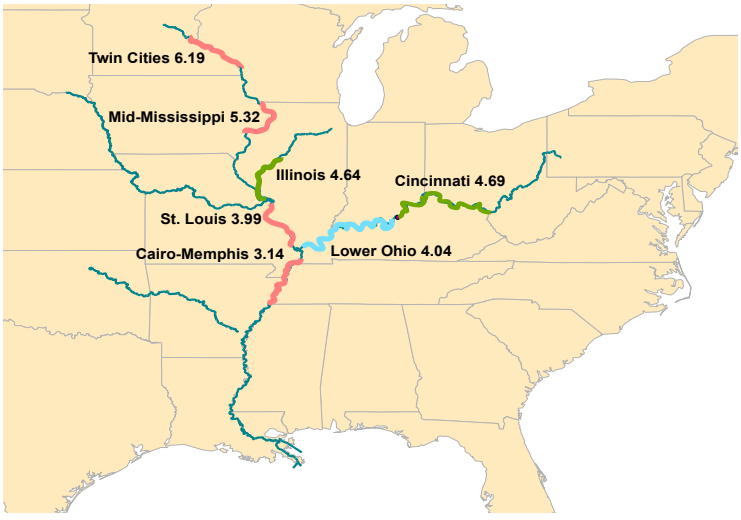
[1]Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); [2]4-week moving average; ton = 2,000 pounds; "-" not available due to closure.

Source: USDA, Agricultural Marketing Service.

Figure 9
Benchmark tariff rates

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

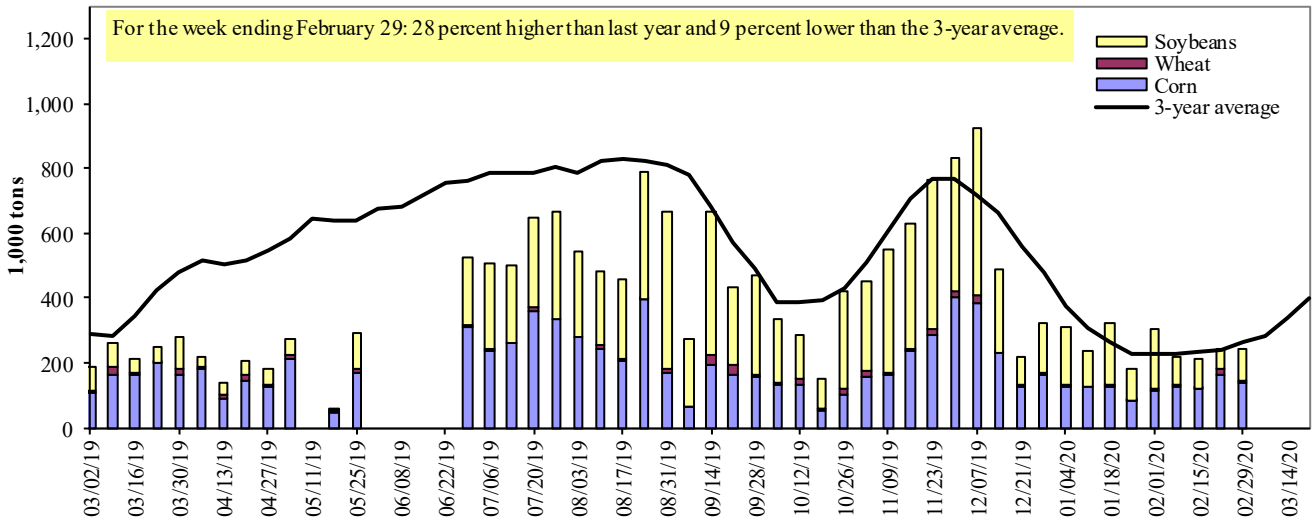
Select applicable index from market quotes are included in tables on this page. The 1976 benchmark rates per ton are provided in map.



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 02/29/2020	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)	137	10	94	6	247
Granite City, IL (L27)	137	10	100	6	253
Illinois River (La Grange)	87	5	63	6	160
Ohio River (Olmsted)	42	4	52	0	98
Arkansas River (L1)	0	37	21	0	58
Weekly total - 2020	179	50	173	6	409
Weekly total - 2019	107	32	99	2	239
2020 YTD[1]	2,033	268	2,137	12	4,450
2019 YTD[1]	1,646	341	1,749	10	3,745
2020 as % of 2019 YTD	124	79	122	113	119
Last 4 weeks as % of 2019[2]	165	103	99	188	128
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.

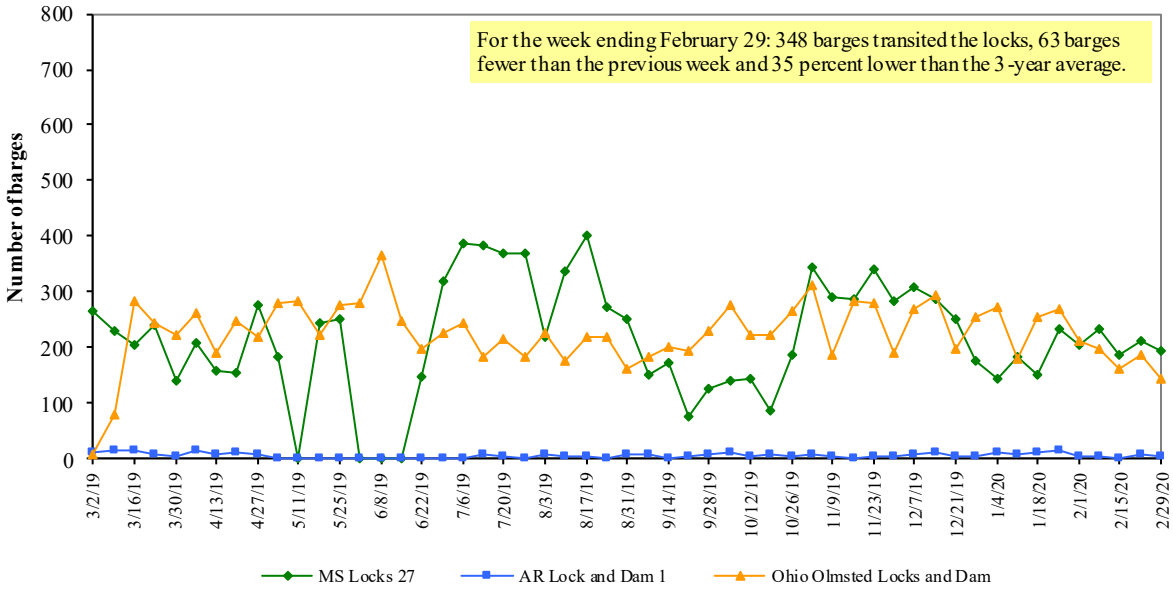
[2] As a percent of same period in 2019.

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

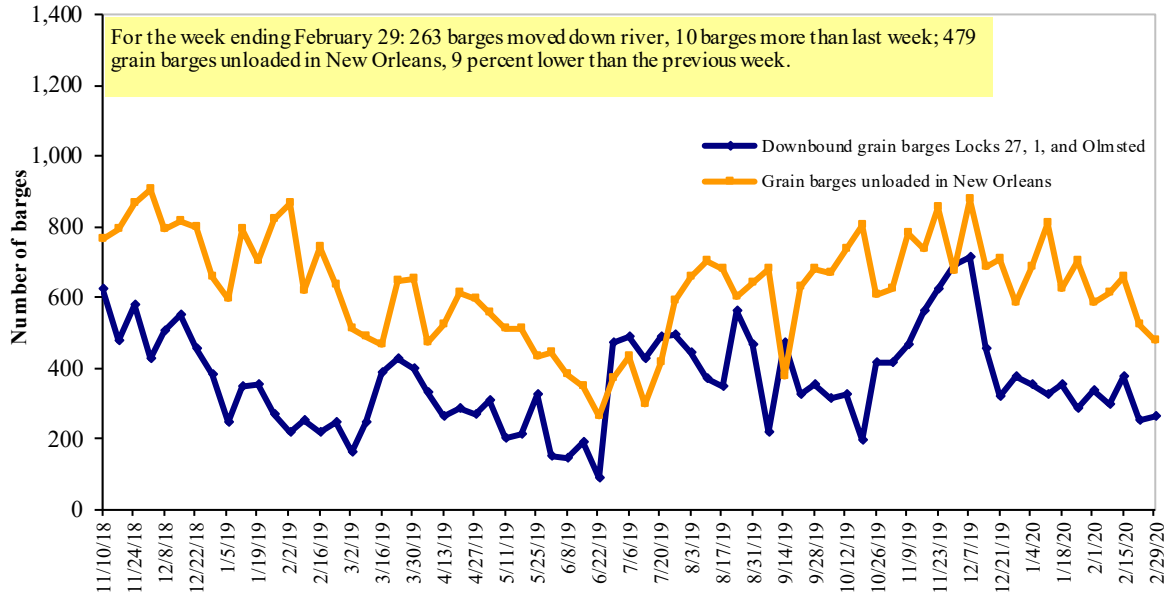
Upbound empty barges transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam



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 3/2/2020 (U.S. $/gallon)

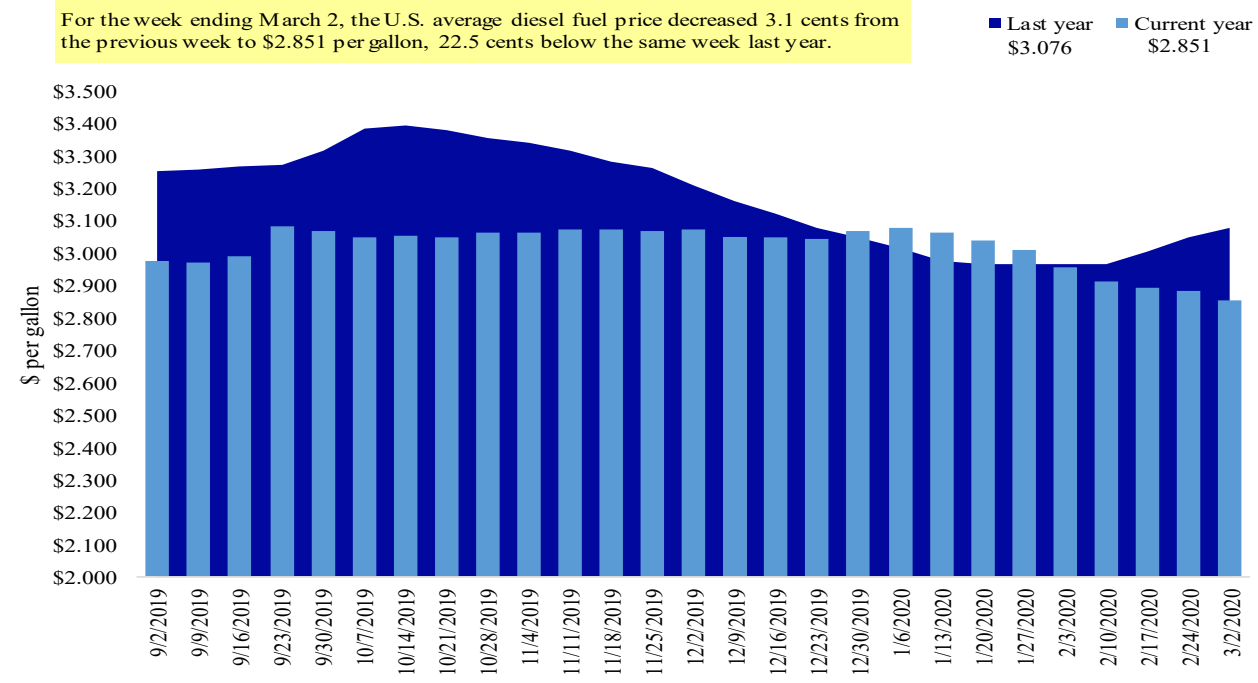
Region	Location	Price	Change from Week ago	Change from Year ago
I	East Coast	2.898	-0.033	-0.221
	New England	3.023	-0.038	-0.154
	Central Atlantic	3.081	-0.036	-0.220
	Lower Atlantic	2.748	-0.031	-0.237
II	Midwest	2.725	-0.031	-0.289
III	Gulf Coast	2.627	-0.027	-0.243
IV	Rocky Mountain	2.826	-0.023	-0.113
V	West Coast	3.424	-0.035	-0.079
	West Coast less California	3.054	-0.018	-0.101
	California	3.728	-0.050	-0.051
Total	United States	2.851	-0.031	-0.225

[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]									
2/20/2020	1,860	364	1,537	1,110	148	5,019	12,377	4,783	22,179
This week year ago	2,535	959	1,440	1,254	119	6,307	14,031	13,384	33,722
Cumulative exports-marketing year[2]									
2019/20 YTD	6,587	1,874	5,051	3,426	680	17,618	13,496	28,938	60,052
2018/19 YTD	4,984	1,937	4,762	3,612	358	15,653	25,525	25,499	66,677
YTD 2019/20 as % of 2018/19	132	97	106	95	190	113	53	113	90
Last 4 wks. as % of same period 2018/19*	73	41	107	93	144	81	86	39	66
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.

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 2/20/2020	Total commitments[2] 2019/20 current MY	2018/19 last MY*	% change current MY from last MY	Exports[3] 3-yr. avg. 2016-18
		- 1,000 mt -		
Mexico	10,464	12,974	(19)	14,659
Japan	5,127	8,097	(37)	11,955
Korea	537	3,023	(82)	4,977
Colombia	2,511	2,980	(16)	4,692
Peru	65	1,870	(97)	2,808
Top 5 importers	**18,703**	**28,943**	**(35)**	**39,091**
Total U.S. corn export sales	**25,873**	**39,556**	**(35)**	**54,024**
% of projected exports	59%	75%		
Change from prior week[2]	**865**	**1,240**		
Top 5 importers' share of U.S. corn export sales	72%	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.

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 2/20/2020	Total commitments[2] 2019/20 current MY	2018/19 last MY*	% change current MY from last MY	Exports[3] 3-yr. avg. 2016-18
		- 1,000 mt -		- 1,000 mt -
China	12,222	9,222	33	25,733
Mexico	3,320	4,473	(26)	4,271
Indonesia	1,190	1,505	(21)	2,386
Japan	1,706	1,812	(6)	2,243
Egypt	1,988	1,942	2	1,983
Top 5 importers	**20,426**	**18,954**	**8**	**36,616**
Total U.S. soybean export sales	**33,720**	**38,883**	**(13)**	**53,746**
% of projected exports	68%	82%		
change from prior week[2]	**339**	**2,120**		
Top 5 importers' share of U.S. soybean export sales	61%	49%		**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.

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 2/20/2020	Total commitments[2] 2019/20 current MY	2018/19 last MY*	% change current MY from last MY	Exports[3] 3-yr. avg. 2016-18
		- 1,000 mt -		- 1,000 mt -
Philippines	2,912	2,792	4	3,047
Mexico	3,193	2,556	25	3,034
Japan	2,361	2,485	(5)	2,695
Nigeria	1,324	1,308	1	1,564
Indonesia	894	1,118	(20)	1,381
Korea	1,189	1,351	(12)	1,355
Taiwan	1,061	987	8	1,164
Egypt	101	638	(84)	821
Thailand	850	740	15	747
Iraq	262	416	(37)	574
Top 10 importers	**14,148**	**14,392**	(2)	**16,382**
Total U.S. wheat export sales	**22,637**	**21,960**	**3**	**24,388**
% of projected exports	83%	86%		
change from prior week[2]	**382**	**476**		
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.

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 02/27/20	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	447	356	126	2,794	2,245	124	112	142	13,961
Corn	232	101	230	602	1,781	34	83	55	7,047
Soybeans	66	145	46	1,821	2,329	78	46	54	11,969
Total	**745**	**601**	**124**	**5,217**	**6,355**	**82**	**79**	**83**	**32,977**
Mississippi Gulf									
Wheat	118	25	464	655	852	77	120	94	4,448
Corn	507	606	84	4,064	4,386	93	106	83	20,763
Soybeans	384	310	124	5,745	5,638	102	63	66	31,398
Total	**1,009**	**942**	**107**	**10,464**	**10,876**	**96**	**84**	**76**	**56,609**
Texas Gulf									
Wheat	71	17	409	603	929	65	32	39	6,009
Corn	0	24	0	98	63	156	82	45	640
Soybeans	0	0	n/a	6	0	n/a	n/a	n/a	2
Total	**71**	**42**	**170**	**708**	**992**	**71**	**36**	**40**	**6,650**
Interior									
Wheat	53	61	87	407	267	152	244	177	1,987
Corn	141	166	85	1,196	1,134	105	113	116	7,857
Soybeans	236	150	157	1,415	1,084	131	130	148	7,043
Total	**430**	**378**	**114**	**3,018**	**2,485**	**121**	**131**	**137**	**16,887**
Great Lakes									
Wheat	0	0	n/a	1	23	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**	**39**	**2**	**0**	**0**	**1,844**
Atlantic									
Wheat	0	0	n/a	0	1	n/a	0	0	37
Corn	0	0	n/a	0	28	0	0	0	99
Soybeans	19	22	90	214	243	88	156	48	1,353
Total	**19**	**22**	**90**	**214**	**271**	**79**	**137**	**48**	**1,489**
U.S. total from ports*									
Wheat	688	460	150	4,459	4,316	103	98	109	27,781
Corn	880	897	98	5,961	7,392	81	102	80	36,417
Soybeans	706	627	112	9,202	9,311	99	67	71	52,258
Total	**2,275**	**1,984**	**115**	**19,622**	**21,019**	**93**	**85**	**82**	**116,457**

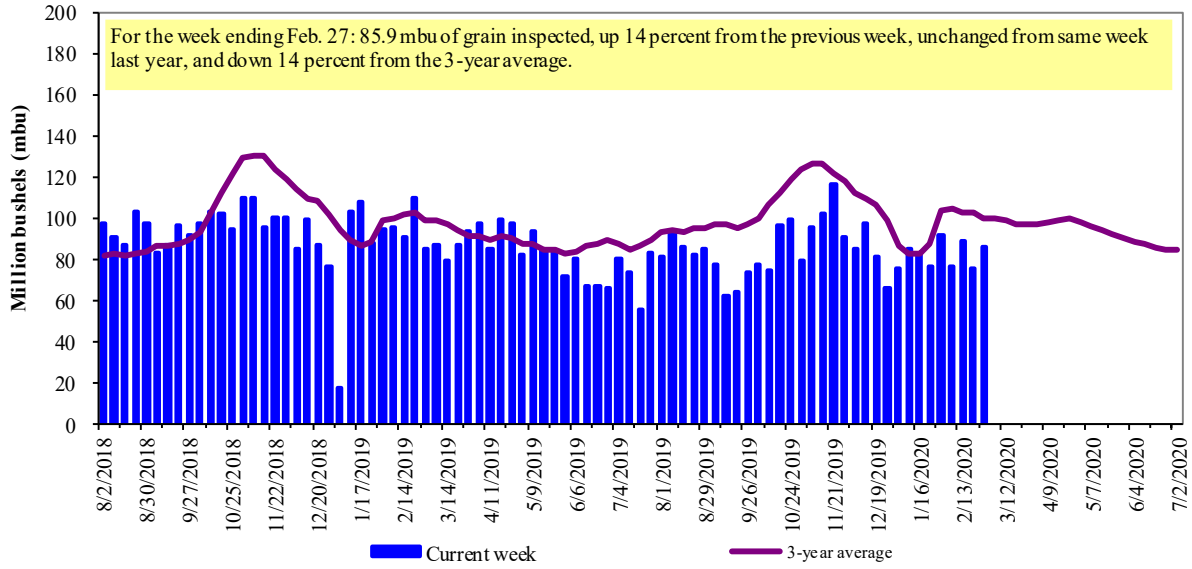
*Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

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)

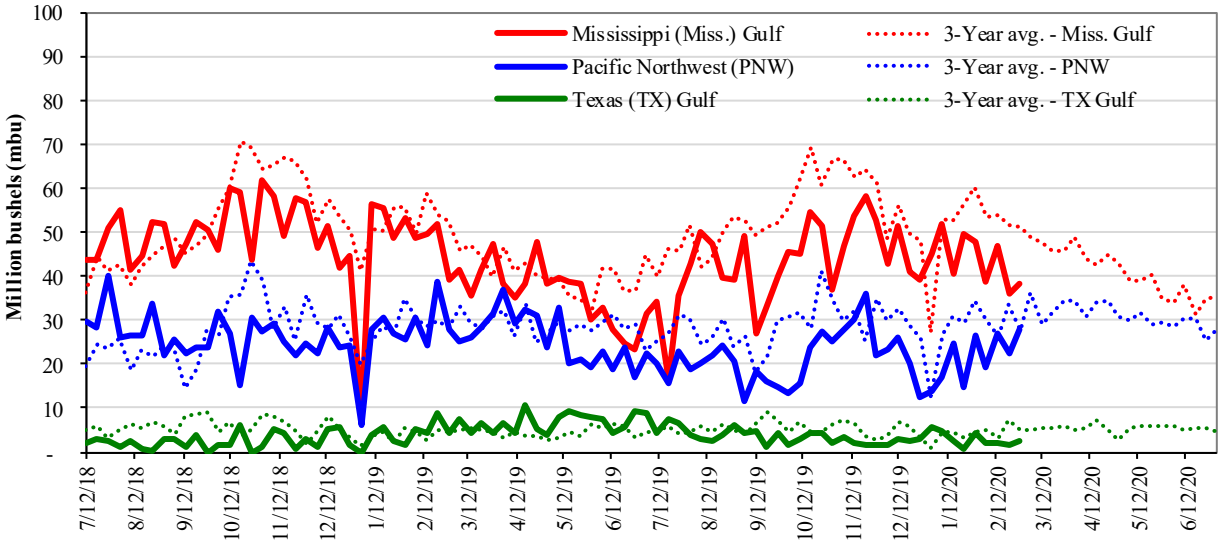


Note: 3-year average consists of 4-week running average.

Source: USDA, Federal Grain Inspection Service.

Figure 15

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



Week ending 02/27/20 inspections (mbu):	
MS Gulf:	38.4
PNW:	28.0
TX Gulf:	2.6

Percent change from:	MS Gulf	TX Gulf	U.S. Gulf	PNW
Last wk:	up 6	up 63	up 9	up 25
Last Year (same wk):	down 2	down 42	down 6	unchanged
3-yr avg. (4-wk. mov. Avg):	down 27	down 49	down 29	down 5

Source: USDA, Federal Grain Inspection Service.

Table 17

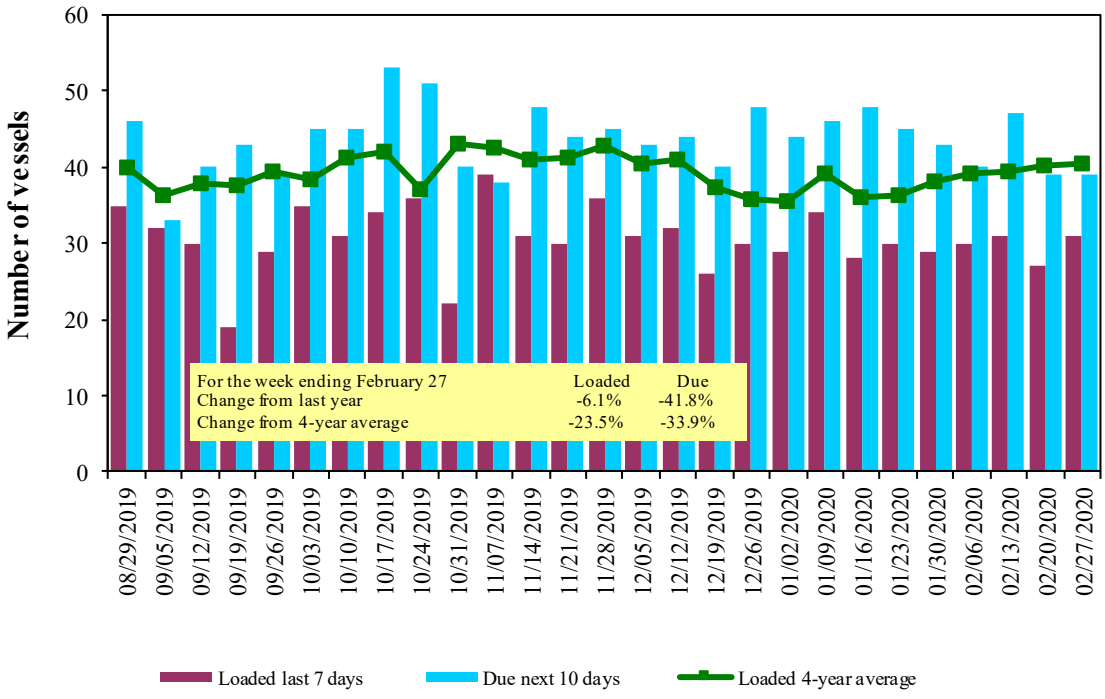
Weekly port region grain ocean vessel activity (number of vessels)

	Gulf			Pacific Northwest
Date	In port	Loaded 7-days	Due next 10-days	In port
2/27/2020	30	31	39	12
2/20/2020	33	27	39	14
2019 range	(26…61)	(18...44)	(33...69)	(8...33)
2019 average	40	31	49	17

Source: USDA, Agricultural Marketing Service.

Figure 16

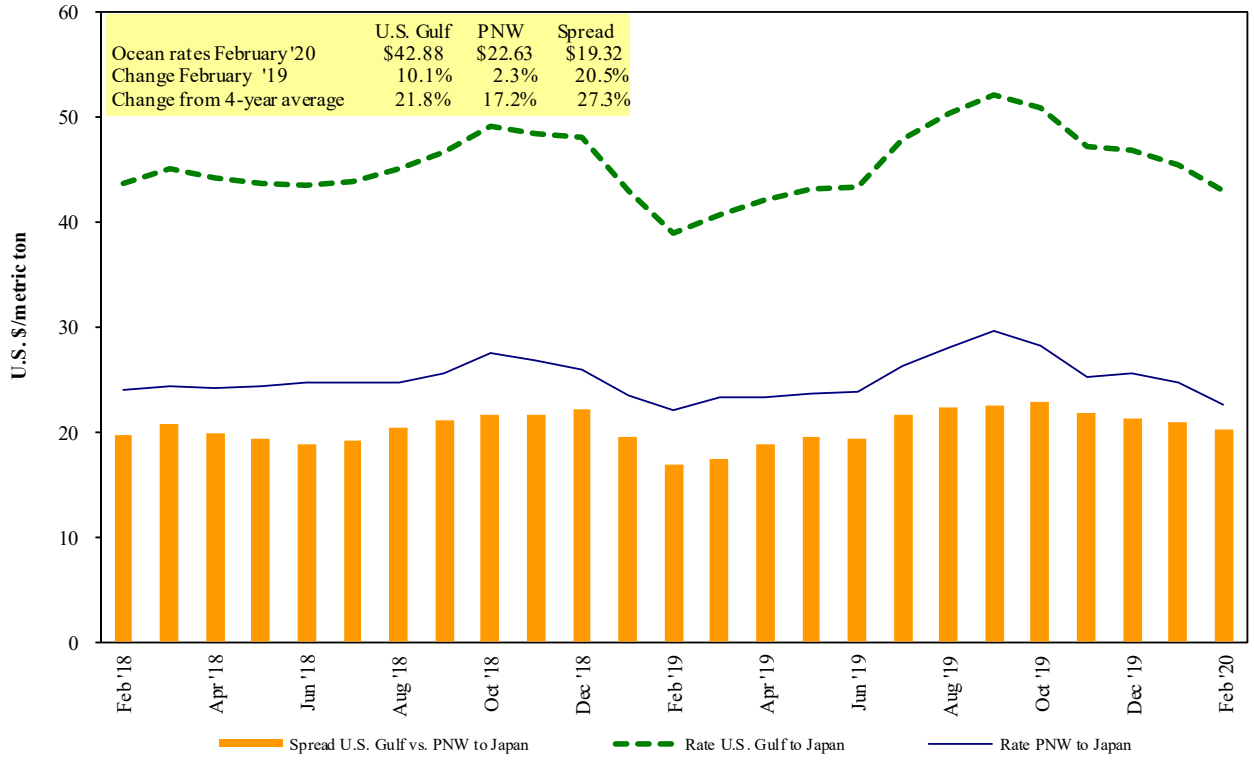
U.S. Gulf[1] vessel loading activity



[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 02/29/2020

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	Taiwan	Wheat	Apr 27/May 11	50,700	29.40
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

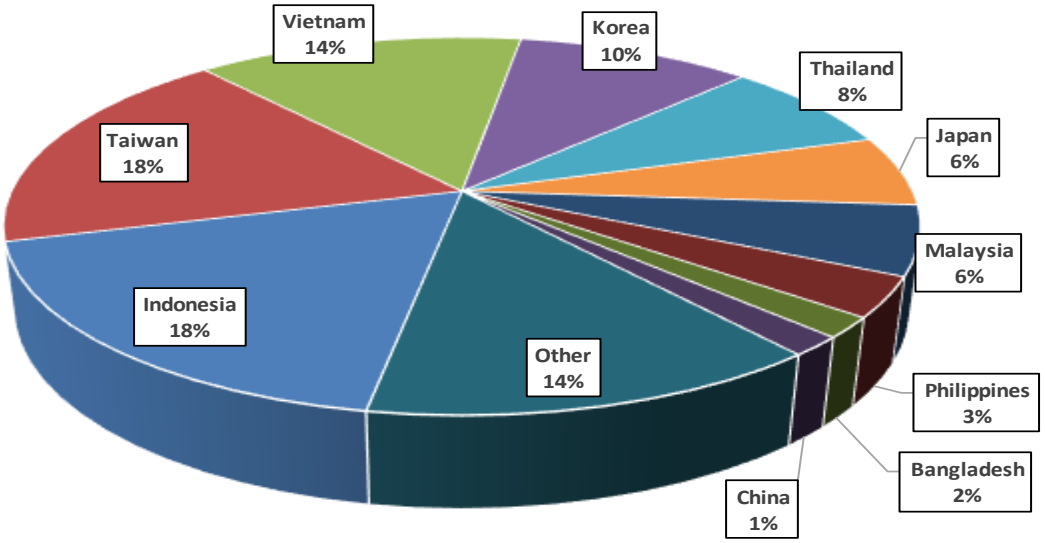
*50 percent of food aid from the United States is required to be shipped on U.S.-flag vessels.

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.

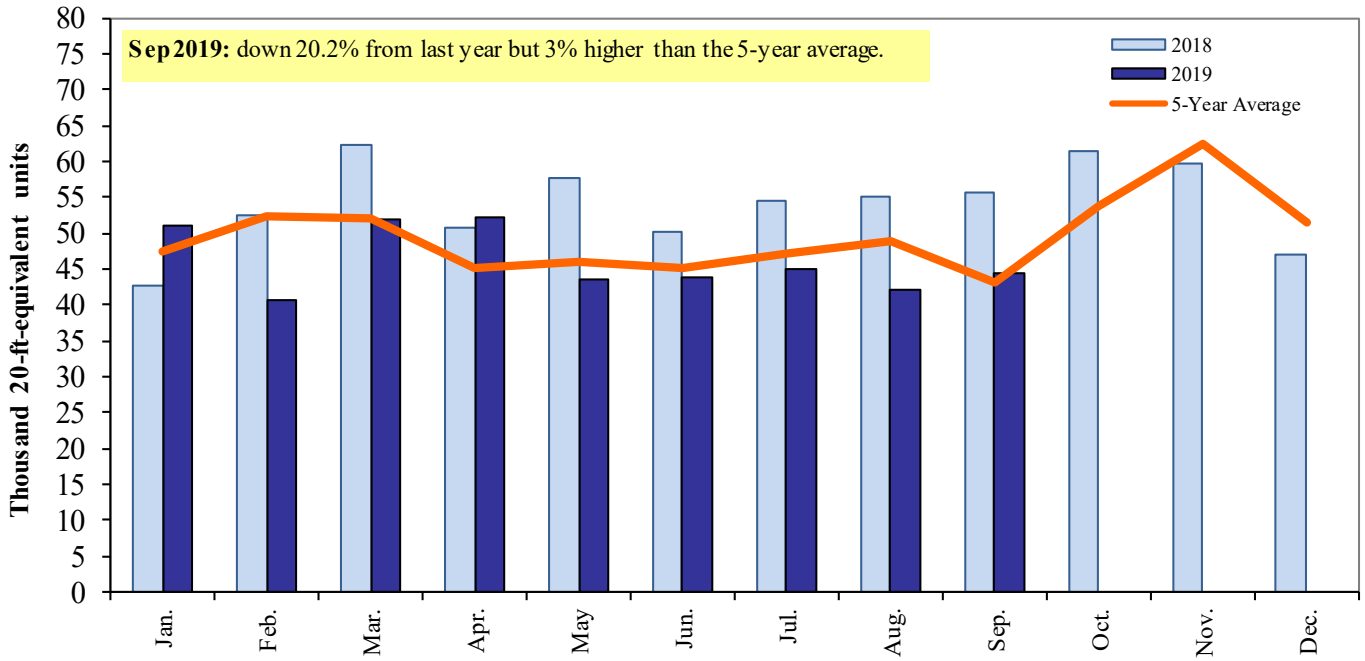
Figure 18
Top 10 destination markets for U.S. containerized grain exports, Jan-Sep 2019



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.

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