



Grain Transportation Report

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

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February 23, 2017

WEEKLY HIGHLIGHTS

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USDA Agricultural Projections to 2026

On February 16, USDA released its new 10-year agricultural projections, [USDA Agricultural Projections to 2026](#). The projections indicate U.S. agriculture will continue adjusting to lower prices and reduced energy prices over the next several years for most farm commodities. Reduced prices for crude oil and natural gas lead to expected decreases in agricultural production costs, with fertilizer, fuel, lubricants, and electricity projected to fall the most. These anticipated production cost advantages point to agricultural production rising more rapidly than world population, which enables an increase in per capita use of agricultural products. The projections anticipate global agricultural trade growing through 2026, but at a slightly slower pace than the previous decade. In developing countries, the projections foresee demand for agricultural products increasing faster than production, leading to greater import demand. The projections expect the United States to remain a major exporter of agricultural products, but lower global economic growth rates and a stronger dollar could be a drag on U.S. agricultural growth rates. If transportation rates are stable, they will help keep the United States among the leaders in the global agricultural markets, especially in bulk materials, such as grain and oilseeds.

Grain Inspections Up Slightly

For the week ending February 16, **total inspections of grain** (corn, wheat, and soybeans) for export from major U.S. export regions reached 2.78 million metric tons (mmt), up 2 percent from the previous week, unchanged from the same time last year, and 8 percent above the 3-year average. Total wheat inspections jumped 72 percent from the previous week due mainly to increased shipments to Asia. Corn and soybean inspections, however, decreased 9 percent and 7 percent from the previous week. Grain inspections in the Mississippi Gulf increased 9 percent from the previous week, while Pacific Northwest (PNW) inspections increased 7 percent despite lower rail deliveries to PNW ports. Outstanding export sales (unshipped) are up for wheat but down for corn and soybeans.

Fuel Prices Fluctuate as Crude Oil Production Inched Up

The Energy Information Administration (EIA) reported in its latest Short-Term Energy Outlook (STEO) that the Organization of the Petroleum Exporting Countries (OPEC) is expecting its daily production to increase by 0.2 million barrels in 2017. EIA's forecast in [January](#), expects U.S. crude oil production to respond in early 2017 to the rising oil prices occurring in late 2016. As of February 20, weekly average U.S. Diesel prices fluctuated between \$2.56 and \$2.69 per gallon, throughout the first 8 weeks of 2017. During the week ending February 20, U.S. average diesel fuel prices increased 1 cent from the previous week to \$2.58 per gallon, 59 cents higher than the same week last year.

Snapshots by Sector

Export Sales

For the week ending February 9, **unshipped balances** of wheat, corn, and soybeans totaled 37.1 mmt, up 63 percent from the same time last year. Net weekly **wheat export sales** were .569 mmt, up 8 percent from the previous week. Net **corn export sales** were .784 mmt, down 19 percent from the previous week, and net **soybean export sales** were .890 mmt, up 132 percent from the past week.

Rail

U.S. Class I railroads originated 20,477 **grain carloads** for the week ending February 11, down 20 percent from the previous week, down 9 percent from last year, and down 4 percent from the 3-year average.

Average March shuttle **secondary railcar bids/offers** per car were \$1,181 above tariff for the week ending February 16, up \$515 from last week, and \$1,313 higher than last year. Average non-shuttle secondary railcar bids/offers per car were \$88 above tariff, \$138 higher than last year. There were no non-shuttle bids/offers last week.

Barge

For the week ending February 18, **barge grain movements** totaled 740,704 tons, 9 percent higher than the last week, and up 98 percent from the same period last year.

For the week ending February 18, 476 grain barges **moved down river**, up 14 percent from last week, 888 grain barges were **unloaded in New Orleans**, down 6 percent from the previous week.

Ocean

For the week ending February 16, 43 **ocean-going grain vessels** were loaded in the Gulf, 5 percent more than the same period last year. Sixty-seven vessels are expected to be loaded within the next 10 days, 2 percent more than the same period last year.

For the week ending February 16, the ocean freight rate for shipping bulk grain from the Gulf to Japan was \$35.75 per metric ton, unchanged from the previous week. The cost of shipping from the PNW to Japan was \$18.50 per metric ton, 1 percent more than the previous week.

Feature Article/Calendar

Rail Disruptions in the West

Railroads are an important transportation mode for grain, moving about 29 percent of the total grain tonnage in the United States.¹ Predictable and reliable rail service is therefore a crucial component for agriculture and its customers, both domestically and around the world. Severe weather can negatively affect rail service and, in turn, impinge on the movement of agricultural products to destination markets.

Movements of unusually high amounts of grain carloads with relatively smooth rail service aptly characterizes most of 2016 (see [Grain Transportation Report \(GTR\), dated 12/29/16](#)). However, this winter produced a series of severe weather events, particularly so in recent weeks in the Pacific Northwest (PNW), that has created service outages, congestion, and delays for some railroads and their shippers. Because of the unusually high number of carloads moving, these service issues have the potential to create significant delays and costs for shippers. This article looks at the effects of these recent disruptions on rail service and price spreads to get a sense of their impacts.

Recent Service Disruptions

While not the only destination, the PNW and California ports represent important gathering points for U.S. grains grown in the interior United States for export to Asia. According to USDA's Foreign Agricultural Service, the customs districts in the PNW accounted for 28 percent of all corn, wheat, and soybean exports in 2016, while the districts in California accounted for 2 percent (which includes containerized grain exports).² Railroads help connect grain from inland production regions to the bulk grain export ports of the West Coast, especially in States that are far from an effective waterway alternative to the Gulf.

Two Class I railroads, BNSF and Union Pacific (UP), provide the bulk of the rail service in the western United States. The two railroads together accounted for 56 percent of total U.S. Class I grain carloads in 2016 and naturally hold an even higher market share in their western territories.³ Both railroads have reported a series of service outages and delays due to weather during the past few months. Most of these have been concentrated in the Upper Great Plains, PNW region, northern and central California, northern Nevada, and northwest Utah.

While periodic episodes of severe weather are an unavoidable component of winter, their frequency and severity has been noticeable this year. BNSF and UP first observed weather-related issues in early December, with freezing rain in the PNW and snow drifts along BNSF's northern corridor causing delays for a relatively short time. By mid-January, however, the railroads were reporting problems with severe winter weather on an almost daily basis (see Figure 1 for visuals).

On January 13, for instance, BNSF noted, "Operating conditions have remained extremely harsh across substantial portions of BNSF's Northern Corridor this week, which continues to negatively impact service performance in some areas. ...As we have reported, our operating crews have confronted an unrelenting wave of extreme winter weather, with frigid below-

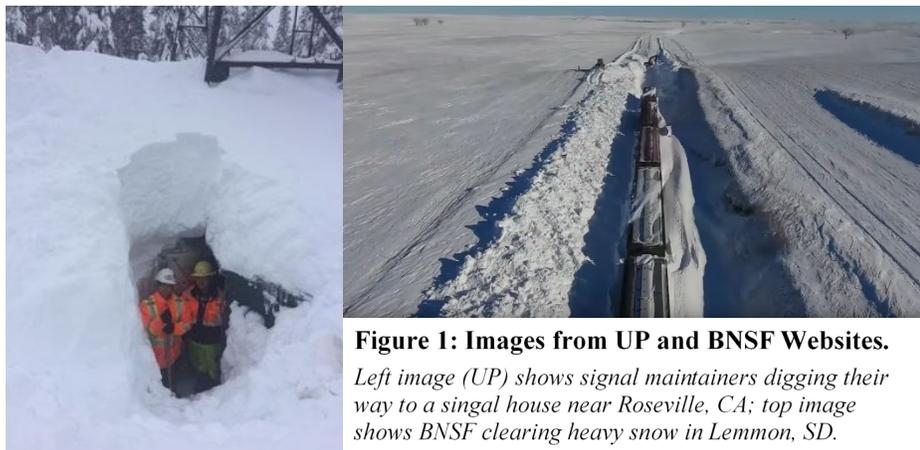


Figure 1: Images from UP and BNSF Websites.

Left image (UP) shows signal maintainers digging their way to a signal house near Roseville, CA; top image shows BNSF clearing heavy snow in Lemmon, SD.

zero temperatures and heavy snowfall impacting many locations across our northern lines."⁴ Next, in a service bulletin dated January 24, UP wrote, "...extensive snowfall, rain and ice have caused washouts, snowslides, rockslides and mudslides, which is affecting service across a widespread area from Portland to Chicago and throughout Central and Northern California. The Pacific Northwest has been hit especially hard, with multiple snow storms continuing to inundate the area—impeding our recovery efforts."⁵

¹ Sparger, Adam, and Nick Marathon, [Transportation of U.S. Grains: A Modal Share Analysis](#), U.S. Dept. of Agriculture, Agricultural Marketing Service, June 2015.

² U.S. Dept. of Agriculture, Foreign Agricultural Service, [Global Agricultural Trade System](#).

³ Association of American Railroads, Weekly Traffic Report.

⁴ BNSF Service Advisory, "BNSF Responds to Ongoing Winter Weather Challenges," January 13, 2017.

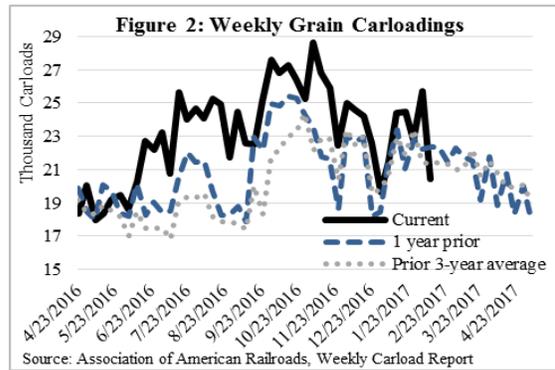
⁵ UP Customer Announcement, "Union Pacific Update From Beth Whited, Exec. Vice President Marketing & Sales," January 24, 2017.

More recently in February, BNSF and UP dealt with repeated bouts of flooding, with the railroads re-routing traffic to minimize the impact. Flooding, blizzards, and avalanches affected rail operations on routes to and in the PNW and California. Railroads have continued to make progress in restoring service.

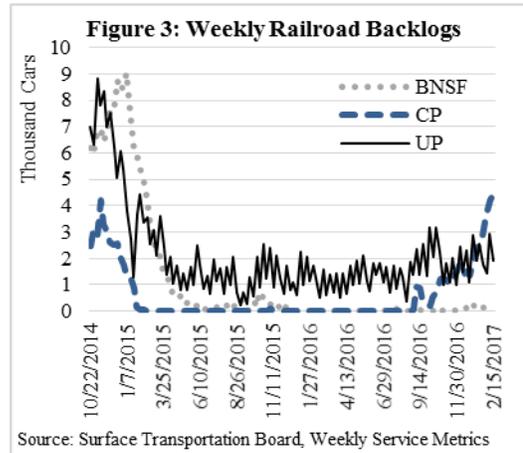
The Effects of Recent Service Disruptions

The sections that follow describe the effects of service disruptions with a review of rail grain carloadings, backlogs, and grain price spreads.

Grain Rail Carloads: Figure 2 shows recent trends of rail carloads of grain. The figure highlights two important facts. First, after May 2016, grain carloads by U.S. Class I railroads were generally well above prior years. This was due to large grain stocks from 2015 and a large 2016 harvest (see [GTR, dated 1/26/17](#)). Second, for the week ending February 11, 2017, carloads dropped 20 percent from the previous week. BNSF’s decline in carloads from the previous week accounted for 85 percent of the decline shown in Figure 2. **GTR Table 4** suggests this is an atypical decline for railroads. Total U.S. grain carloads were 9 percent below the same week last year. Similarly, BNSF was down 26 percent from this time last year. The carloading data suggests the recent severe weather events significantly affected grain carloadings and temporarily upset the recent high carload trend.



Backlog: The effects of weather disruptions also show up in varying degrees in the Canadian Pacific (CP), UP, and BNSF backlogs (outstanding car orders). Figure 3 shows the backlogs for CP, UP, and BNSF have increased in recent months. Between mid-December and mid-February, CP, UP, and BNSF backlogs have increased by 3,005 cars, 470 cars, and 385 cars, respectively. In addition, each railroad’s backlog is above where it was at this time last year. These numbers for BNSF and UP, however, are still well below the backlogs seen at the end of 2014, but CP’s backlog has recently surpassed its 2014 peak. Because CP’s backlog started rising as early as September, there are likely other factors besides weather behind the trend. Nonetheless, the backlog data suggest that recent severe weather has created additional service issues for these railroads.



Grain Price Spreads: Finally, the effects of severe weather also show up in the GTR grain price spread data. **GTR Table 2** provides data on cash prices of certain origin and destination points for grain, including Hard Red Spring wheat cash prices between North Dakota and Portland, OR. In principle, origin and destination prices should be similar, because grain buyers and sellers have an incentive to profit from price differences by buying low and selling high. However, transportation cost is one factor that may prevent them from doing so. Therefore, the spread between origin and destination commodity prices can sometimes provide an indication of a change in transportation costs.

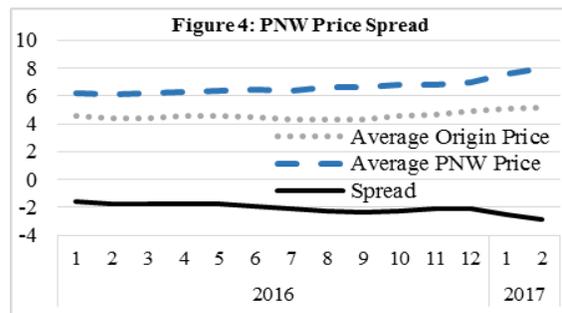


Figure 4 shows the GTR price spread (origin price less destination price for grain) data for the PNW. It shows the spread fell 37 percent between December and January, indicating a widening gap between origin and destination prices. Figure 4 also shows this is due to an increase in PNW cash wheat prices after December. While general weather effects are likely one factor behind changes in the price spread, it is possible it is unique to the single PNW route available in the GTR data. It is also possible that local demand-side factors are pushing up the destination price. However, when combined with the carloading and backlog data, the price spread data likely reflect increased transportation costs to agricultural shippers caused by the recent severe weather events.

Jesse.Gastelle@ams.usda.gov, PeterA.Caffarelli@ams.usda.gov

Rail Transportation

Table 3

Rail Deliveries to Port (carloads)¹

For the Week Ending	Mississippi		Pacific	Atlantic &	Total	Week ending	Cross-Border Mexico ³
	Gulf	Texas Gulf	Northwest	East Gulf			
02/15/2017 ^p	856	1,487	5,375	756	8,474	2/11/2017	2,198
02/08/2017 ^r	844	2,103	6,898	782	10,627	2/4/2017	1,492
2017 YTD ^r	5,927	12,825	42,633	5,590	66,975	2017 YTD	13,971
2016 YTD ^r	4,225	10,508	41,535	5,208	61,476	2016 YTD	10,111
2017 YTD as % of 2016 YTD	140	122	103	107	109	% change YTD	138
Last 4 weeks as % of 2016 ²	119	115	100	99	104	Last 4wks % 2016	110
Last 4 weeks as % of 4-year avg. ²	95	150	117	92	117	Last 4wks % 4 yr	126
Total 2016	36,925	86,992	299,932	28,728	452,577	Total 2016	92,982
Total 2015	29,054	60,819	239,029	26,730	355,632	Total 2015	97,736

¹ Data is incomplete as it is voluntarily provided

² Compared with same 4-weeks in 2016 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 Ferromex.

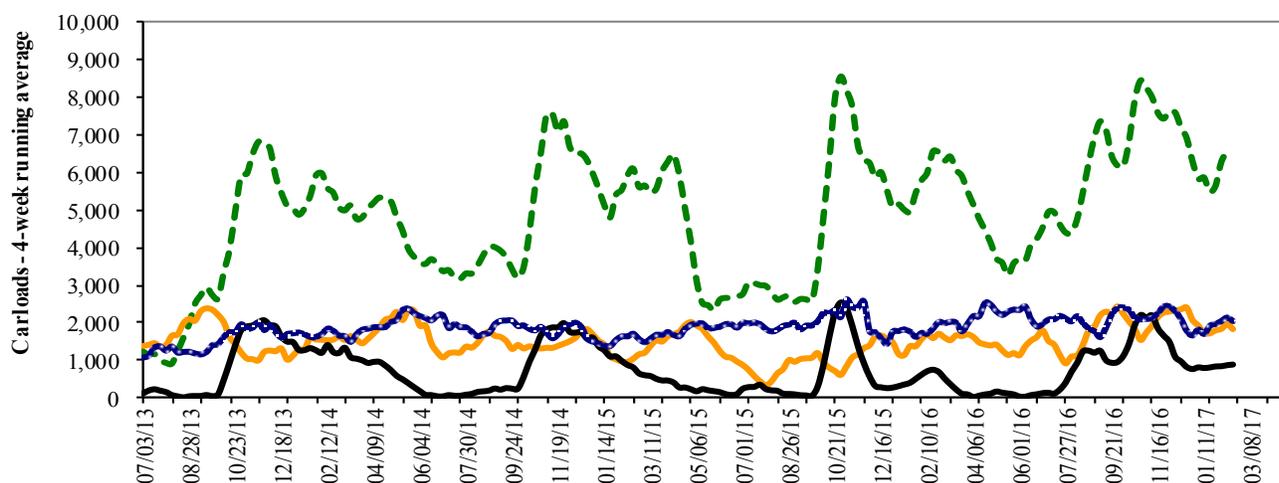
YTD = year-to-date; p = preliminary data; r = revised data; n/a = not available

Source: Transportation & Marketing Programs/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



--- Pacific Northwest: 4 wks. ending 2/15--unchanged from same period last year; up 17% from 4-year average
--- Texas Gulf: 4 wks. ending 2/15--up 15% from same period last year; up 50% from 4-year average
--- Miss. River: 4 wks. ending 2/15--up 19% from same period last year; down 5% from 4-year average
--- Cross-border: 4 wks. ending 2/11--up 10% from same period last year; up 26% from 4-year average

Source: Transportation & Marketing Programs/AMS/USDA

Table 4

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

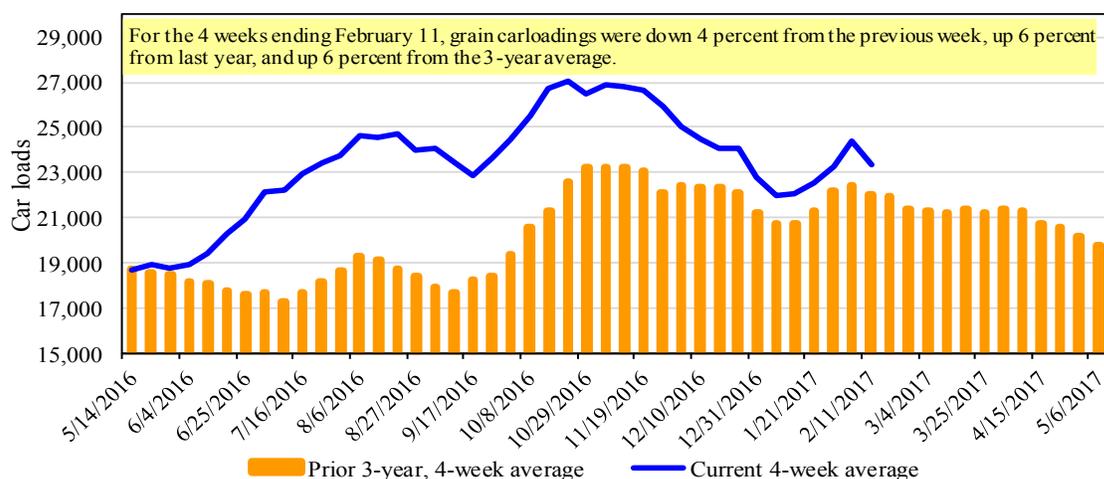
For the week ending: 2/11/2017	East		West			U.S. total	Canada	
	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	2,158	2,792	8,528	877	6,122	20,477	3,889	4,300
This week last year	2,066	2,756	11,479	985	5,095	22,381	3,556	4,854
2017 YTD	12,511	17,916	66,489	6,327	36,126	139,369	22,570	25,152
2016 YTD	12,295	17,156	66,671	5,332	31,764	133,218	20,975	25,879
2017 YTD as % of 2016 YTD	102	104	100	119	114	105	108	97
Last 4 weeks as % of 2016*	107	105	99	144	113	106	112	98
Last 4 weeks as % of 3-yr avg.**	99	101	106	134	107	106	105	95
Total 2016	95,179	150,910	590,779	45,246	300,836	1,182,950	194,016	234,738

*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 Offerings¹ (\$/car)²

For the week ending: 2/16/2017		Delivery period							
		Mar-17	Mar-16	Apr-17	Apr-16	May-17	May-16	Jun-17	Jun-16
BNSF ³	COT grain units	173	no bids	1	no bids	0	no bids	0	no offer
	COT grain single-car ⁵	285	0-1	75	0	24	no bids	11	no offer
UP ⁴	GCAS/Region 1	no bids	no bids	no bids	no bids	no offer	no bids	n/a	n/a
	GCAS/Region 2	10	no bids	no bids	no bids	no offer	no bids	n/a	n/a

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

²Average premium/discount to tariff, last auction

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

⁴UP - GCAS = Grain Car Allocation System

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

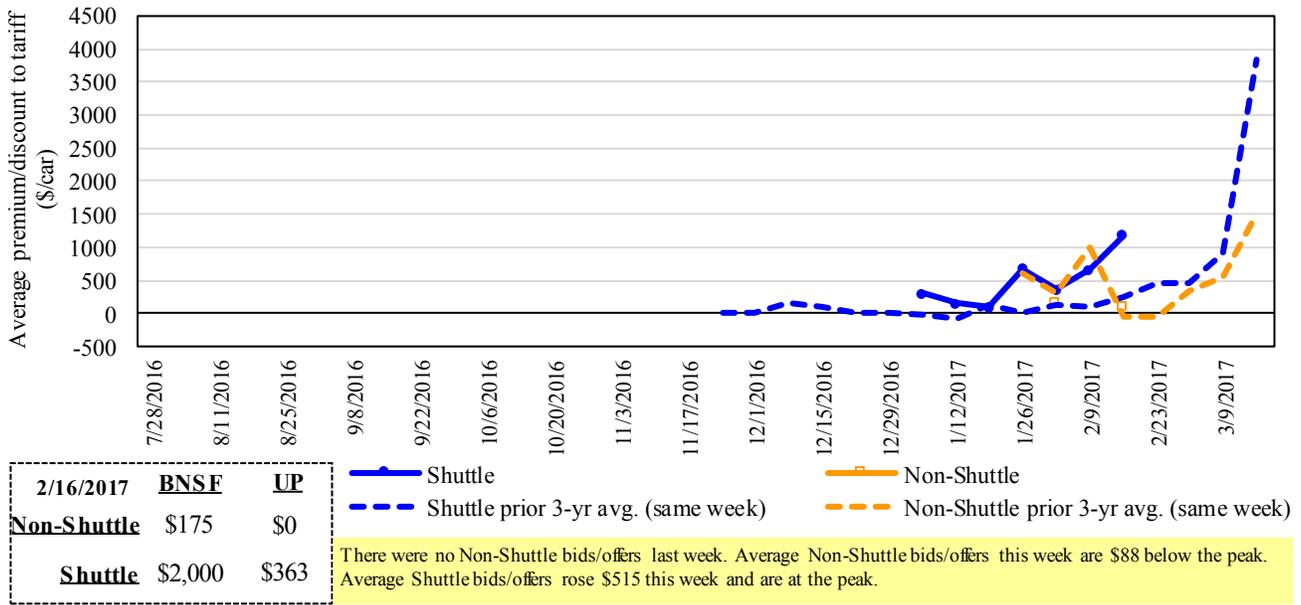
Region 2 includes: CO, IA, KS, MN, NE, WY, and Kansas City and St. Joseph, MO.

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

Source: Transportation & Marketing Programs/AMS/USDA.

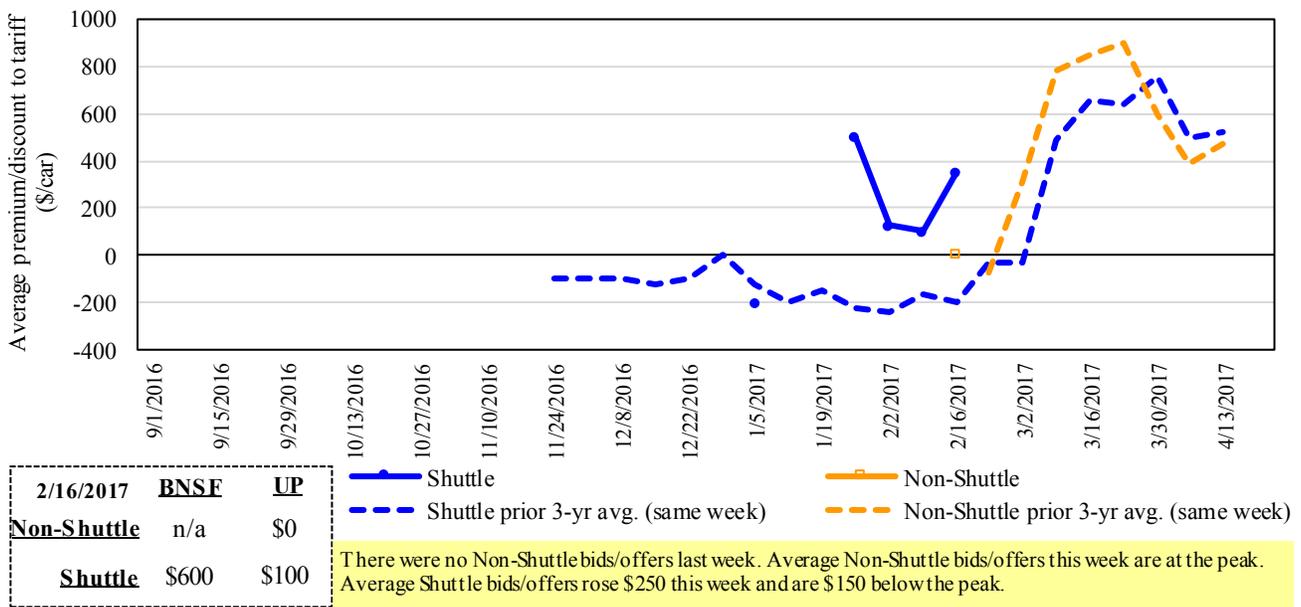
The **secondary rail market** information reflects trade values for service that was originally purchased from the railroad carrier as some form of guaranteed freight. The **auction and secondary rail** values are indicators of rail service quality and demand/supply.

Figure 4
Bids/Offers for Railcars to be Delivered in March 2017, Secondary Market



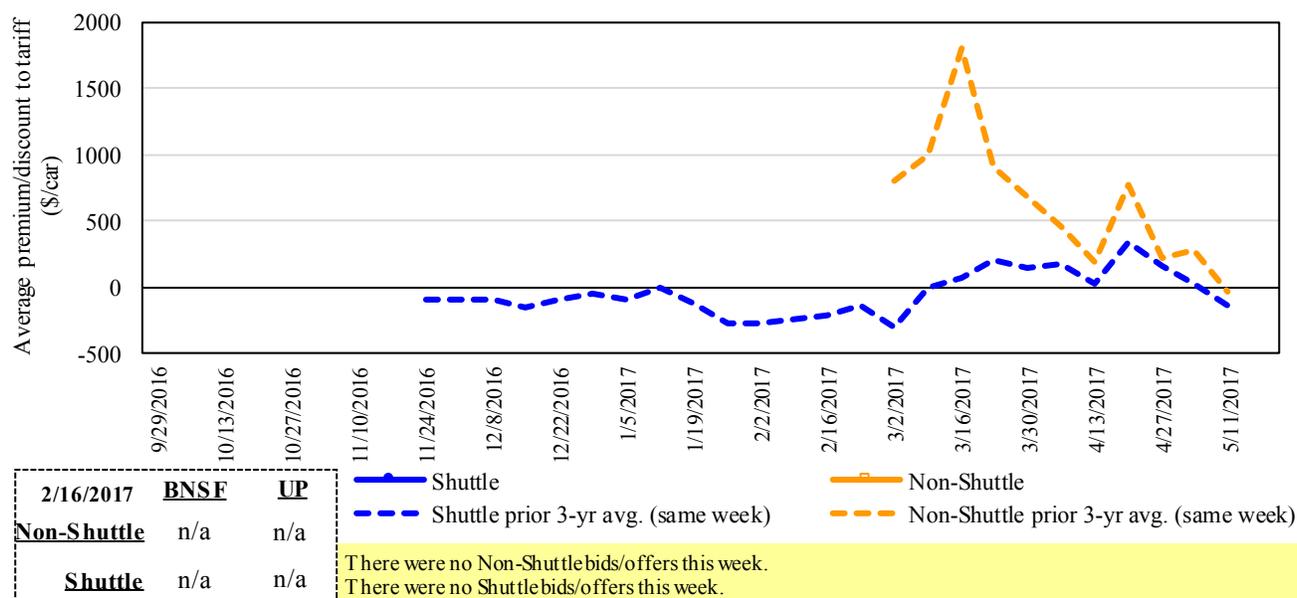
Non-shuttle bids include unit-train and single-car bids. n/a = not available.
 Source: Transportation & Marketing Programs/AMS/USDA

Figure 5
Bids/Offers for Railcars to be Delivered in April 2017, Secondary Market



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

Figure 6
Bids/Offers for Railcars to be Delivered in May 2017, Secondary Market



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

Table 6
Weekly Secondary Railcar Market (\$/car)¹

For the week ending:		Delivery period					
		2/16/2017	Mar-17	Apr-17	May-17	Jun-17	Jul-17
Non-shuttle	BNSF-GF	175	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 2016	200	n/a	n/a	n/a	n/a	n/a
	UP-Pool	0	0	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 2016	75	n/a	n/a	n/a	n/a	n/a
Shuttle	BNSF-GF	2000	600	n/a	n/a	n/a	n/a
	Change from last week	800	500	n/a	n/a	n/a	n/a
	Change from same week 2016	2113	746	n/a	n/a	n/a	n/a
	UP-Pool	363	100	n/a	n/a	n/a	n/a
	Change from last week	230	n/a	n/a	n/a	n/a	n/a
	Change from same week 2016	513	n/a	n/a	n/a	n/a	n/a

¹Average 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

Sources: Transportation and Marketing Programs/AMS/USDA

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

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 Shipments¹

February, 2017	Origin region*	Destination region*	Tariff rate/car	Fuel surcharge per car	Tariff plus surcharge per:		Percent change Y/Y ³
					metric ton	bushel ²	
Unit train							
Wheat	Wichita, KS	St. Louis, MO	\$3,770	\$46	\$37.89	\$1.03	5
	Grand Forks, ND	Duluth-Superior, MN	\$4,143	\$3	\$41.17	\$1.12	17
	Wichita, KS	Los Angeles, CA	\$6,950	\$15	\$69.17	\$1.88	1
	Wichita, KS	New Orleans, LA	\$4,408	\$80	\$44.57	\$1.21	5
	Sioux Falls, SD	Galveston-Houston, TX	\$6,686	\$13	\$66.52	\$1.81	4
	Northwest KS	Galveston-Houston, TX	\$4,676	\$88	\$47.31	\$1.29	4
	Amarillo, TX	Los Angeles, CA	\$4,875	\$122	\$49.62	\$1.35	5
Corn	Champaign-Urbana, IL	New Orleans, LA	\$3,681	\$91	\$37.45	\$0.95	1
	Toledo, OH	Raleigh, NC	\$6,061	\$0	\$60.19	\$1.53	0
	Des Moines, IA	Davenport, IA	\$2,258	\$19	\$22.61	\$0.57	5
	Indianapolis, IN	Atlanta, GA	\$5,191	\$0	\$51.55	\$1.31	4
	Indianapolis, IN	Knoxville, TN	\$4,311	\$0	\$42.81	\$1.09	0
	Des Moines, IA	Little Rock, AR	\$3,534	\$56	\$35.65	\$0.91	3
	Des Moines, IA	Los Angeles, CA	\$5,202	\$164	\$53.29	\$1.35	4
Soybeans	Minneapolis, MN	New Orleans, LA	\$3,639	\$60	\$36.73	\$1.00	-8
	Toledo, OH	Huntsville, AL	\$5,051	\$0	\$50.16	\$1.37	0
	Indianapolis, IN	Raleigh, NC	\$6,178	\$0	\$61.35	\$1.67	0
	Indianapolis, IN	Huntsville, AL	\$4,529	\$0	\$44.98	\$1.22	0
Champaign-Urbana, IL	New Orleans, LA	\$4,495	\$91	\$45.54	\$1.24	3	
Shuttle Train							
Wheat	Great Falls, MT	Portland, OR	\$3,953	\$9	\$39.34	\$1.07	1
	Wichita, KS	Galveston-Houston, TX	\$4,071	\$7	\$40.50	\$1.10	5
	Chicago, IL	Albany, NY	\$5,492	\$0	\$54.54	\$1.48	0
	Grand Forks, ND	Portland, OR	\$5,611	\$15	\$55.87	\$1.52	1
	Grand Forks, ND	Galveston-Houston, TX	\$5,931	\$16	\$59.05	\$1.61	1
	Northwest KS	Portland, OR	\$5,643	\$144	\$57.47	\$1.56	4
Corn	Minneapolis, MN	Portland, OR	\$5,000	\$19	\$49.84	\$1.27	2
	Sioux Falls, SD	Tacoma, WA	\$4,960	\$17	\$49.42	\$1.26	2
	Champaign-Urbana, IL	New Orleans, LA	\$3,481	\$91	\$35.47	\$0.90	1
	Lincoln, NE	Galveston-Houston, TX	\$3,700	\$10	\$36.84	\$0.94	4
	Des Moines, IA	Amarillo, TX	\$3,895	\$71	\$39.38	\$1.00	3
	Minneapolis, MN	Tacoma, WA	\$5,000	\$18	\$49.83	\$1.27	2
	Council Bluffs, IA	Stockton, CA	\$4,740	\$19	\$47.26	\$1.20	4
Soybeans	Sioux Falls, SD	Tacoma, WA	\$5,600	\$17	\$55.78	\$1.52	4
	Minneapolis, MN	Portland, OR	\$5,650	\$19	\$56.29	\$1.53	4
	Fargo, ND	Tacoma, WA	\$5,500	\$15	\$54.77	\$1.49	4
	Council Bluffs, IA	New Orleans, LA	\$4,525	\$104	\$45.97	\$1.25	3
	Toledo, OH	Huntsville, AL	\$4,226	\$0	\$41.97	\$1.14	0
	Grand Island, NE	Portland, OR	\$5,460	\$147	\$55.68	\$1.52	3

¹A unit train refers to shipments of at least 25 cars. Shuttle train rates are available for qualified shipments of 75-120 cars that meet railroad efficiency requirements.

²Approximate load per car = 111 short tons (100.7 metric tons): corn 56 lbs./bu., wheat & soybeans 60 lbs./bu.

³Percentage change year over year calculated using tariff rate plus fuel surcharge

Sources: www.bnsf.com, www.cpr.ca, www.csx.com, www.uprr.com

*Regional economic areas defined by the Bureau of Economic Analysis (BEA)

Table 8

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

Commodity	Origin state	Destination region	Tariff rate/car ¹	Fuel surcharge per car ²	Tariff plus surcharge per:		Percent change ⁴ Y/Y
					metric ton ³	bushel ³	
Date: February, 2017							
Wheat	MT	Chihuahua, CI	\$7,459	\$0	\$76.21	\$2.07	0
	OK	Cuautitlan, EM	\$6,638	\$63	\$68.47	\$1.86	2
	KS	Guadalajara, JA	\$7,180	\$265	\$76.07	\$2.07	5
	TX	Salinas Victoria, NL	\$4,258	\$37	\$43.89	\$1.19	3
Corn	IA	Guadalajara, JA	\$8,187	\$215	\$85.84	\$2.18	-1
	SD	Celaya, GJ	\$7,580	\$0	\$77.45	\$1.97	-3
	NE	Queretaro, QA	\$7,909	\$125	\$82.09	\$2.08	1
	SD	Salinas Victoria, NL	\$6,635	\$0	\$67.79	\$1.72	1
	MO	Tlalnepantla, EM	\$7,293	\$122	\$75.76	\$1.92	2
	SD	Torreon, CU	\$7,180	\$0	\$73.36	\$1.86	-1
Soybeans	MO	Bojay (Tula), HG	\$8,647	\$227	\$90.67	\$2.47	2
	NE	Guadalajara, JA	\$8,942	\$229	\$93.70	\$2.55	-1
	IA	El Castillo, JA	\$8,960	\$0	\$91.55	\$2.49	-5
	KS	Torreon, CU	\$7,489	\$152	\$78.07	\$2.12	2
Sorghum	NE	Celaya, GJ	\$7,164	\$191	\$75.15	\$1.91	-1
	KS	Queretaro, QA	\$7,608	\$78	\$78.53	\$1.99	1
	NE	Salinas Victoria, NL	\$6,213	\$63	\$64.12	\$1.63	1
	NE	Torreon, CU	\$6,607	\$138	\$68.91	\$1.75	0

¹Rates 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.

²Fuel surcharge adjusted to reflect the change in Ferrocarril Mexicano, S.A. de C.V railroad fuel surcharge policy as of 10/01/2009

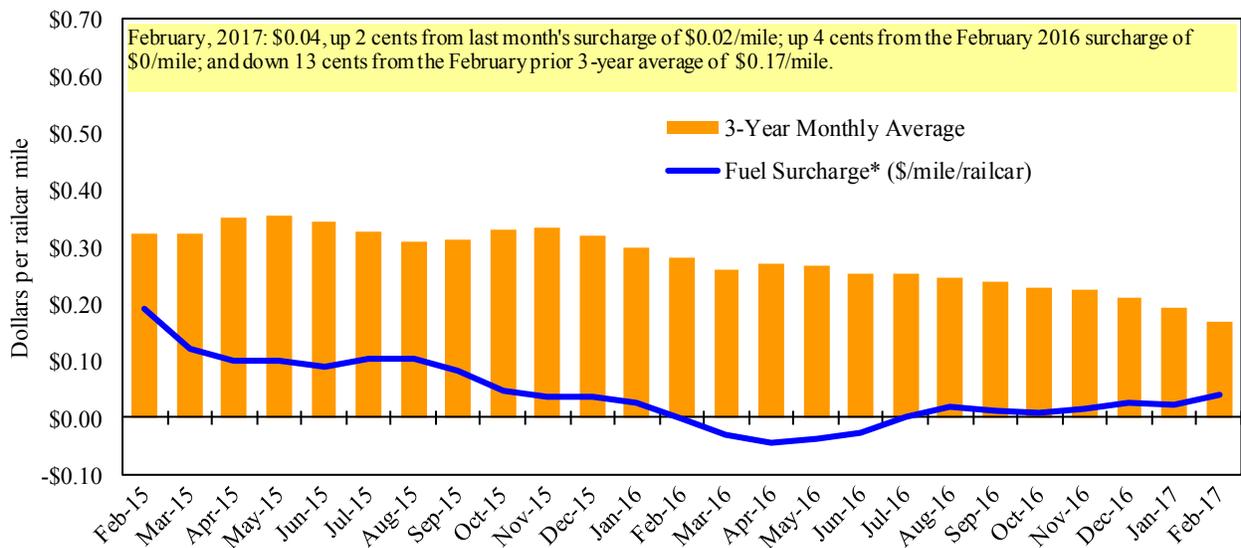
³Approximate load per car = 97.87 metric tons: Corn & Sorghum 56 lbs/bu, Wheat & Soybeans 60 lbs/bu

⁴Percentage change calculated using tariff rate plus fuel surcharge

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

Figure 7

Railroad Fuel Surcharges, North American Weighted Average¹



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.

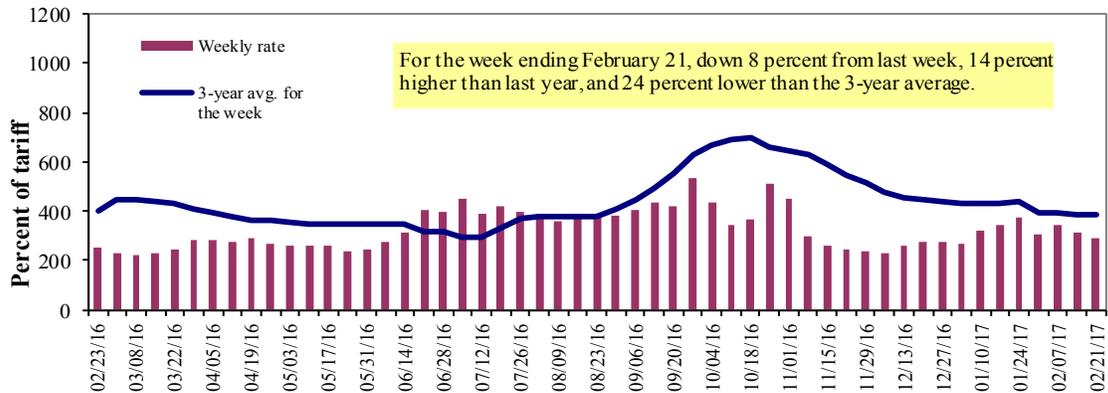
**CSX strike price changed from \$2.00/gal. to \$3.75/gal. starting January 1, 2015.

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}



¹Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); ²4-week moving average of the 3-year average.

Source: Transportation & Marketing Programs/AMS/USDA

Table 9

Weekly Barge Freight Rates: Southbound Only

		Twin Cities	Mid-Mississippi	Lower Illinois River	St. Louis	Cincinnati	Lower Ohio	Cairo-Memphis
Rate¹	2/21/2017	-	-	290	213	213	233	178
	2/14/2017	-	-	315	218	268	268	188
\$/ton	2/21/2017	-	-	13.46	8.50	9.99	9.41	5.59
	2/14/2017	-	-	14.62	8.70	12.57	10.83	5.90
Current week % change from the same week:								
	Last year	-	-	14	23	2	12	4
	3-year avg. ²	-	-	-24	-33	-38	-32	-27
Rate¹	March	-	305	293	208	215	215	173
	May	330	285	278	200	205	205	173

¹Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); ²4-week moving average; ton = 2,000 pounds; - closed for winter or flooding

Source: Transportation & Marketing Programs/AMS/USDA

Figure 9

Benchmark tariff rates

Calculating barge rate per ton:

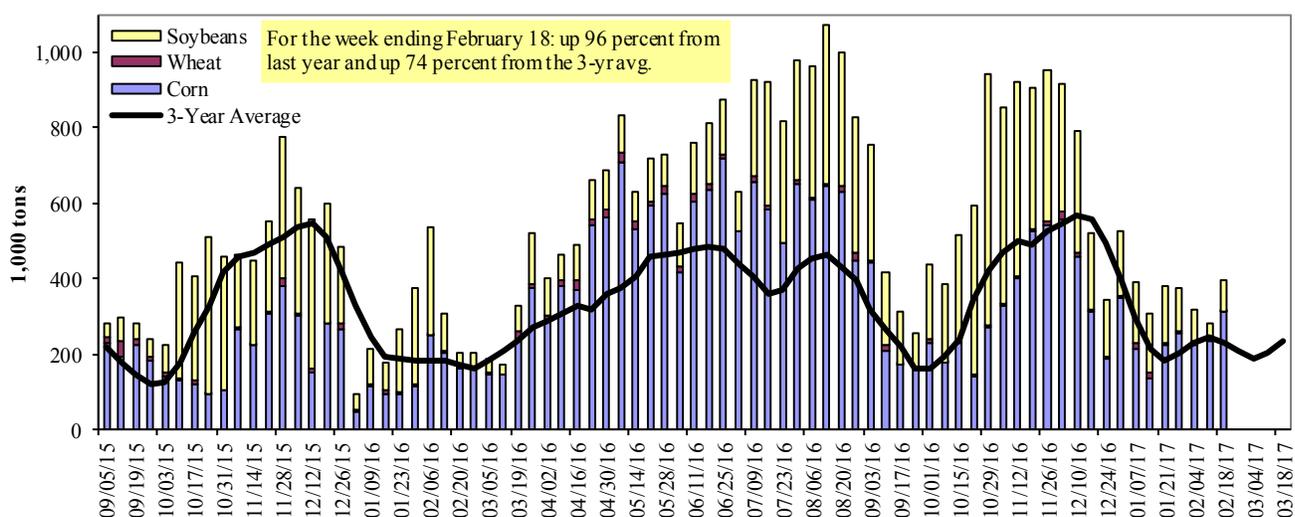
$$(\text{Rate} * 1976 \text{ tariff benchmark rate per ton})/100$$

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 River¹ (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 2/18/2017	Corn	Wheat	Soybeans	Other	Total
Mississippi River					
Rock Island, IL (L15)	0	0	0	0	0
Winfield, MO (L25)	2	0	0	0	2
Alton, IL (L26)	293	2	81	0	376
Granite City, IL (L27)	311	2	84	0	397
Illinois River (L8)	224	2	55	0	280
Ohio River (L52)	145	14	111	0	270
Arkansas River (L1)	1	28	44	0	74
Weekly total - 2017	457	44	240	0	741
Weekly total - 2016	239	16	110	10	374
2017 YTD ¹	2,406	235	2,219	108	4,969
2016 YTD	2,073	119	2,248	23	4,463
2017 as % of 2016 YTD	116	197	99	466	111
Last 4 weeks as % of 2016 ²	115	147	84	249	102
Total 2016	24,136	2,030	16,668	344	43,178

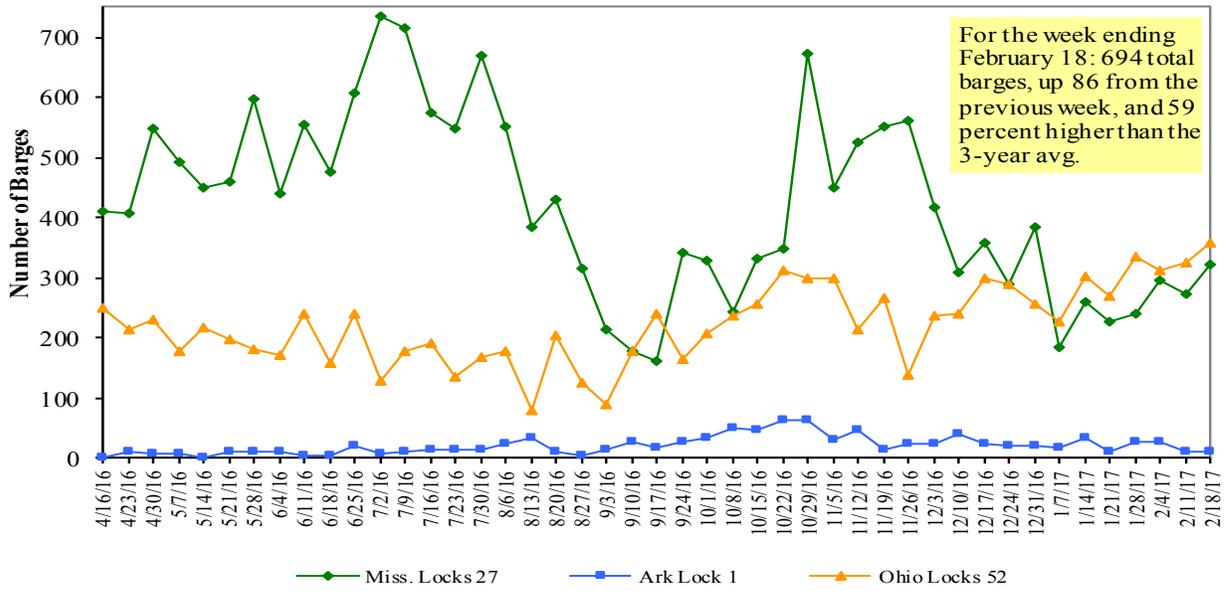
¹ Weekly total, YTD (year-to-date) and calendar year total includes Miss/27, Ohio/52, and Ark/1; "Other" refers to oats, barley, sorghum, and rye.

² As a percent of same period in 2016.

Note: Total may not add exactly, due to rounding

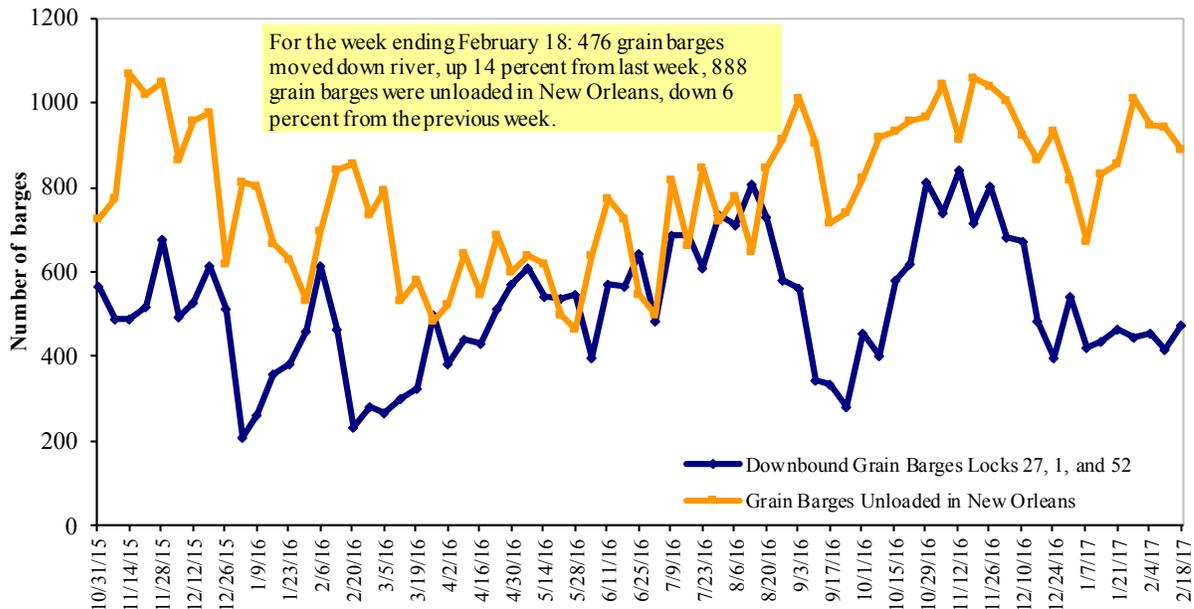
Source: U.S. Army Corps of Engineers

Figure 11
Upbound Empty Barges Transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Locks and Dam 52



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 Prices¹, Week Ending 2/20/2017(US \$/gallon)

Region	Location	Price	Change from	
			Week ago	Year ago
I	East Coast	2.628	0.002	0.569
	New England	2.658	0.032	0.498
	Central Atlantic	2.770	0.005	0.586
	Lower Atlantic	2.521	0.002	0.577
II	Midwest ²	2.495	0.008	0.574
III	Gulf Coast ³	2.433	0.009	0.560
IV	Rocky Mountain	2.548	0.026	0.687
V	West Coast	2.876	0.007	0.695
	West Coast less California	2.767	0.006	0.717
	California	2.966	0.009	0.678
Total	U.S.	2.572	0.007	0.589

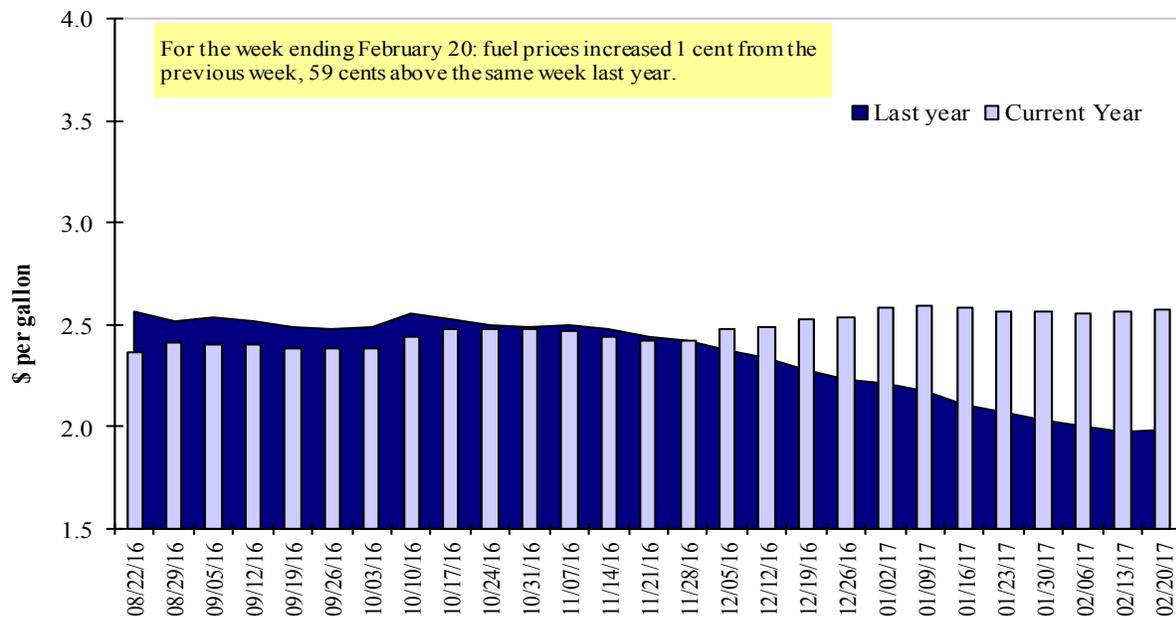
¹Diesel fuel prices include all taxes. Prices represent an average of all types of diesel fuel.

²Same as North Central ³Same as South Central

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)

For the week ending	Wheat						Corn	Soybeans	Total
	HRW	SRW	HRS	SWW	DUR	All wheat			
Export Balances¹									
2/9/2017	2,263	648	2,527	1,435	139	7,011	19,920	10,210	37,140
This week year ago	1,069	470	1,406	823	75	3,842	12,503	6,372	22,717
Cumulative exports-marketing year²									
2016/17 YTD	7,443	1,443	5,048	2,774	265	16,973	22,053	41,529	80,555
2015/16 YTD	3,870	2,366	4,232	2,436	548	13,452	13,178	35,246	61,875
YTD 2016/17 as % of 2015/16	192	61	119	114	48	126	167	118	130
Last 4 wks as % of same period 2015/16	210	135	180	163	184	179	162	175	169
2015/16 Total	5,538	3,057	6,285	3,551	670	19,101	45,564	49,821	114,487
2014/15 Total	7,009	3,654	7,250	3,758	665	22,336	45,205	49,614	117,155

¹ Current unshipped (outstanding) export sales to date

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

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 Importers¹ of U.S. Corn

For the week ending 2/09/2017	Total Commitments ²		% change current MY from last MY	Exports ³ 3-year avg 2013-2015
	2016/17 Current MY	2015/16 Last MY		
	- 1,000 mt -			- 1,000 mt -
Mexico	10,520	9,437	11	11,204
Japan	7,296	4,157	76	11,284
Korea	3,434	711	383	3,931
Colombia	2,815	2,779	1	4,134
Peru	2,068	1,054	96	2,109
Top 5 Importers	26,133	18,138	44	32,662
Total US corn export sales	41,973	25,681	63	46,633
% of Projected	74%	53%		
Change from prior week	784	1,051		
Top 5 importers' share of U.S. corn export sales	62%	71%		70%
USDA forecast, February 2017	56,616	48,295	17	
Corn Use for Ethanol USDA forecast, February 2017	135,890	132,233	3	

(n) indicates negative number.

¹Based on FAS Marketing Year Ranking Reports for 2015/16 - www.fas.usda.gov; Marketing year (MY) = Sep 1 - Aug 31.

²Cumulative Exports (shipped) + Outstanding Sales (unshipped), FAS Weekly Export Sales Report, or Export Sales Query--<http://www.fas.usda.gov/esrquery/>. Total commitments change from prior week could include revisions from previous week's outstanding sales or accumulated sales.

³FAS Marketing Year Ranking Reports - <http://apps.fas.usda.gov/export-sales/myrkaug.htm>; 3-yr average

Table 14

Top 5 Importers¹ of U.S. Soybeans

For the week ending 2/9/2017	Total Commitments ²		% change current MY from last MY	Exports ³ 3-yr avg. 2013-2015
	2016/17 Current MY	2015/16 Last MY		
	- 1,000 mt -			- 1,000 mt -
China	33,776	26,166	29	29,033
Mexico	2,626	2,273	16	3,295
Indonesia	1,259	961	31	2,065
Japan	1,552	1,440	8	1,994
Netherlands	1,029	1,094	(6)	1,644
Top 5 importers	40,242	31,933	26	38,032
Total US soybean export sales	51,738	41,618	24	48,389
% of Projected	93%	79%		
Change from prior week	890	498		
Top 5 importers' share of U.S. soybean export sales	78%	77%		79%
USDA forecast, February 2017	55,858	52,752	6	

(n) indicates negative number.

¹ Based on FAS Marketing Year Ranking Reports for 2015/16 - 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 from prior week could include revisions from previous week's
outstanding sales and/or accumulated sales³ FAS Marketing Year Final Reports - www.fas.usda.gov/export-sales/myfi_rpt.htm. (Carryover plus Accumulated Exports)

Table 15

Top 10 Importers¹ of All U.S. Wheat

For the week ending 2/09/2017	Total Commitments ²		% change current MY from last MY	Exports ³ 3-yr avg 2013-2015
	2016/17 Current MY	2015/16 Last MY		
	- 1,000 mt -			- 1,000 mt -
Japan	2,167	2,045	6	2,743
Mexico	2,571	1,937	33	2,660
Philippines	2,213	1,856	19	2,156
Brazil	1,126	369	205	2,076
Nigeria	1,259	1,366	(8)	1,978
Korea	1,181	1,055	12	1,170
China	1,061	510	108	1,770
Taiwan	889	832	7	1,005
Indonesia	848	426	99	776
Colombia	687	541	27	679
Top 10 importers	14,001	10,936	28	17,013
Total US wheat export sales	23,984	17,293	39	24,485
% of Projected	86%	82%		
Change from prior week	569	254		
Top 10 importers' share of U.S. wheat export sales	58%	63%		69%
USDA forecast, February 2017	27,929	21,117	32	

(n) indicates negative number.

¹ Based on FAS Marketing Year Ranking Reports for 2015/16 - 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 from prior week could include revisions from the previous week's
outstanding and/or accumulated sales³ 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 02/16/17	Previous Week ¹	Current Week as % of Previous	2017 YTD	2016 YTD	2017 YTD as % of 2016 YTD	Last 4-weeks as % of:		2016 Total
							Last Year	Prior 3-yr. avg.	
Pacific Northwest									
Wheat	351	120	293	1,522	1,448	105	138	126	12,325
Corn	194	297	65	1,408	594	237	203	171	12,009
Soybeans	214	290	74	2,216	3,004	74	67	79	14,447
Total	759	707	107	5,145	5,046	102	100	105	38,782
Mississippi Gulf									
Wheat	156	77	203	556	394	141	161	140	3,480
Corn	838	815	103	4,584	3,007	152	170	169	31,420
Soybeans	727	686	106	6,039	5,776	105	108	101	35,278
Total	1,721	1,578	109	11,178	9,178	122	132	126	70,178
Texas Gulf									
Wheat	74	97	77	594	318	187	137	110	6,019
Corn	0	7	0	151	95	158	104	111	1,669
Soybeans	0	0	n/a	0	92	0	0	0	1,105
Total	74	103	71	745	506	147	118	96	8,792
Interior									
Wheat	6	48	13	247	158	156	154	135	1,543
Corn	84	109	77	799	735	109	114	114	7,197
Soybeans	98	101	97	735	587	125	123	115	4,577
Total	188	258	73	1,781	1,480	120	121	117	13,317
Great Lakes									
Wheat	0	0	n/a	0	0	n/a	n/a	0	1,186
Corn	0	0	n/a	0	0	n/a	n/a	n/a	584
Soybeans	0	0	n/a	0	0	n/a	n/a	n/a	910
Total	0	0	n/a	0	0	n/a	n/a	0	2,681
Atlantic									
Wheat	0	0	n/a	36	69	52	91	106	315
Corn	0	0	n/a	0	0	n/a	n/a	0	294
Soybeans	38	76	50	504	551	91	89	89	2,269
Total	38	77	50	540	620	87	90	89	2,878
U.S. total from ports									
Wheat	588	342	172	2,954	2,387	124	142	125	24,867
Corn	1,116	1,228	91	6,941	4,431	157	164	159	53,173
Soybeans	1,077	1,153	93	9,493	10,011	95	94	94	58,587
Total	2,780	2,723	102	19,389	16,829	115	119	116	136,627

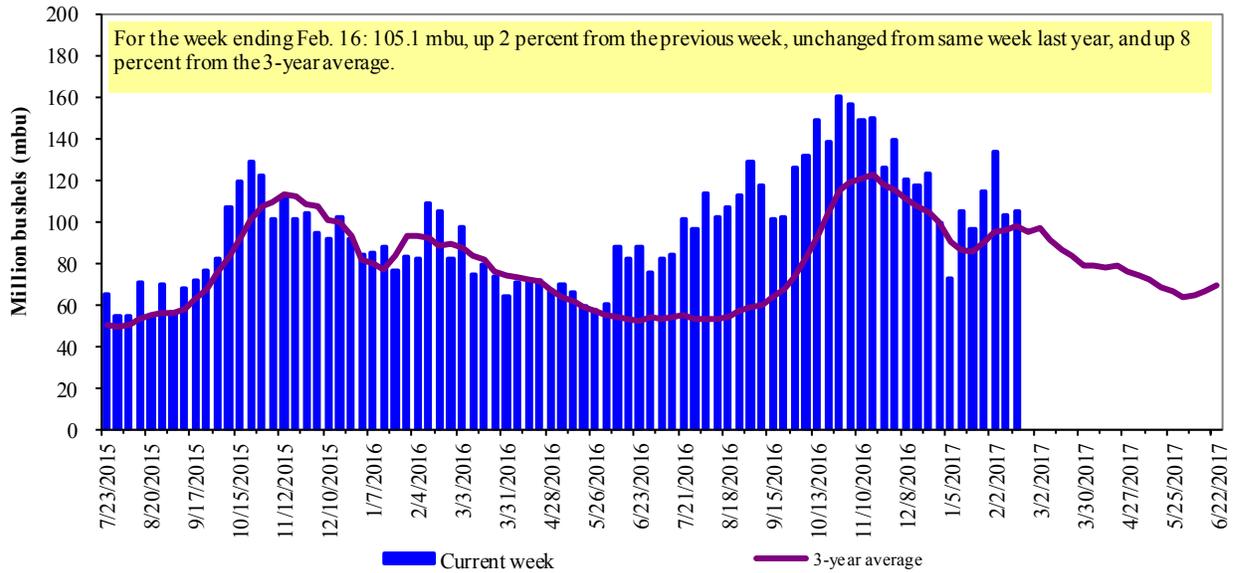
¹ Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

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, 35 percent of U.S.-grown soybeans, and 20 percent of the U.S.-grown corn. Approximately 58 percent of the U.S. export grain shipments departed through the U.S. Gulf region in 2016.

Figure 14

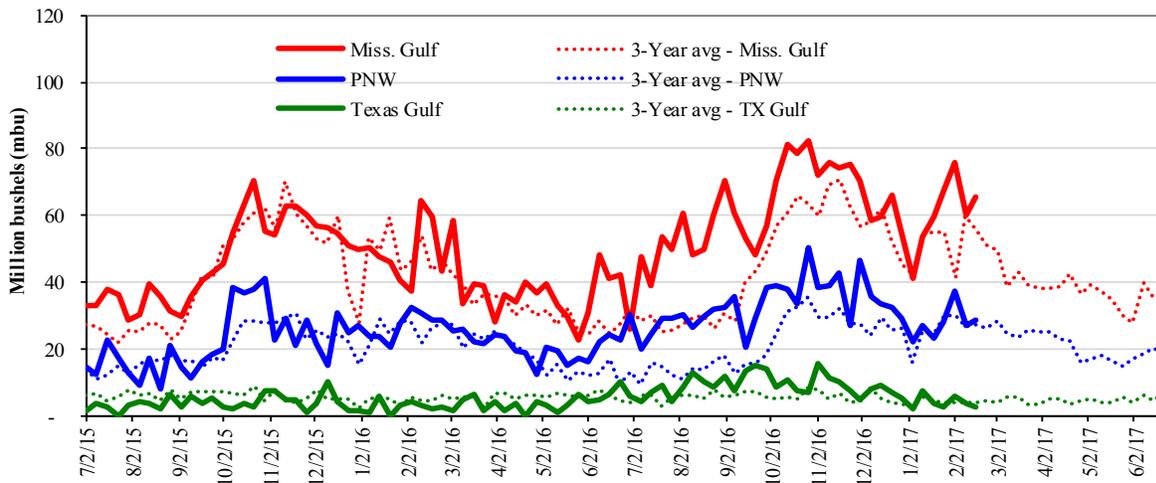
U.S. grain inspected for export (wheat, corn, and soybeans)



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 PNW¹ (wheat, corn, and soybeans)



Week ending 02/16/17 inspections (mbu):		Percent change from:				
Mississippi Gulf:	65.4	Last Week:	MS Gulf	TX Gulf	U.S. Gulf	PNW
PNW:	28.4	Last Year (same week):	up 9	down 29	up 7	up 6
Texas Gulf:	2.7	3-yr avg. (4-wk. mov. Avg):	up 10	up 32	up 11	down 1
			up 24	down 28	up 20	unchanged

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

Ocean Transportation

Table 17

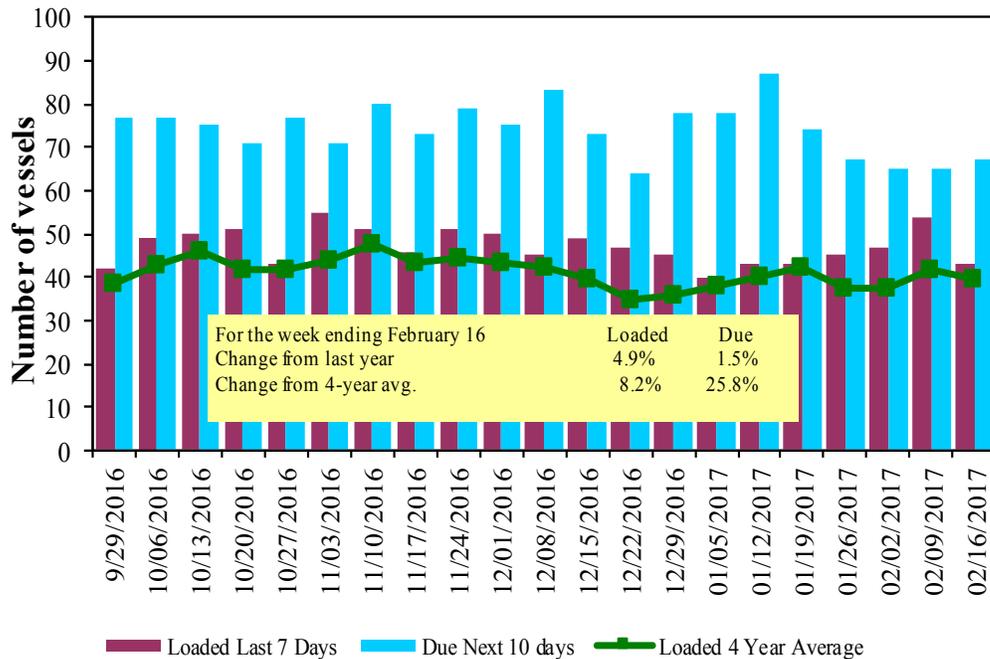
Weekly Port Region Grain Ocean Vessel Activity (number of vessels)

Date	Gulf			Pacific Northwest	Vancouver B.C.
	In port	Loaded 7-days	Due next 10-days	In port	In port
2/16/2017	58	43	67	39	n/a
2/9/2017	58	54	65	38	n/a
2016 range	(21..62)	(27..55)	(40..87)	(6..27)	n/a
2016 avg	43	40	62	15	n/a

Source: Transportation & Marketing Programs/AMS/USDA

Figure 16

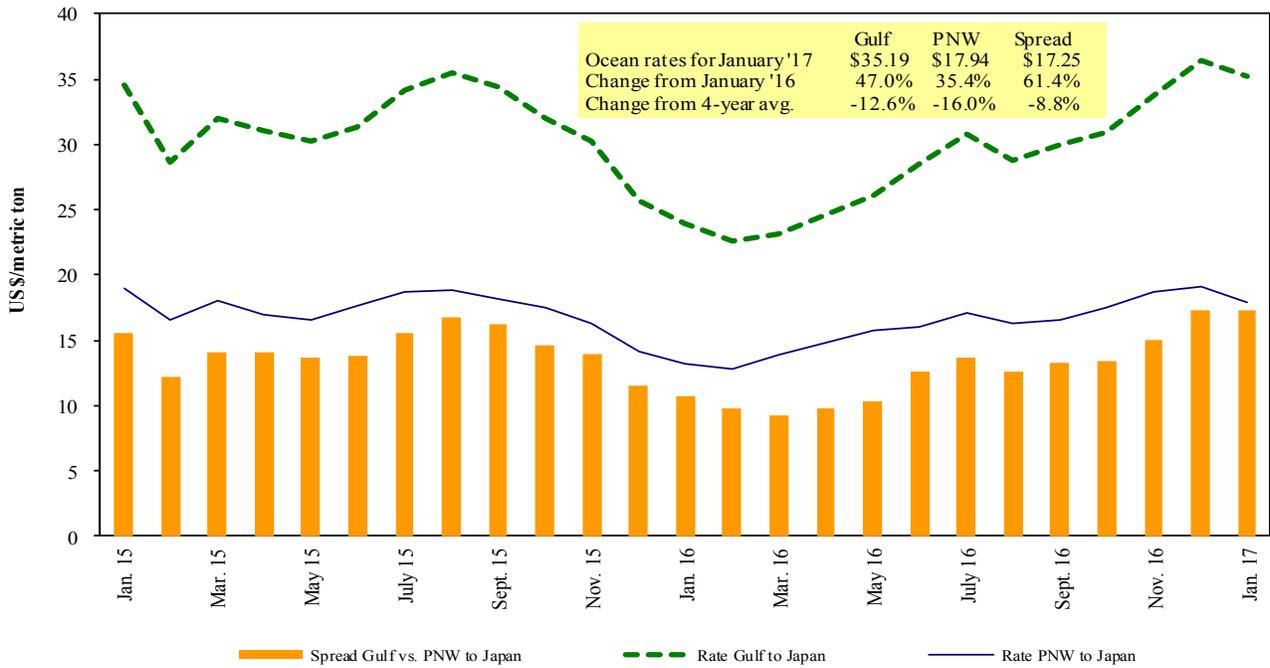
U.S. Gulf Vessel Loading Activity



Source: Transportation & Marketing Programs/AMS/USDA
¹U.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 2/18/2017

Export region	Import region	Grain types	Loading date	Volume loads (metric tons)	Freight rate (US\$/metric ton)
U.S. Gulf	China	Heavy Grain	Feb 15/28	60,000	23.50
U.S. Gulf	China	Heavy Grain	Jan 15/25	55,000	34.00
U.S. Gulf	China	Heavy Grain	Dec 19/24	66,000	33.90
U.S. Gulf	China	Heavy Grain	Dec 15/24	65,000	34.50
U.S. Gulf	China	Heavy Grain	Dec 14/20	53,000	34.00
U.S. Gulf	China	Heavy Grain	Dec 12/20	63,000	36.00
U.S. Gulf	China	Heavy Grain	Dec 10/20	63,000	35.75
U.S. Gulf	Djibouti	Sorghum	Feb 20/28	29,210	53.39*
Vancouver	China	Heavy Grain	Nov 1/10	50,000	31.50
Brazil	China	Heavy Grain	May 1/5	60,000	23.50
Brazil	China	Heavy Grain	Feb 20/28	60,000	25.15
Brazil	China	Heavy Grain	Feb 20/28	60,000	22.50
Brazil	China	Heavy Grain	Feb 8/18	60,000	23.85
Brazil	China	Soybeans	Feb 1/10	60,000	24.20
Brazil	South Korea	Heavy Grain	Mar 15/Apr 15	65,000	23.50
EC S, America	China	Heavy Grain	Feb 1/10	60,000	24.00

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

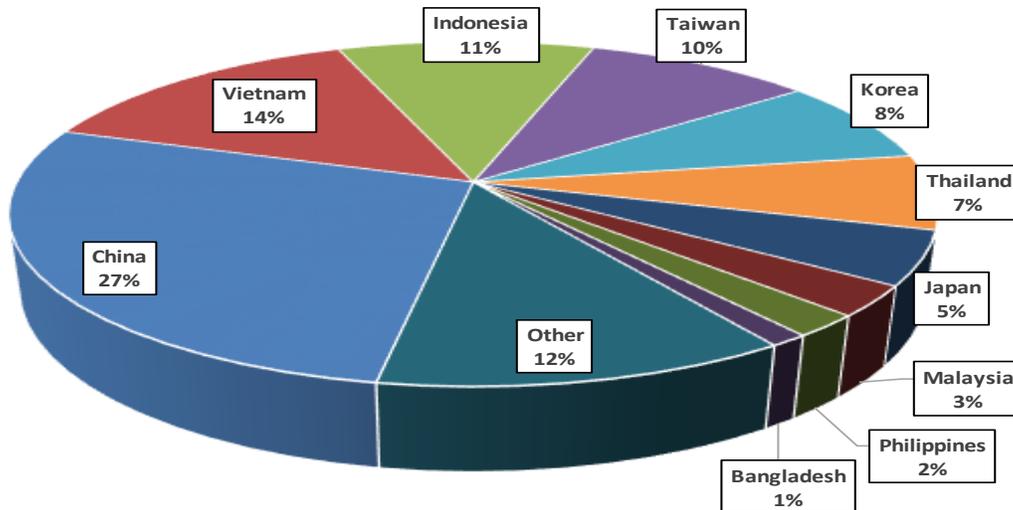
*50 percent of food aid from the United States is required to be shipped on U.S.-flag vessels.

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

In 2015, containers were used to transport 8 percent of total U.S. waterborne grain exports. Approximately 64 percent of U.S. waterborne grain exports in 2015 went to Asia, of which 12 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, January-October 2016

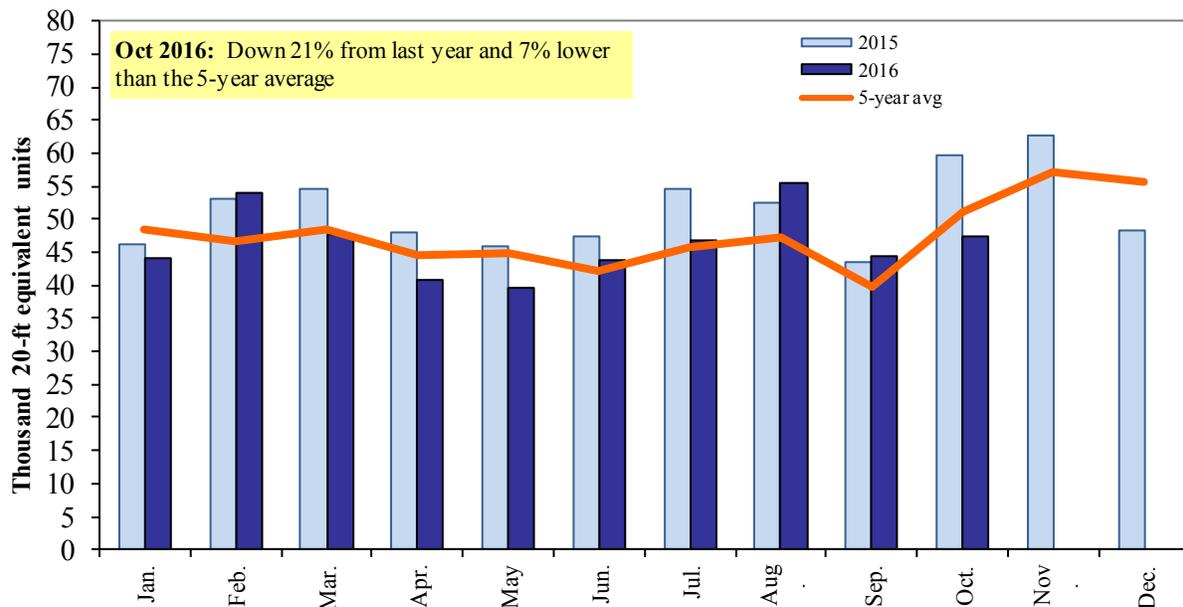


Source: USDA/Agricultural Marketing Service/Transportation Services Division analysis of Port Import Export Reporting Service (PIERS) data

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

Contacts and Links

Coordinators

Surajudeen (Deen) Olowolayemo surajudeen.olowolayemo@ams.usda.gov (202) 720 - 0119
Pierre Bahizi pierre.bahizi@ams.usda.gov (202) 690 - 0992

Weekly Highlight Editors

Surajudeen (Deen) Olowolayemo surajudeen.olowolayemo@ams.usda.gov (202) 720 - 0119
April Taylor april.taylor@ams.usda.gov (202) 720 - 7880
Nicholas Marathon nick.marathon@ams.usda.gov (202) 690 - 4430

Grain Transportation Indicators

Surajudeen (Deen) Olowolayemo surajudeen.olowolayemo@ams.usda.gov (202) 720 - 0119

Rail Transportation

Johnny Hill johnny.hill@ams.usda.gov (202) 690 - 3295
Jesse Gastelle jesse.gastelle@ams.usda.gov (202) 690 - 1144
Peter Caffarelli petera.caffarelli@ams.usda.gov (202) 690 - 3244

Barge Transportation

Nicholas Marathon nick.marathon@ams.usda.gov (202) 690 - 4430
April Taylor april.taylor@ams.usda.gov (202) 720 - 7880
Matt Chang matt.chang@ams.usda.gov (202) 720 - 0299

Truck Transportation

April Taylor april.taylor@ams.usda.gov (202) 720 - 7880
Sergio Sotelo sergioa.sotelo@ams.usda.gov (202) 756 - 2577

Grain Exports

Johnny Hill johnny.hill@ams.usda.gov (202) 690 - 3295

Ocean Transportation

Surajudeen (Deen) Olowolayemo surajudeen.olowolayemo@ams.usda.gov (202) 720 - 0119
(Freight rates and vessels)
April Taylor april.taylor@ams.usda.gov (202) 720 - 7880
(Container movements)

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

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