USDA United States Department of Agriculture

Grain Transportation Report

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

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March 7, 2019

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WEEKLY HIGHLIGHTS

Total Grain Inspections Recede but Corn Up

For the week ending February 28, **total inspections of grain** (corn, wheat, and soybeans) for export from all major U.S. export regions reached 2.20 million metric tons (mmt). Inspections were down 25 percent from the previous week, down 10 percent from last year and 16 percent below the 3-year average. Grain inspections included much lower wheat and soybean inspections for the week. Despite the decrease in total inspections of grain, corn inspections increased 14 percent due primarily to a rebound in shipments to Asia. Inspections of grain in the Pacific Northwest (PNW) dropped 31 percent from the previous week, while Mississippi Gulf grain inspections decreased 26 percent.

Highwater Continues to Disrupt Barge Navigation

Consistent highwater levels on most of the inland waterways has caused disruptions throughout the system. For the week ending March 2, Ohio River Olmsted Locks and Dams (L&D) did not report any down-bound grain traffic. While Olmsted has been operational during the highwater events, grain traffic expected to arrive at Olmsted has been stopped by the flood-induced closure at nearby Smithland L&D. Smithland was closed on February 20 due to highwater causing a backup of traffic. As of March 7, there were 65 tows of barges above Smithland waiting to transit the lock. Elsewhere, there are navigation restrictions on the lower Mississippi River that include tow size restrictions and daylight only transit through Memphis, Vicksburg, and Baton Rouge. As of March 3, the year-to-date number of grain barges unloading at the Gulf were 6,282, which is 10 percent lower than the 3-year average.

Rail Service Challenges and Higher Demand from Shippers Boost Secondary Market

Prices in the secondary railcar market for shuttle freight have continued to increase, rising well above-average in recent weeks (**GTR Figure 4**). Average bids/offers for delivery of (shuttle) railcars in March rose from about $300 per car, as of February 7, to $2,000 per car, as of February 28. A review of grain exports and rail service data suggest two factors could be at play: (1) recent higher demand for grain rail transportation, and (2) rail service delays due to weather problems. Grain inspected for export in the Pacific Northwest and Texas Gulf, which are largely rail-supplied, was 143 million bushels in February, up 7 percent from the prior 3-year average (**GTR Figure 15**). At the same time, multiple railroads have reported severe weather impacting their operations over the past month. BNSF Railway and Union Pacific Railroad issued customer notices on March 1 and March 6, respectively, noting harsh winter weather conditions affecting rail operations. Average grain train speeds, across all 7 Class I railroads, were 3 percent lower in February compared to January. At the same time, average terminal dwell times were up 2 percent, while average grain origin dwell times were up 38 percent.

Snapshots by Sector

Rail

U.S. Class I railroads originated 21,695 **grain carloads** for the week ending February 23—up 2 percent from the previous week, 8 percent from last year, and 2 percent from the 3-year average.

Average March shuttle **secondary railcar** bids/offers (per car) were $2,061 above tariff for the week ending February 28—up $749 from last week, and $1,344 from last year. Average non-shuttle secondary railcar bids/offers were $275 above tariff, up $25 from last week. There were no non-shuttle bids/offers this week last year.

Barge

For the week ending March 2, **barge grain movements** totaled 239,000 tons—39 percent less than the previous week and down 38 percent from the same period last year.

For the week ending March 2, 161 grain barges **moved down river**, which is 83 barges less than the previous week. There were 513 grain barges **unloaded in New Orleans**, 19 percent lower than the previous week.

Ocean

For the week ending February 28, 33 **ocean-going grain vessels** were loaded in the Gulf, 20 percent less than the same period last year. Sixty-seven vessels are expected to be loaded within the next 10 days, 26 percent more than the same period last year.

For the week ending February 28, the ocean freight rate for shipping bulk grain from the Gulf to Japan was $39.50 per metric ton, 1 percent more than the previous week. The cost of shipping from the PNW to Japan was $22.75 per metric ton, 2 percent more than the previous week.

Fuel

For the week ending March 4, the **U.S. average diesel fuel price** increased 2.8 cents from the previous week, to $3.076 per gallon. This is 8.4 cents above the same week last year.

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Feature Article/Calendar

Fourth Quarter 2018 Wheat Transportation Costs Increase

During the fourth quarter of 2018, the costs for shipping wheat to Japan increased from quarter to quarter and from year to year. The wheat shipped to Japan originated from Kansas and North Dakota and was shipped through the Pacific Northwest (PNW) and the U.S. Gulf. Quarter-to-quarter wheat transportation costs for Kansas increased in each region. The increase was mainly due to higher ocean freight rates, while year-to-year shipping costs increased due to both higher rail and ocean freight rates (*Tables 1 and 2*). Likewise, due to higher rail and ocean freight costs, transportation costs for wheat from North Dakota increased from quarter to quarter and from year to year.

Ocean rates increased because coal trade increased and the shipment of minor bulk products (steel, iron ore, wood chips, etc.) improved (*Grain Transportation Report* (*GTR*), *February 14, 2019)*. Trucking rates for transporting wheat were up significantly from quarter to quarter, due in part to increasing demand for wheat during the quarter. Fourth quarter inspections of wheat for export increased 25 percent from last year and 7 percent from the third quarter 2018 (*GTR*), *February 7, 2019*).

Fourth quarter transportation costs for shipping wheat through the PNW to Japan totaled $96 per metric ton (mt) from Kansas and $101 per mt from North Dakota. Respectively, this is an increase of 3 and 4 percent from the third quarter. The increase is due primarily to increased ocean rates (*Table 1).* The transportation costs for shipping wheat from year to year through the PNW increased 3 percent for Kansas and 1 percent for North Dakota, due mainly to higher rail and ocean rates. The cost of shipping from Kansas and North Dakota to Japan through the Gulf increased 5 percent from quarter to quarter (*Table 2*).

Year-to-year Gulf transportation costs for shipping wheat were up 4 percent from Kansas and 3 percent from North Dakota. The increases are also due to higher rail and ocean freight rates. Fourth quarter wheat transportation costs represented 34 to 39 percent of the landed cost (*Tables 1 and 2).*

Table 1: Quarterly rate comparisons for shipping Kansas & North Dakota wheat to Japan through the PNW

	Kansas					North Dakota				
Mode	2017 4th qtr	2018 3rd qtr	2018 4th qtr	Year-to-Year change	Quarterly change	2017 4th qtr	2018 3rd qtr	2018 4th qtr	Year-to-Year change	Quarterly change
			$/metric ton	%	%			$/metric ton	%	%
Truck	14.39	10.54	12.10	-15.91	14.80	14.39	10.54	12.10	-15.91	14.80
Rail[1]	59.73	63.41	62.63	4.86	-1.23	55.72	56.55	56.96	2.23	0.73
Ocean vessel	24.56	24.97	26.69	8.67	6.89	24.56	24.97	26.69	8.67	6.89
Transportation Costs	98.68	98.92	101.42	2.78	2.53	94.67	92.06	95.75	1.14	4.01
Farm Value[2]	128.97	184.94	175.14	35.80	-5.30	209.32	189.48	187.39	-10.48	-1.10
Total Landed Cost	227.65	283.86	276.56	21.48	-2.57	303.99	281.54	283.14	-6.86	0.57
Transport % of landed cost	43.35	34.85	36.67			31.14	32.70	33.82		

Table 2: Quarterly rate comparisons for shipping Kansas & North Dakota wheat to Japan through the Gulf

	Kansas					North Dakota				
Mode	2017 4th qtr	2018 3rd qtr	2018 4th qtr	Year-to-Year change	Quarterly change	2017 4th qtr	2018 3rd qtr	2018 4th qtr	Year-to-Year change	Quarterly change
			$/metric ton	%	%			$/metric ton	%	%
Truck	14.39	10.54	12.10	-15.91	14.80	14.39	10.54	12.10	-15.91	14.80
Rail[1]	41.42	42.66	42.66	2.99	0.00	58.90	59.73	60.14	2.11	0.69
Ocean vessel	43.56	45.23	48.46	11.25	7.14	43.56	45.23	48.46	11.25	7.14
Transportation Costs	99.37	98.43	103.22	3.87	4.87	116.85	115.50	120.70	3.29	4.50
Farm Value[2]	128.97	184.94	175.14	35.80	-5.30	209.32	189.48	187.39	-10.48	-1.10
Total Landed Cost	228.34	283.37	278.36	21.91	-1.77	326.17	304.98	308.09	-5.54	1.02
Transport % of landed cost	43.52	34.74	37.08			35.82	37.87	39.18		

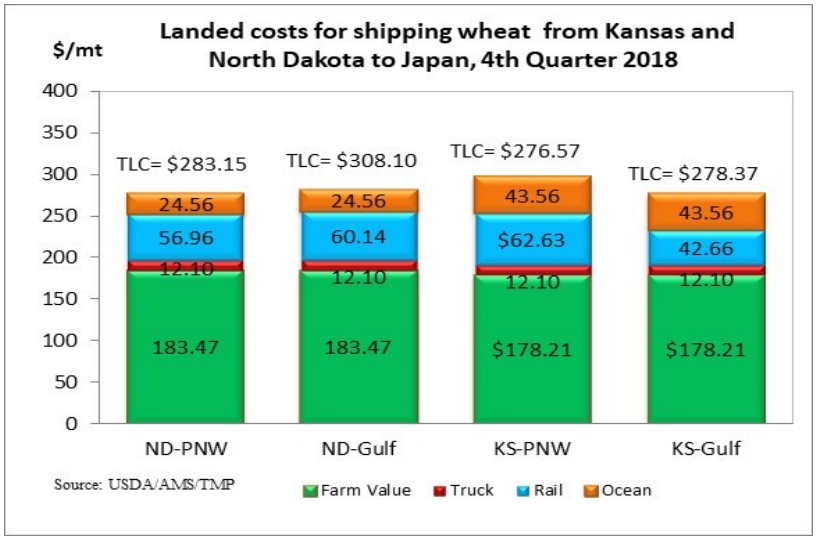
Source: USDA/AMS/TMP

[1] Rail tariff rates include fuel surcharges and revisions for heavy axle railcars and shuttle trains. The rail tariff rate is a base price of rail freight rates, but during periods of high rail demand or car shortages, high auction and secondary market rates could exceed the base rail tariffs per car

[2] Source: USDA/NASS, wheat prices for North Dakota (mainly HRS) and Kansas (mainly HRW)

The total landed cost (TLC) for shipping wheat to Japan ranged from $277 to $309 per mt (see figure). Quarter-to-quarter TLCs for shipping wheat from Kansas and North Dakota to Japan were down slightly for each route. Year-to-year landed costs increased 22 percent for Kansas, due mainly to higher ocean rates

and farm values. Landed costs for shipping wheat from North Dakota dropped 7 percent in the PNW and 6 percent in the Gulf from year to year.



Fourth quarter ocean rates for shipping wheat from the PNW to Japan increased 7 percent from the third quarter and 9 percent from the fourth quarter 2017 (*Table 1*). Ocean rates for wheat shipped from the Gulf to Japan increased 7 percent quarter to quarter and 11 percent from year to year.

During the fourth quarter 2018, rail rates for shipping wheat from Kansas to the PNW decreased 1 percent from quarter to quarter, while North Dakota rail rates increased 1 percent. Year-to-year, rail rates to the PNW increased 5 percent from Kansas and 2 percent from North Dakota. Quarter-to-quarter rail rates to the Gulf for wheat moving from Kansas remained unchanged, while North Dakota rail rates increased 1 percent. From year-to-year, Gulf rail rates increased 3 percent from Kansas and 2 percent from North Dakota.

Fourth quarter trucking rates for moving wheat from each State to a rail-served grain elevator increased 15 percent from the third quarter, due to higher demand for wheat. However, year-to-year trucking rates decreased 16 percent from the same time last year, due partly to lower diesel prices.

Wheat Market Outlook

Fourth quarter exports of wheat destined to Japan reached .649 million metric tons (mmt), according to the USDA's Federal Grain Inspection Service (FGIS). Fourth quarter wheat exports to Japan were 20 percent above 2017, accounting for 11 percent of total U.S. fourth quarter wheat exports. For calendar year 2018, exports of U.S. wheat to Japan totaled 2.8 mmt. This is a 27 percent increase from the previous year, accounting for 13 percent of total U.S. wheat exports in 2018.

In calendar year 2018, total U.S. wheat exports reached 21.8 mmt. This is an 18 percent decrease from 2017. According to FGIS, the decrease was due to lower shipments to Asia, Latin America, and Africa. According to USDA's February *World Agricultural Supply and Demand Estimates,* wheat exports for the 2018/19 marketing year are projected to increase 11 percent from last year. Year-to-date cumulative export sales (shipped) of all wheat in 2018/19 are down 10 percent from the previous year (***GTR Table 12***).

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Grain Transportation Indicators

Table 1

Grain Transport Cost Indicators[1]

	Truck	Rail		Barge	Ocean	
For the week ending		Unit Train	Shuttle		Gulf	Pacific
03/06/19	206	295	308	292	177	161
02/27/19	205	295	276	333	176	158

[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); and ocean = routes to Japan ($/metric ton)

Source: Transportation & Marketing Program/AMS/USDA

Table 2

Market Update: U.S. Origins to Export Position Price Spreads ($/bushel)

Commodity	Origin--Destination	3/1/2019	2/22/2019
Corn	IL--Gulf	-0.79	-0.87
Corn	NE--Gulf	-0.86	-0.96
Soybean	IA--Gulf	-1.24	-1.25
HRW	KS--Gulf	-1.73	-1.57
HRS	ND--Portland	-1.93	-1.85

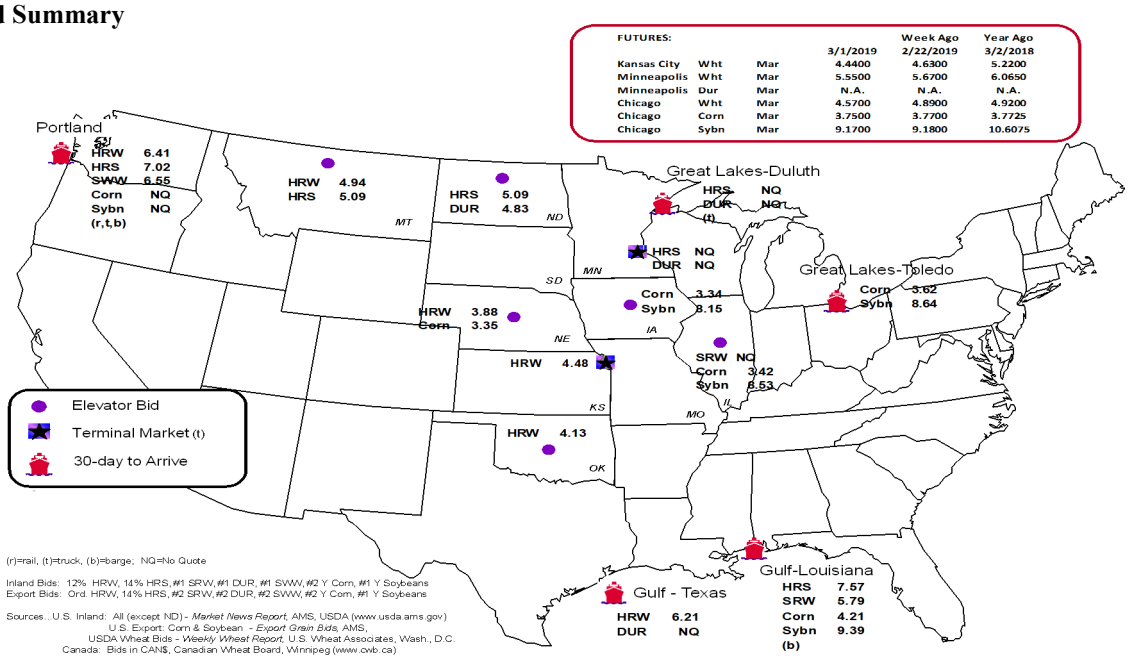
Note: nq = no quote; n/a = not available

Source: Transportation & Marketing Program/AMS/USDA

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]
2/27/2019[p]	756	1,657	4,431	244	7,088	2/23/2019	2,063
2/20/2019[r]	942	1,632	5,901	222	8,697	2/16/2019	2,011
2019 YTD[r]	5,210	10,222	46,435	3,605	65,472	2019 YTD	19,797
2018 YTD[r]	4,430	13,681	54,408	2,384	74,903	2018 YTD	15,663
2019 YTD as % of 2018 YTD	118	75	85	151	87	% change YTD	126
Last 4 weeks as % of 2018[2]	221	106	85	101	96	Last 4wks % 2018	131
Last 4 weeks as % of 4-year avg.[2]	134	101	83	55	88	Last 4wks % 4 yr	125
Total 2018	22,118	46,532	310,449	21,432	400,531	Total 2018	129,116
Total 2017	28,796	75,543	287,267	21,312	412,918	Total 2017	119,661

[1] Data is incomplete as it is voluntarily provided

[2] Compared with same 4-weeks in 2018 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 KCSM and Grupo Mexico.

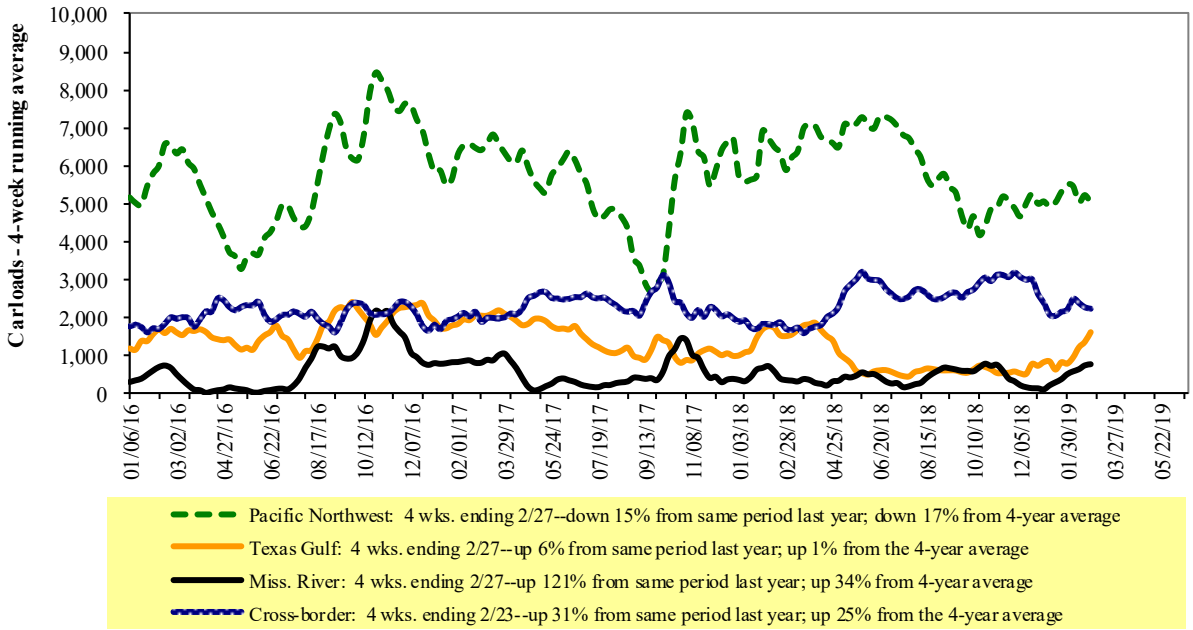
YTD = year-to-date; p = preliminary data; r = revised data; n/a = not available

Source: Transportation & Marketing Program/AMS/USDA

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: Transportation & Marketing Program/AMS/USDA

Table 4

Class I Rail Carrier Grain Car Bulletin (grain carloads originated)

For the week ending:	East		West			U.S. total	Canada	
2/23/2019	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	2,141	2,686	10,619	1,190	5,059	21,695	4,211	3,496
This week last year	1,574	2,097	10,969	941	4,478	20,059	3,195	2,963
2019 YTD	15,718	21,253	87,746	8,617	41,427	174,761	31,306	31,136
2018 YTD	14,321	18,890	91,693	7,889	39,964	172,757	26,394	33,089
2019 YTD as % of 2018 YTD	110	113	96	109	104	101	119	94
Last 4 weeks as % of 2018*	121	111	91	116	105	100	131	84
Last 4 weeks as % of 3-yr avg.**	106	97	95	121	91	96	118	82
Total 2018	98,978	133,065	635,458	48,638	267,713	1,183,852	211,909	244,697

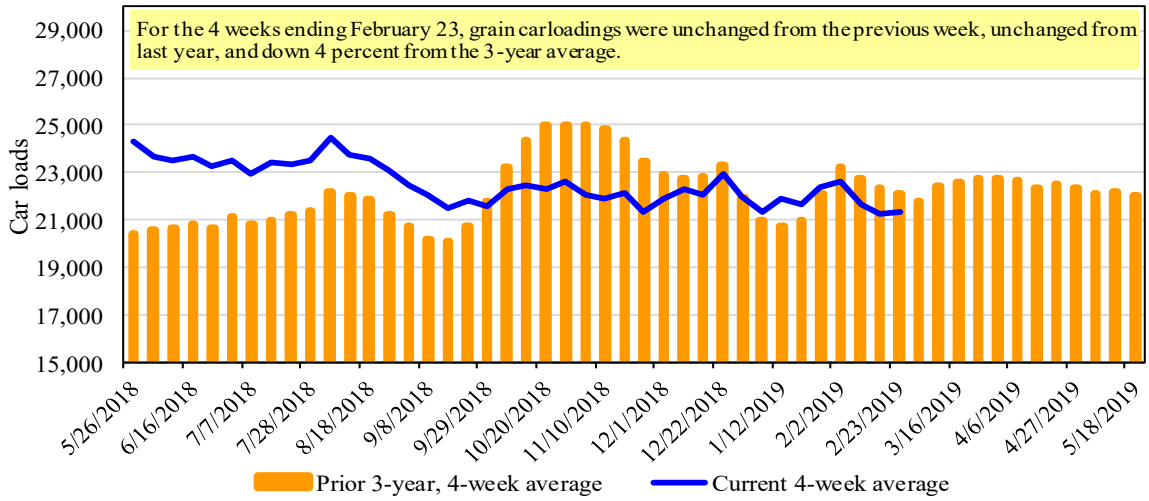
*The past 4 weeks of this year as a percent of the same 4 weeks last year.

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

Source: Association of American Railroads (www.aar.org)

Figure 3

Total Weekly U.S. Class I Railroad Grain Car Loadings



Source: Association of American Railroads

Table 5

Railcar Auction Offerings[1] ($/car)[2]

For the week ending:		Delivery period							
2/28/2019		Mar-19	Mar-18	Apr-19	Apr-18	May-19	May-18	Jun-19	Jun-18
BNSF[3]	COT grain units	n/a	0	n/a	0	n/a	no bids	n/a	no bids
	COT grain single-car[5]	n/a	58	n/a	0	n/a	0	n/a	0
UP[4]	GCAS/Region 1	no offer	no offer	no offer	no bids	no bid	no bids	n/a	n/a
	GCAS/Region 2	no offer	no offer	130	51	no bid	no bids	n/a	n/a

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

[2]Average premium/discount to tariff, last auction

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

[4]UP - GCAS = Grain Car Allocation System

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

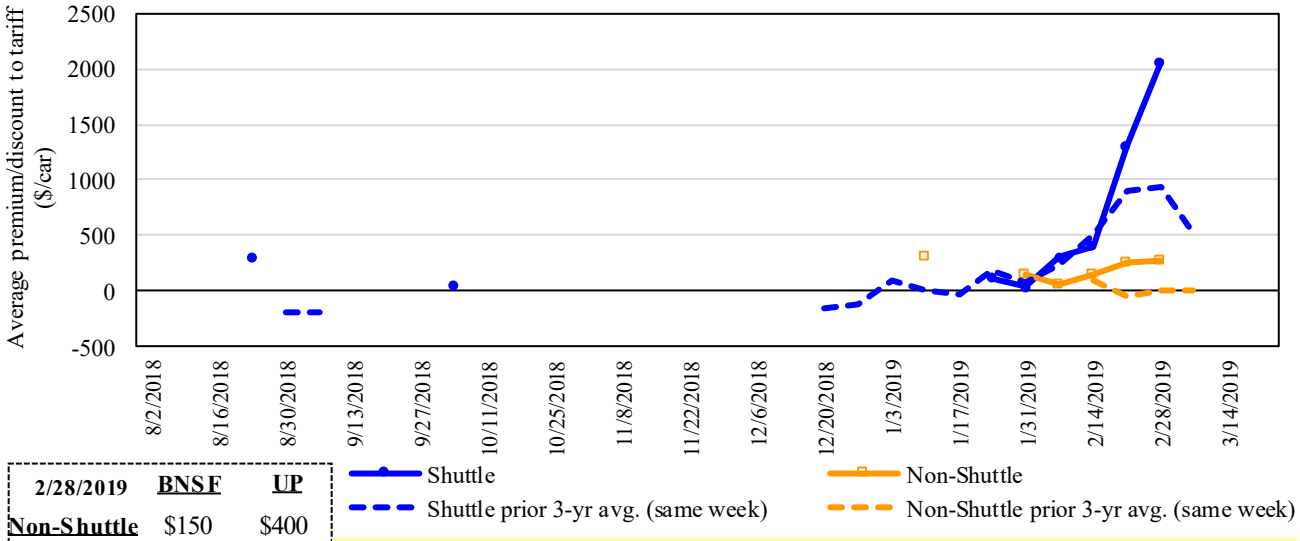
Region 2 includes: CO, IA, KS, MN, NE, WY, and Kansas City and St. Joseph, MO.

[5]Range is shown because average is not available. Not available = n/a.

Source: Transportation & Marketing Program/AMS/USDA.

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 2019, Secondary Market

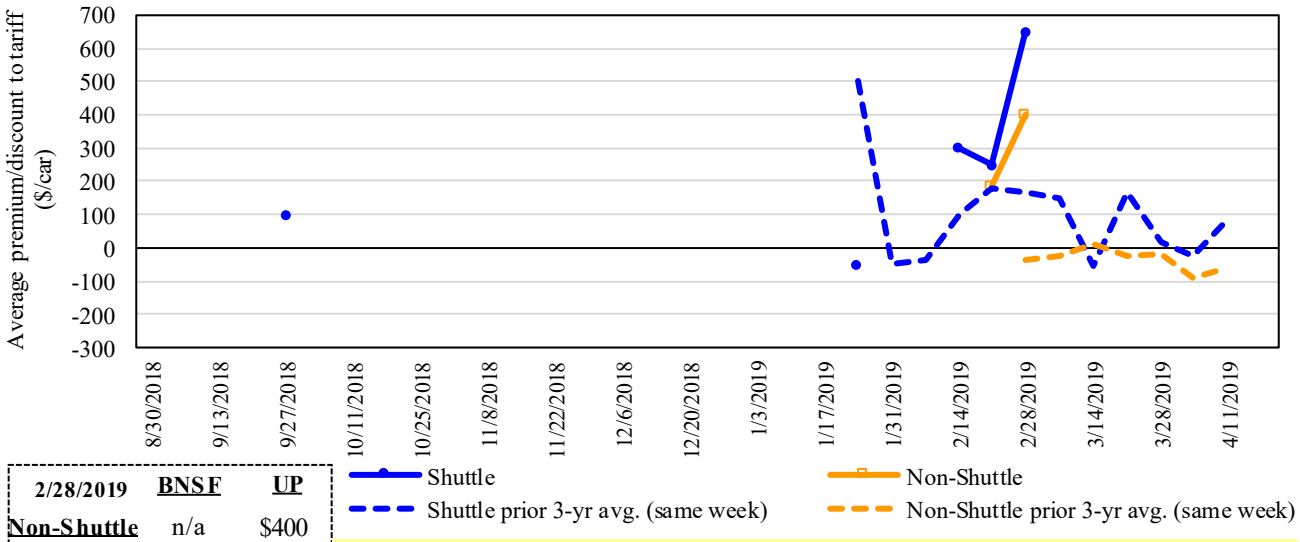


2/28/2019	BNSF	UP
Non-Shuttle	$150	$400
Shuttle	$2,889	$1,233

Average Non-shuttle bids/offers rose $25 this week, and are $38 below the peak.
Average Shuttle bids/offers rose $749 this week and are at the peak.

Non-shuttle bids include unit-train and single-car bids. n/a = not available.
Source: Transportation & Marketing Program/AMS/USDA

Figure 5
Bids/Offers for Railcars to be Delivered in April 2019, Secondary Market



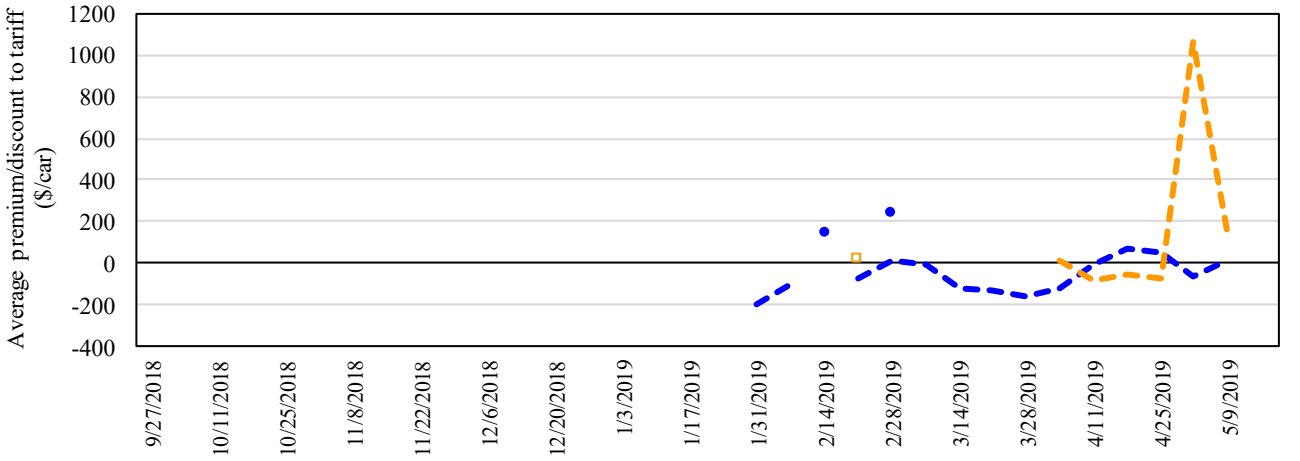
2/28/2019	BNSF	UP
Non-Shuttle	n/a	$400
Shuttle	$650	n/a

Average Non-shuttle bids/offers rose $213 this week, and are at the peak.
Average Shuttle bids/offers rose $400 this week and are at the peak.

Non-shuttle bids include unit-train and single-car bids. n/a = not available.
Source: Transportation & Marketing Program/AMS/USDA

Figure 6

Bids/Offers for Railcars to be Delivered in May 2019, Secondary Market



2/28/2019	BNSF	UP
Non-Shuttle	n/a	n/a
Shuttle	$400	$100

There were no Non-Shuttle bids/offers this week.
There were no Shuttle bids/offers last week. Average Non-Shuttle bids/offers this week are at the peak.

Non-shuttle bids include unit-train and single-car bids. n/a = not available.
Source: Transportation & Marketing Program/AMS/USDA

Table 6

Weekly Secondary Railcar Market ($/car)[1]

	For the week ending: 2/28/2019	Delivery period					
		Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19
Non-shuttle	**BNSF-GF**	**150**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**
	Change from last week	0	n/a	n/a	n/a	n/a	n/a
	Change from same week 2018	n/a	n/a	n/a	n/a	n/a	n/a
	UP-Pool	**400**	**400**	**n/a**	**n/a**	**n/a**	**n/a**
	Change from last week	50	50	n/a	n/a	n/a	n/a
	Change from same week 2018	n/a	n/a	n/a	n/a	n/a	n/a
Shuttle	**BNSF-GF**	**2889**	**650**	**400**	**n/a**	**n/a**	**n/a**
	Change from last week	1089	50	n/a	n/a	n/a	n/a
	Change from same week 2018	1606	n/a	n/a	n/a	n/a	n/a
	UP-Pool	**1233**	**n/a**	**100**	**n/a**	**n/a**	**n/a**
	Change from last week	408	n/a	n/a	n/a	n/a	n/a
	Change from same week 2018	1083	n/a	275	n/a	n/a	n/a

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

Note: Bids listed are market INDICATORS only & are NOT guaranteed prices,

n/a = not available; GF = guaranteed freight; Pool = guaranteed pool

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

Source: Transportation and Marketing Program/AMS/USDA

The **tariff rail rate** is the base price of freight rail service, and together with **fuel surcharges** and any **auction and secondary rail** values constitute 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. High auction and secondary rail values, during times of high rail demand or short supply, can exceed the cost of the tariff rate plus fuel surcharge.

Table 7

Tariff Rail Rates for Unit and Shuttle Train Shipments[1]

March, 2019	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	$91	$40.46	$1.10	2
	Grand Forks, ND	Duluth-Superior, MN	$4,268	$0	$42.38	$1.15	3
	Wichita, KS	Los Angeles, CA	$7,175	$0	$71.25	$1.94	2
	Wichita, KS	New Orleans, LA	$4,540	$160	$46.68	$1.27	0
	Sioux Falls, SD	Galveston-Houston, TX	$6,911	$0	$68.63	$1.87	2
	Northwest KS	Galveston-Houston, TX	$4,816	$176	$49.57	$1.35	0
	Amarillo, TX	Los Angeles, CA	$5,121	$244	$53.28	$1.45	2
Corn	Champaign-Urbana, IL	New Orleans, LA	$4,000	$181	$41.52	$1.05	1
	Toledo, OH	Raleigh, NC	$6,581	$0	$65.35	$1.66	4
	Des Moines, IA	Davenport, IA	$2,258	$38	$22.80	$0.58	0
	Indianapolis, IN	Atlanta, GA	$5,646	$0	$56.07	$1.42	4
	Indianapolis, IN	Knoxville, TN	$4,704	$0	$46.71	$1.19	4
	Des Moines, IA	Little Rock, AR	$3,609	$113	$36.96	$0.94	0
	Des Moines, IA	Los Angeles, CA	$5,327	$328	$56.16	$1.43	0
Soybeans	Minneapolis, MN	New Orleans, LA	$4,131	$171	$42.72	$1.16	0
	Toledo, OH	Huntsville, AL	$5,459	$0	$54.21	$1.48	3
	Indianapolis, IN	Raleigh, NC	$6,698	$0	$66.51	$1.81	4
	Indianapolis, IN	Huntsville, AL	$4,937	$0	$49.03	$1.33	4
	Champaign-Urbana, IL	New Orleans, LA	$4,745	$181	$48.92	$1.33	0
Shuttle Train							
Wheat	Great Falls, MT	Portland, OR	$4,078	$0	$40.50	$1.10	3
	Wichita, KS	Galveston-Houston, TX	$4,296	$0	$42.66	$1.16	3
	Chicago, IL	Albany, NY	$5,896	$0	$58.55	$1.59	4
	Grand Forks, ND	Portland, OR	$5,736	$0	$56.96	$1.55	2
	Grand Forks, ND	Galveston-Houston, TX	$6,056	$0	$60.14	$1.64	2
	Northwest KS	Portland, OR	$5,912	$288	$61.57	$1.68	1
Corn	Minneapolis, MN	Portland, OR	$5,180	$0	$51.44	$1.31	4
	Sioux Falls, SD	Tacoma, WA	$5,140	$0	$51.04	$1.30	4
	Champaign-Urbana, IL	New Orleans, LA	$3,800	$181	$39.53	$1.00	2
	Lincoln, NE	Galveston-Houston, TX	$3,880	$0	$38.53	$0.98	5
	Des Moines, IA	Amarillo, TX	$4,060	$142	$41.72	$1.06	2
	Minneapolis, MN	Tacoma, WA	$5,180	$0	$51.44	$1.31	4
	Council Bluffs, IA	Stockton, CA	$5,000	$0	$49.65	$1.26	4
Soybeans	Sioux Falls, SD	Tacoma, WA	$5,750	$0	$57.10	$1.55	3
	Minneapolis, MN	Portland, OR	$5,800	$0	$57.60	$1.57	3
	Fargo, ND	Tacoma, WA	$5,650	$0	$56.11	$1.53	3
	Council Bluffs, IA	New Orleans, LA	$4,775	$209	$49.49	$1.35	0
	Toledo, OH	Huntsville, AL	$4,634	$0	$46.02	$1.25	6
	Grand Island, NE	Portland, OR	$5,710	$295	$59.63	$1.62	0

[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 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 calculated using tariff rate plus fuel surcharge

Sources: www.bnsf.com, www.cn.ca, www.csx.com, www.up.com

Table 8

Tariff Rail Rates for U.S. Bulk Grain Shipments to Mexico

Date: March, 2019

Commodity	Origin state	Destination region	Tariff rate/car[1]	Fuel surcharge per car[2]	Tariff plus surcharge per: metric ton[3]	bushel[3]	Percent change[4] Y/Y
Wheat	MT	Chihuahua, CI	$7,284	$0	$74.43	$2.02	-2
	OK	Cuautitlan, EM	$6,743	$125	$70.18	$1.91	2
	KS	Guadalajara, JA	$7,371	$456	$79.97	$2.17	3
	TX	Salinas Victoria, NL	$4,329	$77	$45.02	$1.22	1
Corn	IA	Guadalajara, JA	$8,528	$388	$91.10	$2.31	4
	SD	Celaya, GJ	$7,880	$0	$80.51	$2.04	2
	NE	Queretaro, QA	$8,207	$265	$86.56	$2.20	2
	SD	Salinas Victoria, NL	$6,905	$0	$70.55	$1.79	2
	MO	Tlalnepantla, EM	$7,573	$258	$80.02	$2.03	2
	SD	Torreon, CU	$7,480	$0	$76.43	$1.94	2
Soybeans	MO	Bojay (Tula), HG	$8,284	$361	$88.33	$2.40	3
	NE	Guadalajara, JA	$8,842	$387	$94.29	$2.56	3
	IA	El Castillo, JA	$9,110	$0	$93.08	$2.53	2
	KS	Torreon, CU	$7,714	$275	$81.62	$2.22	4
Sorghum	NE	Celaya, GJ	$7,527	$350	$80.48	$2.04	4
	KS	Queretaro, QA	$8,000	$157	$83.34	$2.11	2
	NE	Salinas Victoria, NL	$6,633	$126	$69.05	$1.75	3
	NE	Torreon, CU	$6,962	$256	$73.75	$1.87	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

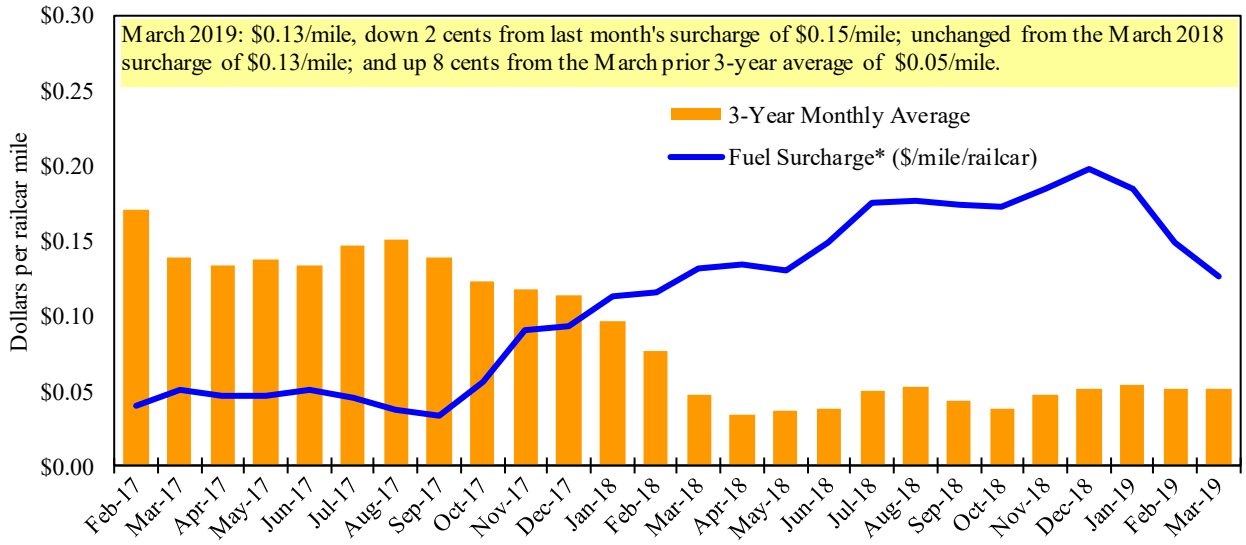
[3]Approximate load per car = 97.87 metric tons: Corn & Sorghum 56 lbs/bu, Wheat & Soybeans 60 lbs/bu

[4]Percentage change calculated using tariff rate plus fuel surchage

Sources: www.bnsf.com, www.uprr.com, www.kcsouthern.com

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.

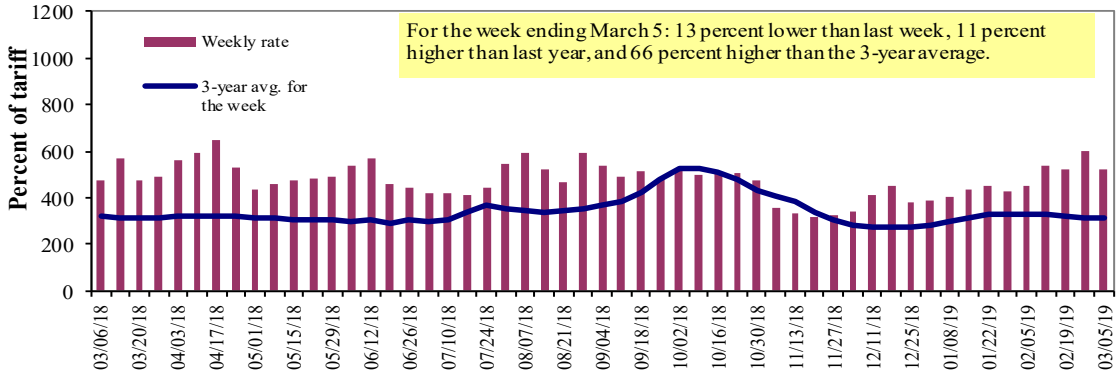
* Beginning January 2009, the Canadian Pacific fuel surcharge is computed by a monthly average of the bi-weekly fuel surcharge.

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

Sources: www.bnsf.com, www.cn.ca, www.cpr.ca, www.csx.com, www.kcsi.com, www.nscorp.com, www.uprr.com

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: Transportation & Marketing Program/AMS/USDA

Table 9
Weekly Barge Freight Rates: Southbound Only

		Twin Cities	Mid-Mississippi	Lower Illinois River	St. Louis	Cincinnati	Lower Ohio	Cairo-Memphis
Rate[1]	3/5/2019	-	-	525	400	-	-	375
	2/26/2019	-	-	600	458	-	-	417
$/ton	3/5/2019	-	-	24.36	15.96	-	-	11.78
	2/26/2019	-	-	27.84	18.27	-	-	13.09
Current week % change from the same week:								
	Last year	-	-	11	3	-	-	15
	3-year avg. [2]	-	-	66	73	-	-	89
Rate[1]	April	500	478	475	358	442	442	325
	June	483	450	442	338	392	392	308

[1]Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); [2]4-week moving average; ton = 2,000 pounds; "-" n/a due to closure
Source: Transportation & Marketing Programs/AMS/USDA

Figure 9
Benchmark tariff rates

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

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

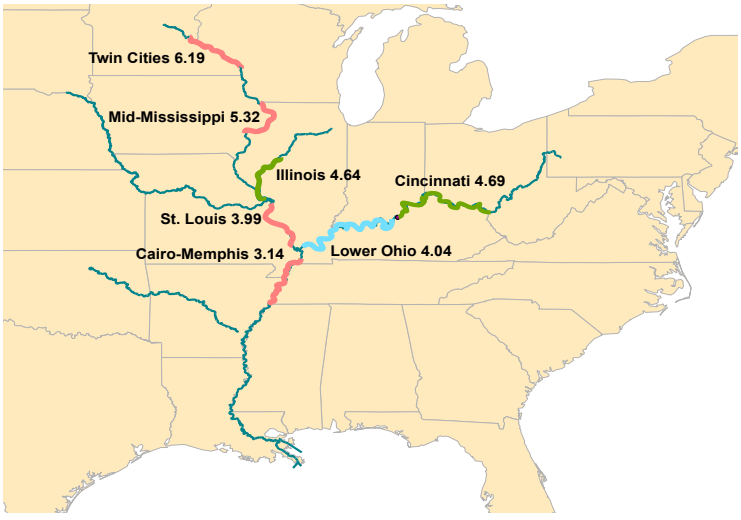
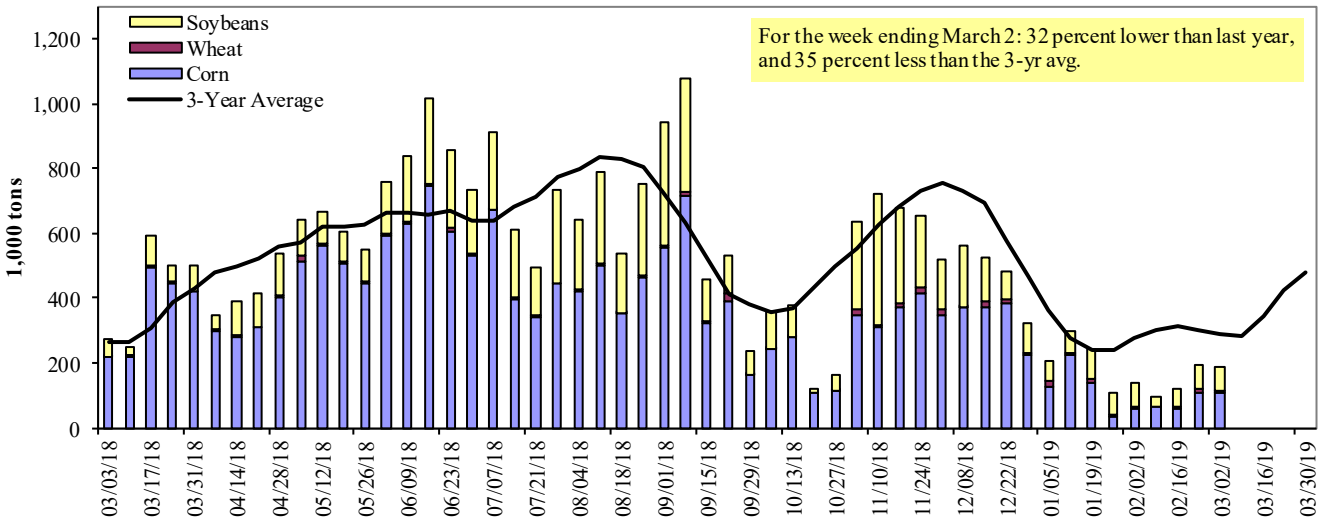


Figure 10

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 03/02/2019	Corn	Wheat	Soybeans	Other	Total
Mississippi River					
Rock Island, IL (L15)	0	0	0	0	0
Winfield, MO (L25)	6	0	9	0	16
Alton, IL (L26)	110	9	72	2	193
Granite City, IL (L27)	107	9	72	2	190
Illinois River (L8)	89	14	58	9	171
Ohio River (OLMSTED)	0	0	0	0	0
Arkansas River (L1)	0	22	27	0	49
Weekly total - 2019	107	32	99	2	239
Weekly total - 2018	270	11	105	0	387
2019 YTD[1]	1,646	341	1,749	10	3,745
2018 YTD[1]	2,019	214	2,072	25	4,329
2019 as % of 2018 YTD	82	159	84	42	87
Last 4 weeks as % of 2018[2]	50	147	81	20	66
Total 2018	23,349	1,674	12,819	133	37,975

[1] Weekly total, YTD (year-to-date) and calendar year total includes Miss/27, Ohio/OLMSTED, and Ark/1; "Other" refers to oats, barley, sorghum, and rye.

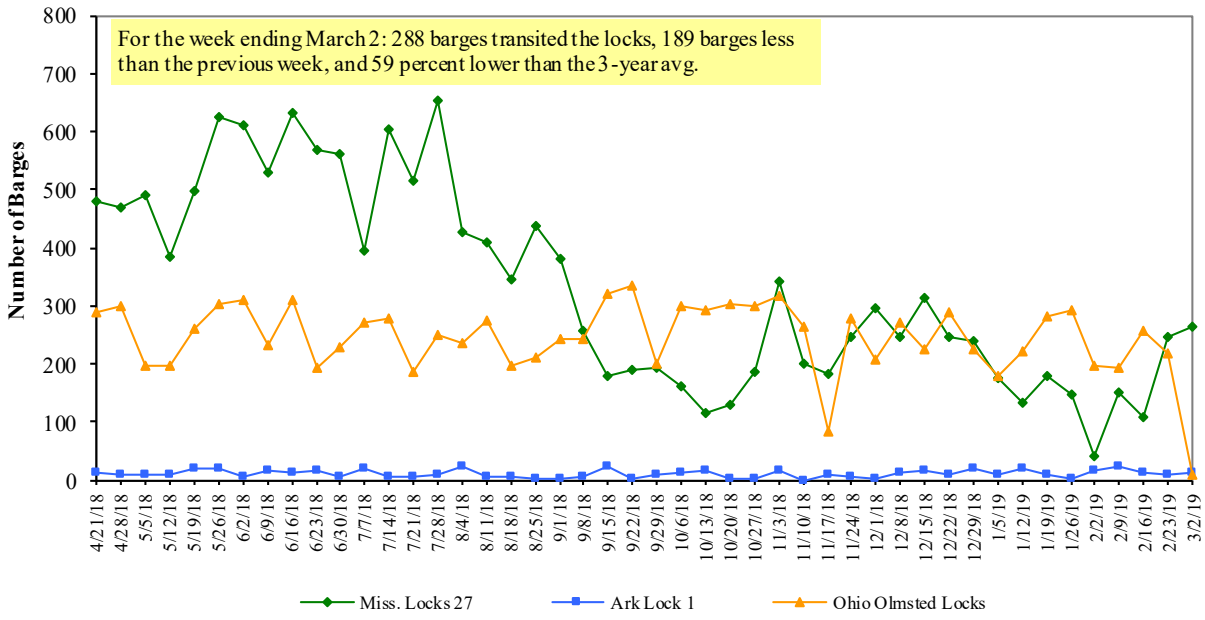
[2] As a percent of same period in 2018.

Note: 1. Total may not add exactly, due to rounding.
2. Starting from 11/24/2018, weekly movement through Ohio 52 is replaced by Olmsted.

Source: U.S. Army Corps of Engineers

Figure 11

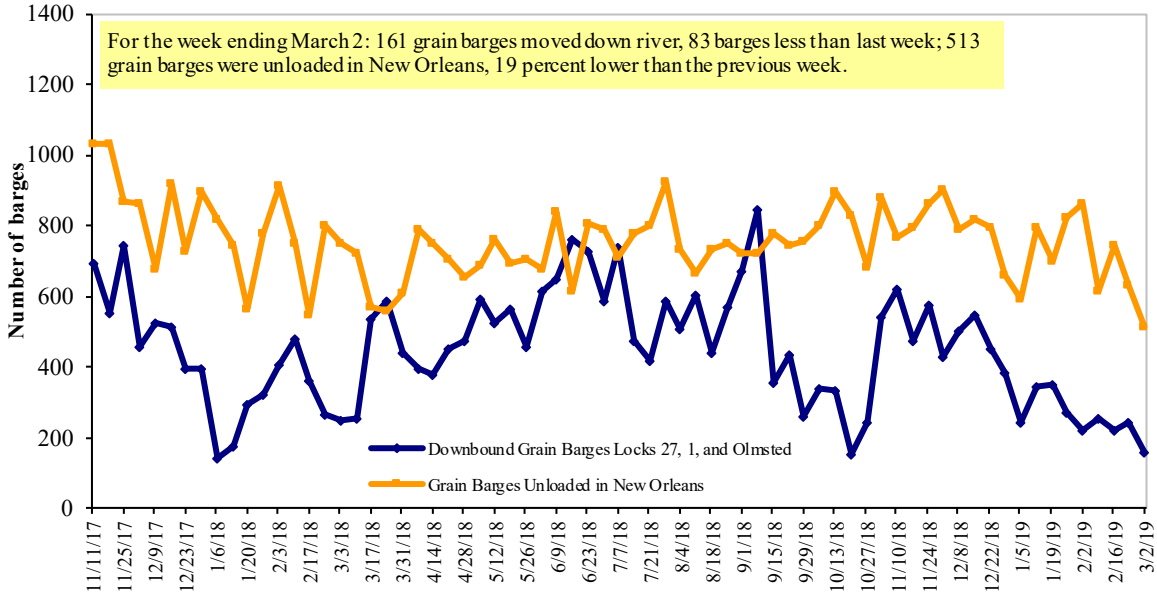
Upbound Empty Barges Transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam



Source: U.S. Army Corps of Engineers

Figure 12

Grain Barges for Export in New Orleans Region



Source: U.S. Army Corps of Engineers and GIPSA

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 3/4/2019 (US $/gallon)

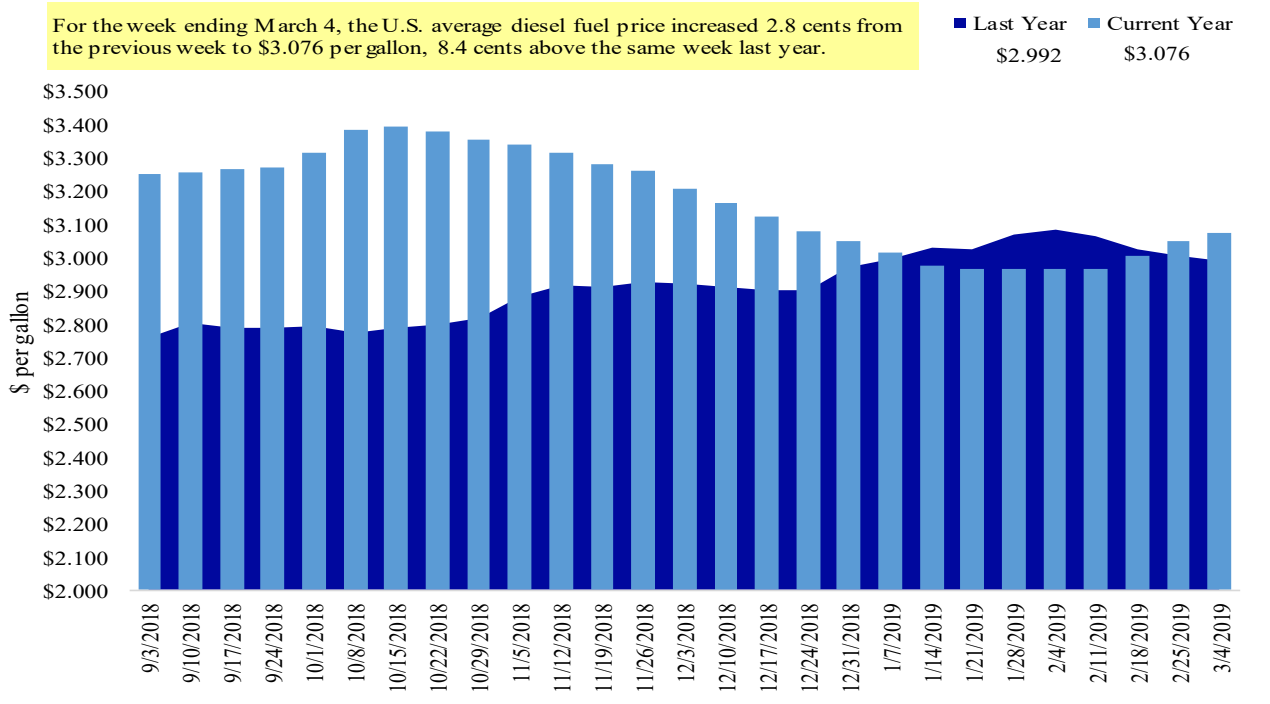
Region	Location	Price	Change from Week ago	Change from Year ago
I	East Coast	3.119	0.025	0.073
	New England	3.177	0.006	0.051
	Central Atlantic	3.301	0.015	0.061
	Lower Atlantic	2.985	0.036	0.091
II	Midwest	3.014	0.045	0.094
III	Gulf Coast	2.870	0.021	0.077
IV	Rocky Mountain	2.939	0.026	0.029
V	West Coast	3.503	0.010	0.111
	West Coast less California	3.155	0.014	0.091
	California	3.779	0.007	0.127
Total	U.S.	3.076	0.028	0.084

[1]Diesel fuel prices include all taxes. Prices represent an average of all types of diesel fuel.

Source: Energy Information Administration/U.S. Department of Energy (www.eia.doe.gov)

Figure 13

Weekly Diesel Fuel Prices, U.S. Average



Source: Retail On-Highway Diesel Prices, Energy Information Administration, Dept. of Energy

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]									
2/21/2019	2,535	959	1,440	1,254	119	6,307	14,031	13,384	33,722
This week year ago	1,599	700	1,349	927	95	4,670	21,540	7,726	33,936
Cumulative exports-marketing year[2]									
2018/19 YTD[3]	4,984	1,937	4,762	3,612	358	15,653	25,525	25,575	66,753
2017/18 YTD	7,083	1,531	4,247	3,828	276	16,965	17,729	37,770	72,464
YTD 2018/19 as % of 2017/18	70	127	112	94	129	92	144	68	92
Last 4 wks as % of same period 2017/18	39	36	25	37	38	34	16	43	25
2017/18 Total	9,150	2,343	5,689	4,854	384	22,419	57,209	56,214	135,842
2016/17 Total	11,096	2,285	7,923	4,254	484	26,042	41,864	51,156	119,062

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

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

[3] Please note that the data for this table is not current for this week due to the federal shutdown in December

Note: YTD = year-to-date. Marketing Year: wheat = 6/01-5/31, corn & soybeans = 9/01-8/31

Source: Foreign Agricultural Service/USDA (www.fas.usda.gov)

Table 13

Top 5 Importers[1] of U.S. Corn

For the week ending 2/21/2019	Total Commitments[2]		% change	Exports[3]
	2018/19	2017/18	current MY	3-year avg
	Current MY	Last MY	from last MY	2015-2017
	- 1,000 mt -			
Mexico	12,974	10,946	19	13,691
Japan	8,097	6,713	21	11,247
Korea	3,023	2,361	28	4,754
Colombia	2,980	2,800	6	4,678
Peru	1,870	2,070	(10)	2,975
Top 5 Importers	**28,943**	**24,891**	**16**	**37,344**
Total US corn export sales	**39,556**	**39,269**	**1**	**53,184**
% of Projected	63%	63%		
Change from prior week[2]	**1,212**	**1,718**		
Top 5 importers' share of U.S. corn export sales	73%	63%		70%
USDA forecast, February 2019	**62,341**	**62,036**	**0**	
Corn Use for Ethanol USDA forecast, February 2019	**141,605**	**142,367**	**(1)**	

(n) indicates negative number.

[1]Based on FAS Marketing Year Ranking Reports for 2017/18 - www.fas.usda.gov; Marketing year (MY) = Sep 1 - Aug 31.

[2]Cumulative Exports (shipped) + Outstanding Sales (unshipped), FAS Weekly Export Sales Report, or Export Sales Query--http://www.fas.usda.gov/esrquery/. 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 - http://apps.fas.usda.gov/export-sales/myrkaug.htm; 3-yr average

Table 14

Top 5 Importers[1] of U.S. Soybeans

For the week ending 2/21/2019	Total Commitments[2] 2018/19 Current MY	Total Commitments[2] 2017/18 Last MY	% change current MY from last MY	Exports[3] 3-yr avg. 2015-2017
		- 1,000 mt -		- 1,000 mt -
China	9,222	26,416	(65)	31,228
Mexico	4,473	3,185	40	3,716
Indonesia	1,505	1,294	16	2,250
Japan	1,812	1,508	20	2,145
Netherlands	1,615	840	92	2,209
Top 5 importers	**18,628**	**33,244**	**(44)**	**41,549**
Total US soybean export sales	**38,959**	**45,496**	**(14)**	**55,113**
% of Projected	76%	78%		
Change from prior week[2]	**2,058**	**858**		
Top 5 importers' share of U.S. soybean export sales	48%	73%		**75%**
USDA forecast, February 2019	**51,090**	**58,011**	**88**	

(n) indicates negative number.

[1] Based on FAS Marketing Year Ranking Reports for 2017/18 - www.fas.usda.gov; Marketing year (MY) = Sep 1- Aug 31.

[2] Cumulative Exports (shipped) + Outstanding Sales (unshipped), FAS Weekly Export Sales Report, or Export Sales Query-- http://www.fas.usda.gov/esrquery/. The total commitments change (net sales) from prior week could include reivisions from previous week's outstanding sales and/or accumulated sales

[3] FAS Marketing Year Final Reports - www.fas.usda.gov/export-sales/myfi_rpt.htm. (Carryover plus Accumulated Exports)

Table 15

Top 10 Importers[1] of All U.S. Wheat

For the week ending 2/21/2019	Total Commitments[2] 2018/19 Current MY	Total Commitments[2] 2017/18 Last MY	% change current MY from last MY	Exports[3] 3-yr avg 2015-2017
	- 1,000 mt -			- 1,000 mt -
Mexico	2,556	2,754	(7)	2,781
Japan	2,485	2,565	(3)	2,649
Philippines	2,792	2,380	17	2,441
Korea	1,351	1,314	3	1,257
Nigeria	1,308	1,061	23	1,254
Indonesia	1,118	1,164	(4)	1,076
Taiwan	987	1,009	(2)	1,066
China	40	890	(96)	944
Colombia	517	280	85	714
Thailand	740	630	17	618
Top 10 importers	**13,895**	**14,047**	(1)	**14,800**
Total US wheat export sales	**21,960**	**21,635**	**2**	**22,869**
% of Projected	81%	88%		
Change from prior week[2]	**476**	**191**		
Top 10 importers' share of U.S. wheat export sales	63%	65%		65%
USDA forecast, February 2019	**27,248**	**24,550**	**11**	

(n) indicates negative number.

[1] Based on FAS Marketing Year Ranking Reports for 2017/18 - www.fas.usda.gov; Marketing year = Jun 1 - May 31.

[2] Cumulative Exports (shipped) + Outstanding Sales (unshipped), FAS Weekly Export Sales Report, or Export Sales Query-- http://www.fas.usda.gov/esrquery/. 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 - www.fas.usda.gov/export-sales/myfi_rpt.htm.

Table 16

Grain Inspections for Export by U.S. Port Region (1,000 metric tons)

Port Regions	For the Week Ending 02/28/19	Previous Week*	Current Week as % of Previous	2019 YTD*	2018 YTD*	2019 YTD as % of 2018 YTD	Last 4-weeks as % of: Last Year	Last 4-weeks as % of: Prior 3-yr. avg.	2018 Total*
Pacific Northwest									
Wheat	233	452	52	2,220	1,815	122	170	142	13,315
Corn	184	97	190	1,781	2,275	78	55	69	20,024
Soybeans	306	496	62	2,329	2,719	86	135	102	7,719
Total	**723**	**1,044**	**69**	**6,331**	**6,808**	**93**	**112**	**104**	**41,058**
Mississippi Gulf									
Wheat	76	97	79	837	752	111	74	74	3,896
Corn	518	508	102	4,386	4,368	100	90	81	33,735
Soybeans	424	770	55	5,638	6,225	91	103	96	28,124
Total	**1,018**	**1,375**	**74**	**10,861**	**11,345**	**96**	**95**	**88**	**65,755**
Texas Gulf									
Wheat	121	246	49	929	878	106	145	164	3,198
Corn	0	0	n/a	63	98	64	45	39	730
Soybeans	0	0	n/a	0	0	n/a	n/a	0	69
Total	**121**	**246**	**49**	**992**	**976**	**102**	**131**	**139**	**3,997**
Interior									
Wheat	32	12	256	256	299	85	51	66	1,614
Corn	142	143	99	1,133	1,164	97	105	113	8,650
Soybeans	139	98	143	1,070	957	112	117	133	6,729
Total	**313**	**253**	**124**	**2,459**	**2,420**	**102**	**102**	**115**	**16,993**
Great Lakes									
Wheat	0	1	0	23	19	117	n/a	n/a	894
Corn	0	0	n/a	0	0	n/a	n/a	n/a	404
Soybeans	0	0	n/a	16	0	n/a	n/a	n/a	1,192
Total	**0**	**1**	**0**	**39**	**19**	**202**	**n/a**	**n/a**	**2,491**
Atlantic									
Wheat	1	0	n/a	1	0	n/a	n/a	4	69
Corn	7	0	n/a	28	0	n/a	n/a	463	138
Soybeans	19	13	148	240	445	54	18	20	2,047
Total	**26**	**13**	**208**	**269**	**445**	**60**	**21**	**22**	**2,253**
U.S. total from ports*									
Wheat	463	808	57	4,265	3,763	113	130	125	22,986
Corn	850	748	114	7,392	7,905	94	81	81	63,682
Soybeans	888	1,376	65	9,294	10,346	90	106	97	45,879
Total	**2,202**	**2,933**	**75**	**20,950**	**22,013**	**95**	**100**	**96**	**132,547**

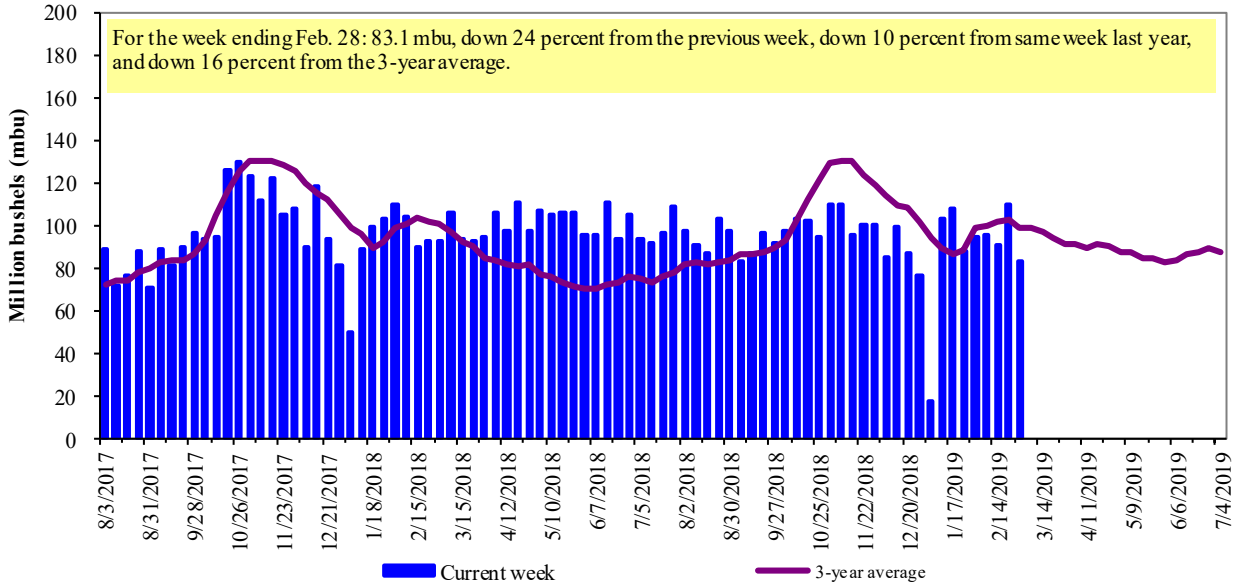
*Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

Source: Grain Inspection, Packers and Stockyards Administration/USDA (www.gipsa.usda.gov); YTD= year-to-date; n/a = not applicable

The United States exports approximately one-quarter of the grain it produces. On average, this includes nearly 45 percent of U.S.-grown wheat, 50 percent of U.S.-grown soybeans, and 20 percent of the U.S.-grown corn. Approximately 55 percent of the U.S. export grain shipments departed through the U.S. Gulf region in 2017.

Figure 14

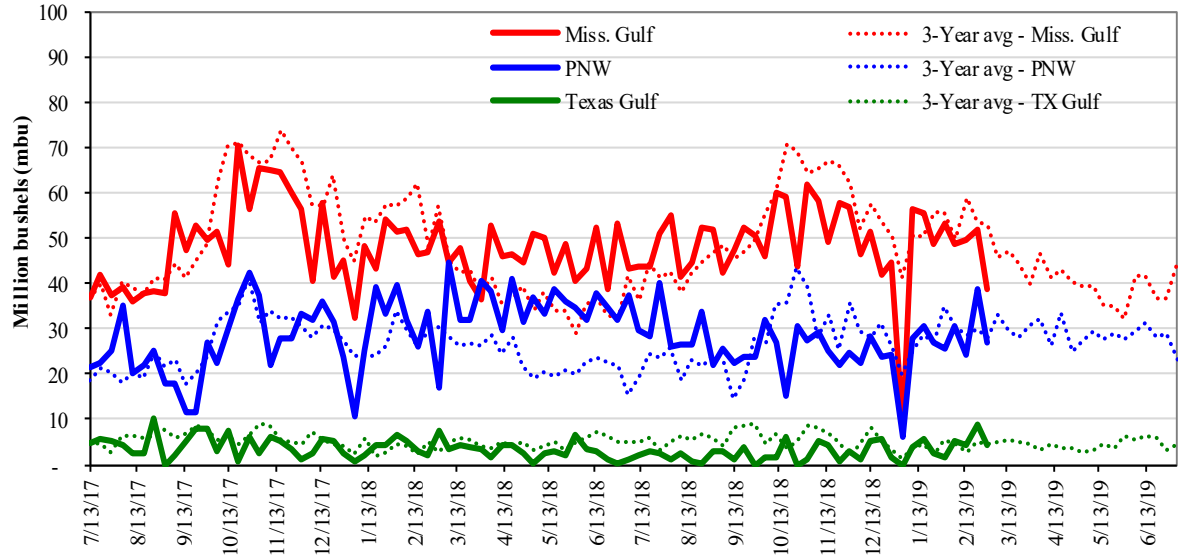
U.S. grain inspected for export (wheat, corn, and soybeans)



Source: Grain Inspection, Packers and Stockyards Administration/USDA (www.gipsa.usda.gov)
Note: 3-year average consists of 4-week running average

Figure 15

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



Week ending 02/28/19 inspections (mbu):	
Mississippi Gulf:	38.8
PNW:	27.1
Texas Gulf:	4.5

Percent change from:	MS Gulf	TX Gulf	U.S. Gulf	PNW
Last Week:	down 25	down 51	down 29	down 30
Last Year (same week):	down 28	down 41	down 29	up 60
3-yr avg. (4-wk.mov. Avg):	down 28	up 6	down 25	down 7

Source: Grain Inspection, Packers and Stockyards Administration/USDA (www.gipsa.usda.gov)

Table 17

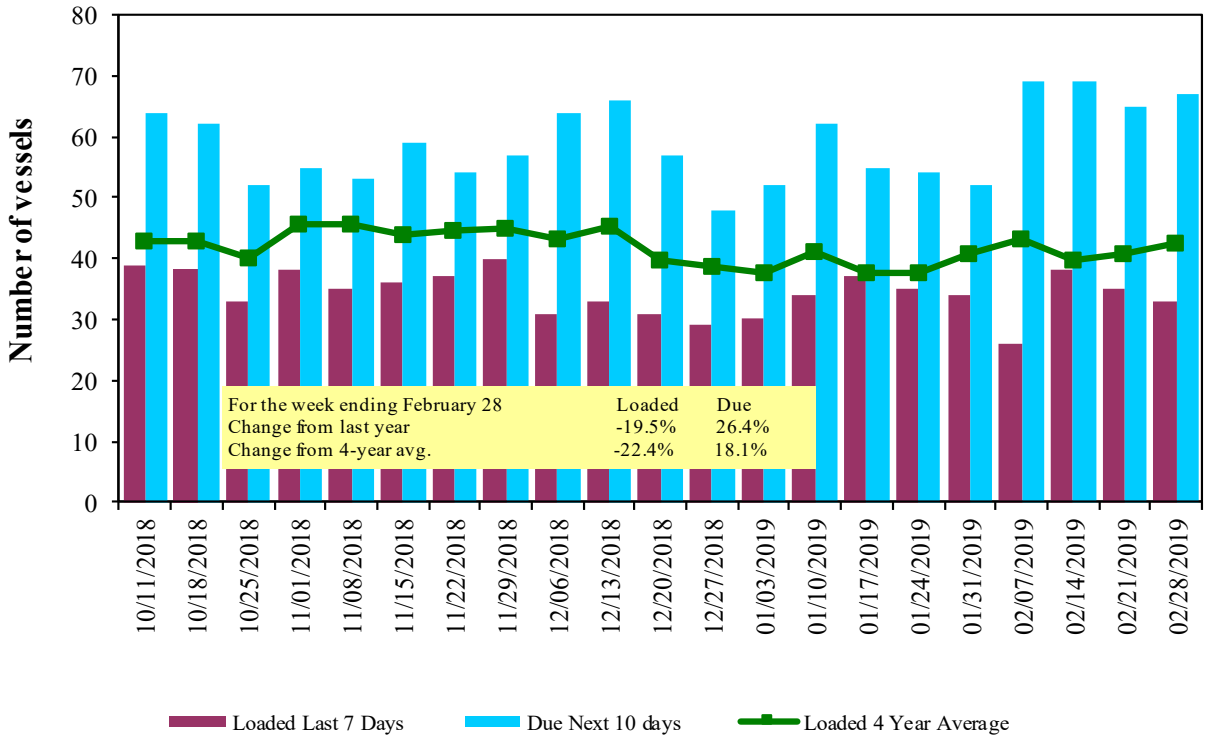
Weekly Port Region Grain Ocean Vessel Activity (number of vessels)

	Gulf			Pacific Northwest
Date	In port	Loaded 7-days	Due next 10-days	In port
2/28/2019	36	33	67	28
2/21/2019	45	35	65	31
2018 range	(23..88)	(24..41)	(38..67)	(4..30)
2018 avg.	40	34	54	17

Source: Transportation & Marketing Programs/AMS/USDA

Figure 16

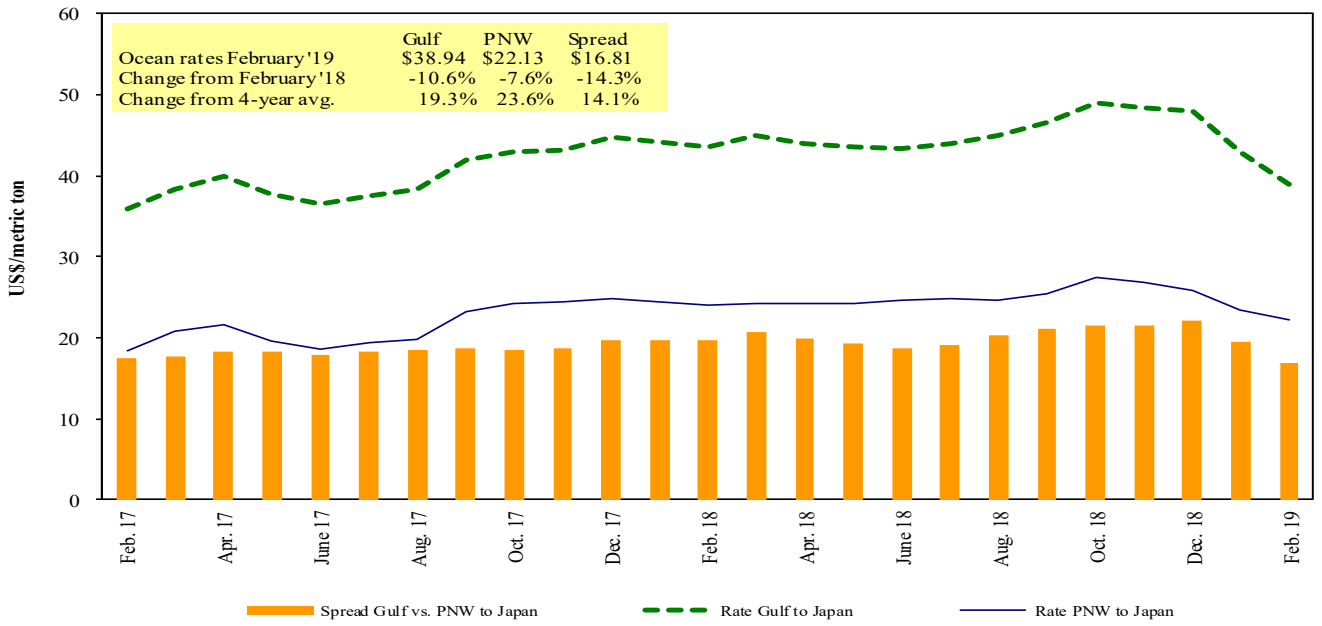
U.S. Gulf Vessel Loading Activity



Source: Transportation & Marketing Program/AMS/USDA
[1]U.S. Gulf includes Mississippi, Texas, and East Gulf.

Figure 17

Grain Vessel Rates, U.S. to Japan



Data Source: O'Neil Commodity Consulting

Table 18

Ocean Freight Rates For Selected Shipments, Week Ending 03/02/2019

Export region	Import region	Grain types	Loading date	Volume loads (metric tons)	Freight rate (US$/metric ton)
U.S. Gulf	China	Heavy Grain	Mar 15/Apr 15	63,000	40.00
PNW	China	Heavy Grain	Mar 2/18	60,000	27.50
PNW	Oman	Wheat	Feb 18/28	25,000	69.94*
PNW	Taiwan	Heavy Grain	Sep 15/Oct 31	63,000	25.00
Brazil	China	Heavy Grain	Mar 3/11	63,000	27.50
Brazil	China	Heavy Grain	Feb 26/Mar 4	66,000	24.75
Brazil	China	Heavy Grain	Feb 20/25	65,000	26.00
Brazil	China	Heavy Grain	Feb 13/26	60,000	26.75
Brazil	China	Heavy Grain	Jan 22/30	60,000	29.50
Brazil	China	Heavy Grain	Dec 15/20	60,000	37.50
Brazil	China	Heavy Grain	Dec 1/10	60,000	36.25
Brazil	China	Heavy Grain	Nov 20/30	60,000	38.00
Brazil	China	Heavy Grain	Nov 1/10	60,000	34.00
Brazil	S.Korea	Heavy Grain	Nov 5/10	66,000	43.00

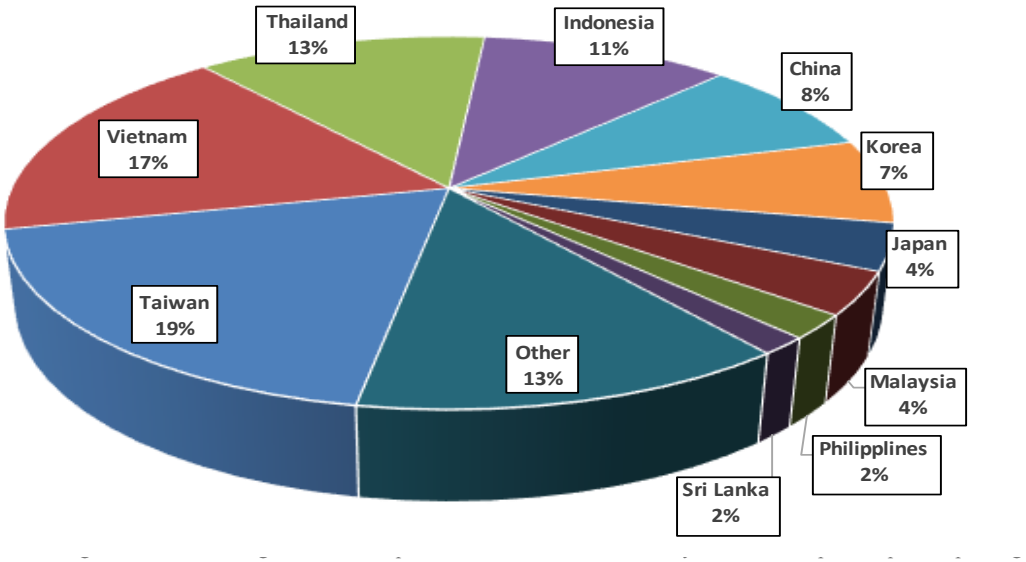
Rates shown are per metric ton (2,204.62 lbs. = 1 metric ton), F.O.B., except where otherwise indicated; op = option

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

Source: Maritime Research Inc. (www.maritime-research.com)

In 2017, containers were used to transport 7 percent of total U.S. waterborne grain exports. Approximately 62 percent of U.S. waterborne grain exports in 2017 went to Asia, of which 10 percent were moved in containers. Approximately 93 percent of U.S. waterborne containerized grain exports were destined for Asia.

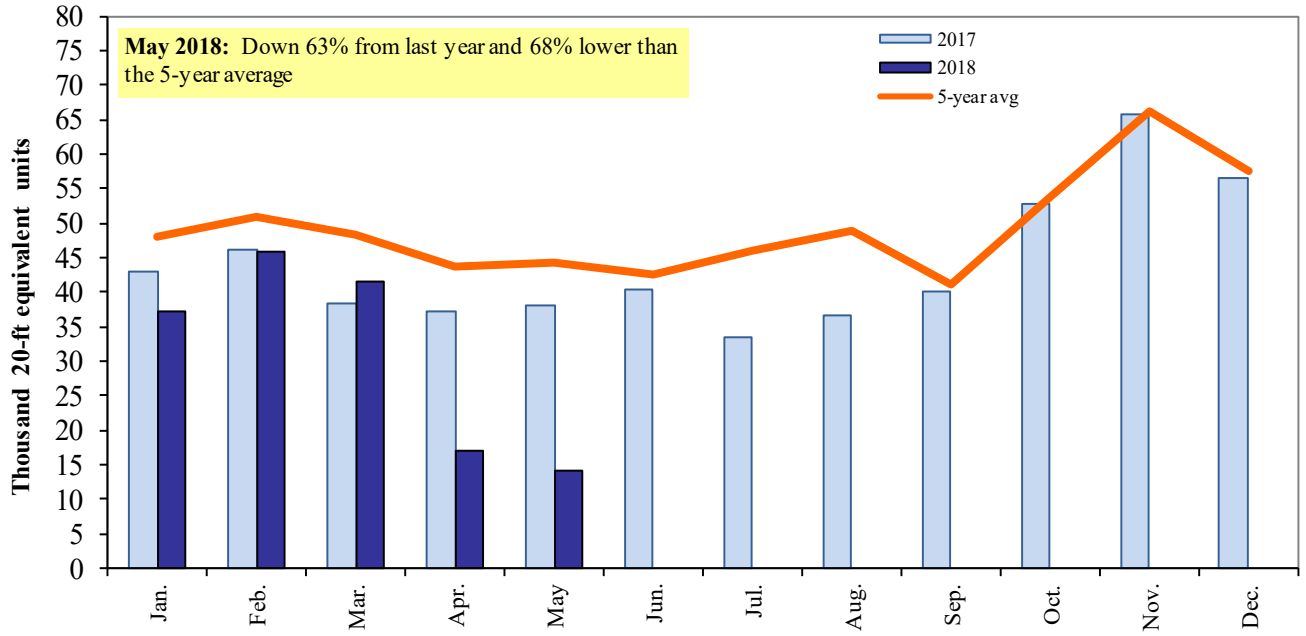
Figure 18
Top 10 Destination Markets for U.S. Containerized Grain Exports, January-May 2018



Service (PIERS) data

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

Figure 19
Monthly Shipments of Containerized Grain to Asia



Source: USDA/Agricultural Marketing Service/Transportation Services Division analysis of Port Import Export Reporting Service (PIERS) data.

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.

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