

Grain Transportation Report

A weekly publication of the Agricultural Marketing Service

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April 6, 2017

WEEKLY HIGHLIGHTS

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Grain Inspections Continue to Fall

For the week ending March 30, **total inspections of grain** (corn, wheat, and soybeans) for export from major U.S. export regions reached 2.62 million metric tons (mmt), down 3 percent from the previous week, but up 39 percent from the same time last year, and 23 percent above the 3-year average. Corn inspections decreased 6 percent from the past week, while wheat and soybeans increased 3 and 1 percent respectively from the previous week. Pacific Northwest (PNW) inspections decreased 9 percent from the previous week, and Mississippi Gulf inspections increased 3 percent. Outstanding export sales (unshipped) decreased for corn, wheat, and soybeans.

Ocean Freight Rates Inched Up

Ocean freight rates increased in March. The rates for shipping grains from the U.S. Gulf to Japan, at \$38.35 per metric ton (mt), increased 7 percent from February. The rates from the Pacific Northwest (PNW) to Japan, at \$20.75 per mt, increased 13 percent over the month. According to March 30 *Transportation Report* by O'Neil Commodity Consulting, increased demand for coal and iron ore/steel due to "restocking" caused the uptick in the rates.

High Water Slows Navigation on the Upper Mississippi and Illinois Rivers

Recent rain events in the Midwest have raised Mississippi and Illinois River levels to high water conditions. Parts of the Illinois River are at flood stage resulting in reduced tow sizes and slower transit times. The Mississippi River at St. Louis is expected to crest at 27.3 feet on April 9. This will exceed the 25 foot trigger reading, which limits down-bound barge traffic through St. Louis to daylight only, reduces tow sizes, and implements minimum horsepower requirements for towboats. River restrictions are set by the Waterway Action Plan (WAP), a joint effort of the U.S. Coast Guard, U.S. Army Corps of Engineers, and senior leaders of the towing industry. The overall goal of the WAP is to ensure safety of life and navigation, protection of infrastructure and property, and prevention of marine casualties.

Ocean Container Carriers Form New Alliance Structure

As of April 1, the ocean container carrier alliance structure was reorganized from 4 alliances to 3. The new structure will bring larger vessels, fewer port calls, and changing origin/destination port calls. For the transpacific trade lanes, the first vessels under the new structure left Asia on April 2 and will arrive in the United States approximately 10 days later. The trade media has reported a surge in cargo movements ahead of the April 1 deadline to avoid any possible disruptions from the changing dynamics. The agricultural export community is concerned the newly formed alliances and their use of larger vessels will reduce voyage options as well as cause terminal and landside congestion.

Snapshots by Sector

Export Sales

For the week ending March 23, **unshipped balances** of wheat, corn, and soybeans totaled 30.9 mmt, up 57 percent from the same time last year. Net weekly **wheat export sales** were .464 mmt, up 11 percent from the previous week. Net **corn export sales** were .717 mmt, down 47 percent from the previous week, and net **soybean export sales** were .681 mmt, up 29 percent from the past week.

Rail

U.S. Class I railroads originated 23,312 **grain carloads** for the week ending March 25, unchanged from the previous week, up 22 percent from last year, and up 13 percent from the 3-year average.

Average April shuttle **secondary railcar** bids/offers per car were \$321 below tariff for the week ending March 30, down \$540 from last week, and \$104 lower than last year. Average secondary non-shuttle railcar bids/offers per car were \$38 below tariff, down \$13 from last week, and \$38 lower than last year.

Barge

For the week ending April 1, **barge grain movements** totaled 850,682 tons, 20 percent lower than the last week, and up 39 percent from the same period last year.

For the week ending April 1, 535 grain barges **moved down river**, down 20 percent from last week, 840 grain barges were **unloaded in New Orleans**, up 6 percent from the previous week.

Ocean

For the week ending March 30, 50 **ocean-going grain vessels** were loaded in the Gulf, 52 percent more than the same period last year. Fifty-three vessels are expected to be loaded within the next 10 days, 13 percent more than the same period last year.

For the week ending March 30, the ocean freight rate for shipping bulk grain from the Gulf to Japan was \$39.00 per metric ton, 3 percent more than the previous week. The cost of shipping from the PNW to Japan was \$21.25 per metric ton, 4 percent more than the previous week.

Fuel

During the week ending April 3, average **diesel fuel prices** increased 3 cents from previous week at \$2.56 per gallon, 44 cents higher than the same week last year.

2017 March Grain Stocks and Prospective Plantings

Grain storage gives farmers the flexibility to determine when to sell their crops. With available storage, grain transportation is less tied to the harvest schedule, as farmers and shippers are able to wait and attempt to capture better prices. Grain stocks in storage follow a basic pattern throughout the year, peaking during the corn and soybeans harvests in the fall, gradually diminishing during winter and spring, and nearly emptying-out during the summer before the next fall harvest. Deviations from this pattern provide some explanation of observed transportation patterns as well as an indication of transportation demand to come. This article discusses the March 1 grain stocks data at the National and State level to better understand recent and near-future transportation demand. The article concludes by discussing USDA's *Prospective Plantings* report and the outlook for the 2017 marketing year.

March 1 Grain Stocks: National and State-Levels

USDA's National Agricultural Statistics Service (NASS) provides a quarterly glimpse of the amount of grain in storage (i.e., "stocks"), both off-farm and on-farm. The four points in time reported by NASS are: March 1, June 1, September 1, and December 1, with each snapshot offering different insights into transportation patterns. For example, as noted in a previous *Grain Transportation Report (GTR)* feature article, "December 1" grain stocks give an indication of the "total grain supply" available for export and use during the marketing year, since the date directly follows the corn and soybean harvests.¹ The subsequent quarters, "March 1" and "June 1," are then views of how much grain remains in storage as the marketing year progresses.

Last week, NASS released data on grain stocks as of March 1, 2017.² Total March 1 grain stocks (including corn, soybeans, wheat, barley, grain sorghum, and oats) were 12.4 billion bushels (bbu) in 2017, up 11 percent from last year, and 20 percent higher than the 3-year average. March 1 grain stocks have increased every year since 2013. Corn accounted for 70 percent of the total March stocks this year, followed by soybeans (14 percent), wheat (13 percent), and other grains (3 percent). High grain stocks suggest that more grain is present in the system, which could contribute to higher transportation demand over the next few months.

One important factor behind the high March grain stocks was the record grain harvest in 2016 (see October 6, 2016 *GTR*). The high production has resulted in both high March grain stocks and high 2017 year-to-date rail and barge movements (see March 23, 2017 *GTR*). As of the week ending March 25, year-to-date rail grain car loadings were 6 percent above last year, and barge grain movements were 28 percent above last year. The high March grain stocks indicate that these trends in transportation demand are likely to continue for the next few months, barring any significant changes in other factors, like grain basis. Furthermore, it is worth mentioning that stocks held "on-farm" are 6.0 bbu across the Nation, 17 percent higher than the 3-year average. High on-farm stocks indicate that considerable volumes may yet enter the supply chain and the transportation system.

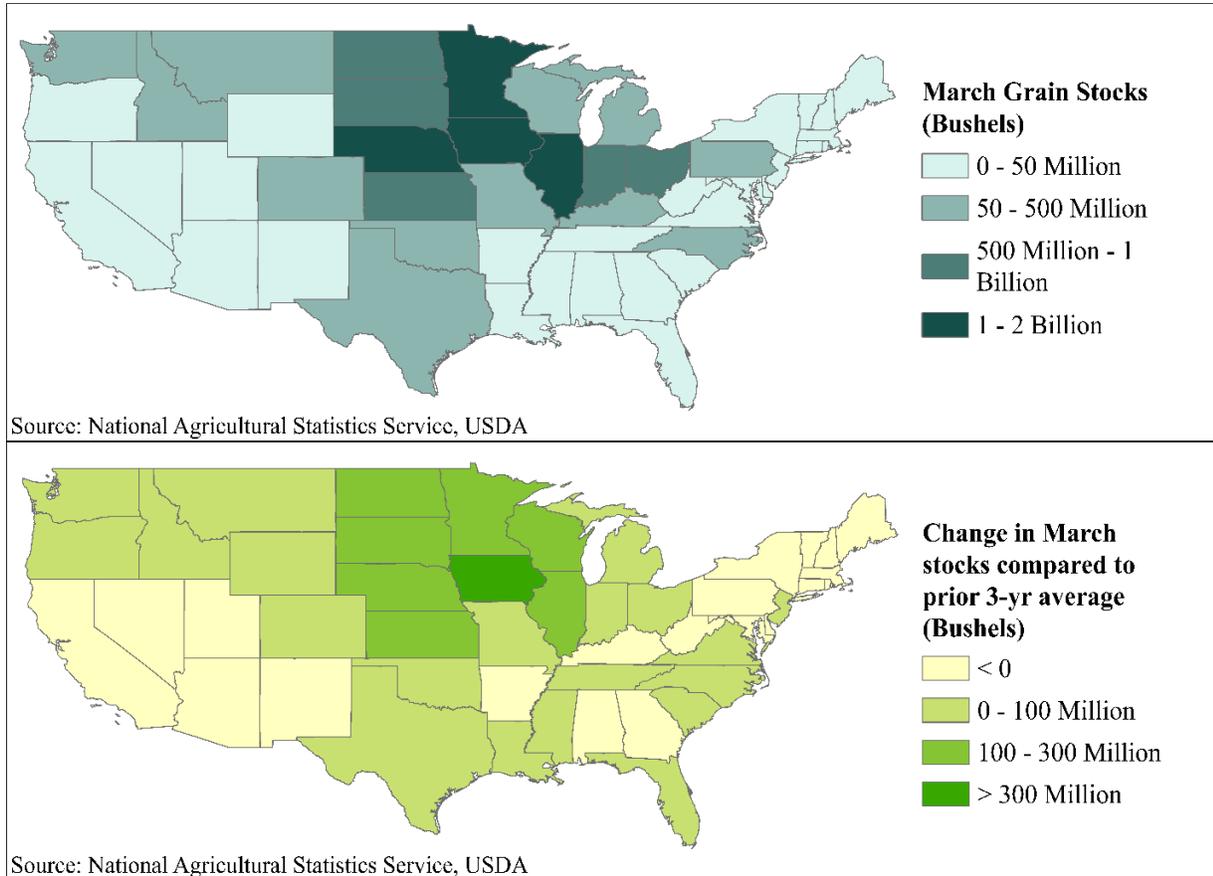
The grain stocks data also show where stocks are held, providing some indication of where grain transportation demand will be the highest. States with the largest grain stocks tend to be those with major harvests. Figure 1 shows that this year, Iowa, Illinois, Minnesota, and Nebraska each had over 1.0 bbu in stocks as of March 1, with five more States (Kansas, Indiana, South Dakota, North Dakota, and Ohio) having at least 0.5 bbu of grain held in storage. In addition, Iowa saw the largest increase in grain stocks compared to the prior 3-year March 1 average. Compared to the same period, grain stocks in Minnesota,

¹ USDA Agricultural Marketing Service, [Grain Transportation Report, January 26, 2017](#).

² USDA National Agricultural Statistics Service, [Grain Stocks](#), March 31, 2017.

Kansas, Nebraska, North Dakota, Illinois, South Dakota, and Wisconsin increased between 100 and 300 million bushels.

FIGURE 1: MARCH 1 GRAIN STOCKS AND CHANGES IN STOCKS BY STATE.



Prospective Plantings

The grain stocks data is particularly relevant to the demand for grain transportation in the near-term, over roughly the next 3 to 6 months or so. NASS also provided information last week that gives an indication of the need for transportation in the new 2017-marketing years, which begin June 1 for small grains (e.g., wheat) and September 1 for corn and soybeans. NASS’ *Prospective Plantings* summarizes farmers’ intended plantings in 2017 for several commodities, including grains, oilseeds, hay, cotton, and several other commodities.¹ Notably, farmers report intentions to plant a record 89.5 million acres of soybeans in the United States, up 7 percent from 2016. NASS noted that the planted acreage intentions for soybeans are up or unchanged in 27 of the 31 estimated States. However, prospective plantings are down 4 percent for corn and 8 percent for wheat nationally in 2017. The downward decline in prospective corn and wheat acreage is likely due to the lower expected returns for corn and wheat as compared to soybeans. Despite an overall fall, some States, such as Kansas and New York, may see an increase in corn plantings, according to the report.

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¹ USDA National Agricultural Statistics Service, [Prospective Plantings](#), March 31, 2017.

Grain Transportation Indicators

Table 1

Grain Transport Cost Indicators¹

For the week ending	Truck	Rail		Barge	Ocean		
		Unit	Train	Shuttle		Gulf	Pacific
04/05/17	172	261		197	142	174	151
03/29/17	170	261		220	142	170	145

¹Indicator: 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 Programs/AMS/USDA

Table 2

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

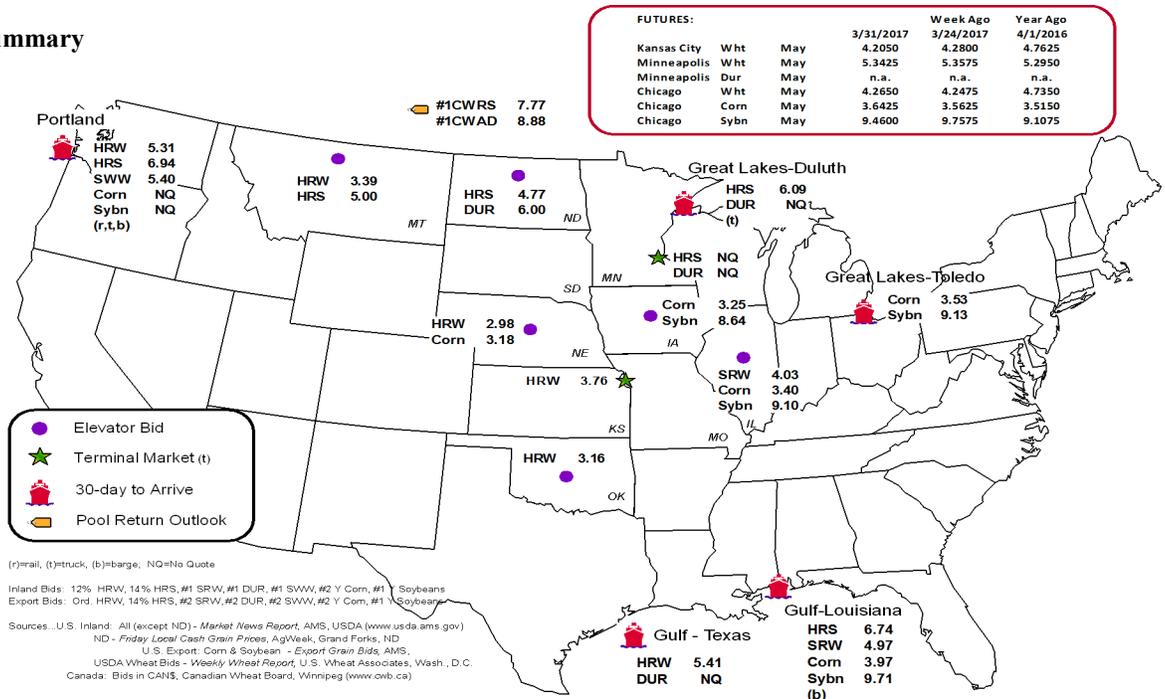
Commodity	Origin--Destination	3/31/2017	3/24/2017
Corn	IL--Gulf	-0.57	-0.62
Corn	NE--Gulf	-0.79	-0.84
Soybean	IA--Gulf	-1.07	-1.12
HRW	KS--Gulf	-1.65	-1.60
HRS	ND--Portland	-2.17	-2.25

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

Source: Transportation & Marketing Programs/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		Pacific	Atlantic &	Total	Week ending	Cross-Border
	Gulf	Texas Gulf	Northwest	East Gulf			Mexico ³
03/29/2017 ^p	1,093	1,509	6,464	438	9,504	3/25/2017	1,859
03/22/2017 ^r	1,167	2,346	4,698	580	8,791	3/18/2017	2,100
2017 YTD ^r	11,684	25,590	81,007	8,475	126,756	2017 YTD	26,287
2016 YTD ^r	5,108	20,398	75,873	7,670	109,049	2016 YTD	24,109
2017 YTD as % of 2016 YTD	229	125	107	110	116	% change YTD	109
Last 4 weeks as % of 2016 ²	1,327	121	114	131	129	Last 4wks % 2016	103
Last 4 weeks as % of 4-year avg. ²	281	136	122	101	131	Last 4wks % 4 yr	120
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.

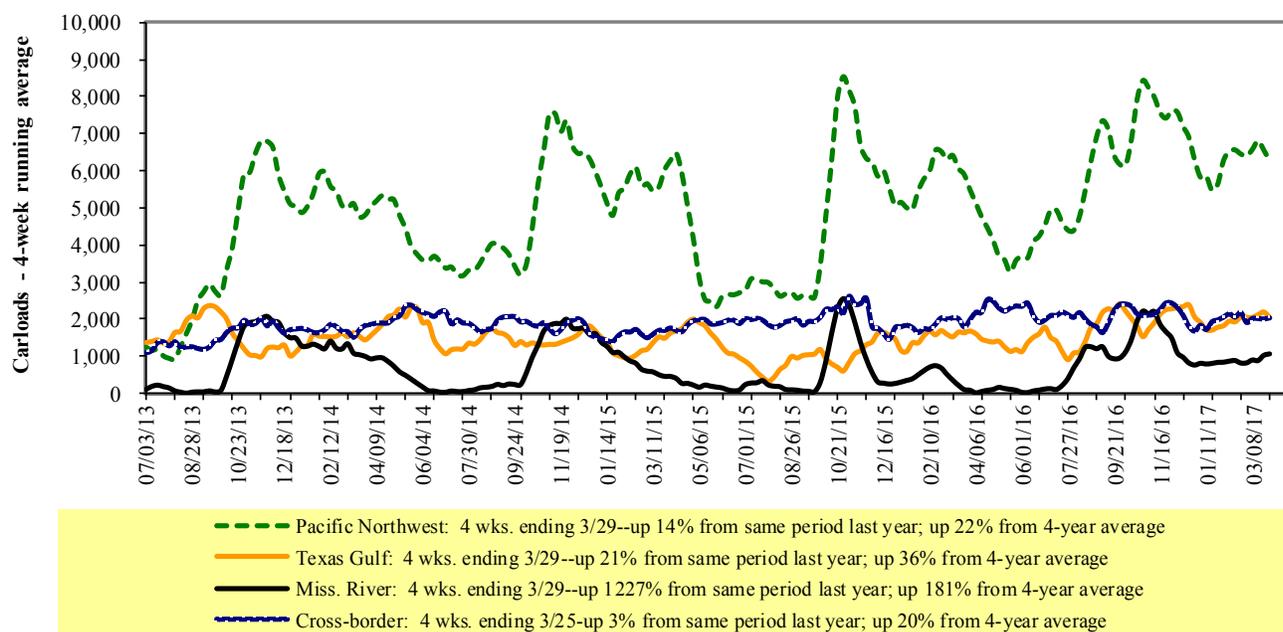
YTD = year-to-date; p = preliminary data; r = revised data; n/a = not available

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



Source: Transportation & Marketing Programs/AMS/USDA

Table 4

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

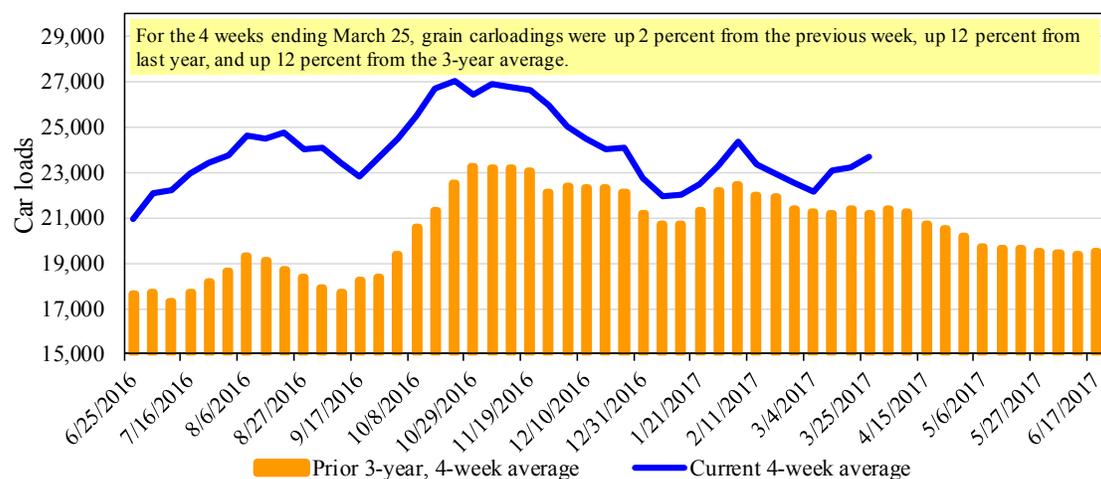
For the week ending: 3/25/2017	East		West			U.S. total	Canada	
	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	1,545	3,298	11,823	883	5,763	23,312	3,891	4,089
This week last year	1,404	1,963	10,167	585	5,025	19,144	3,286	4,772
2017 YTD	23,220	34,038	134,422	12,068	74,533	278,281	46,621	49,747
2016 YTD	23,155	33,119	131,930	10,311	63,314	261,829	40,557	52,350
2017 YTD as % of 2016 YTD	100	103	102	117	118	106	115	95
Last 4 weeks as % of 2016*	96	114	106	118	127	112	129	94
Last 4 weeks as % of 3-yr avg.**	90	100	113	113	122	112	110	95
Total 2016	95,179	150,919	590,779	45,246	300,836	1,182,959	193,982	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: 3/30/2017		<u>Delivery period</u>							
		Apr-17	Apr-16	May-17	May-16	Jun-17	Jun-16	Jul-17	Jul-16
BNSF ³	COT grain units	no bids	no bids	no bids	no bids	no bids	no bids	no bids	no bids
	COT grain single-car ⁵	0	0	3	no bids	3	no bids	3	no bids
UP ⁴	GCAS/Region 1	no bids	no bids	no bids	no bids	no bids	no bids	n/a	n/a
	GCAS/Region 2	no bids	no bids	no bids	no bids	no bids	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.

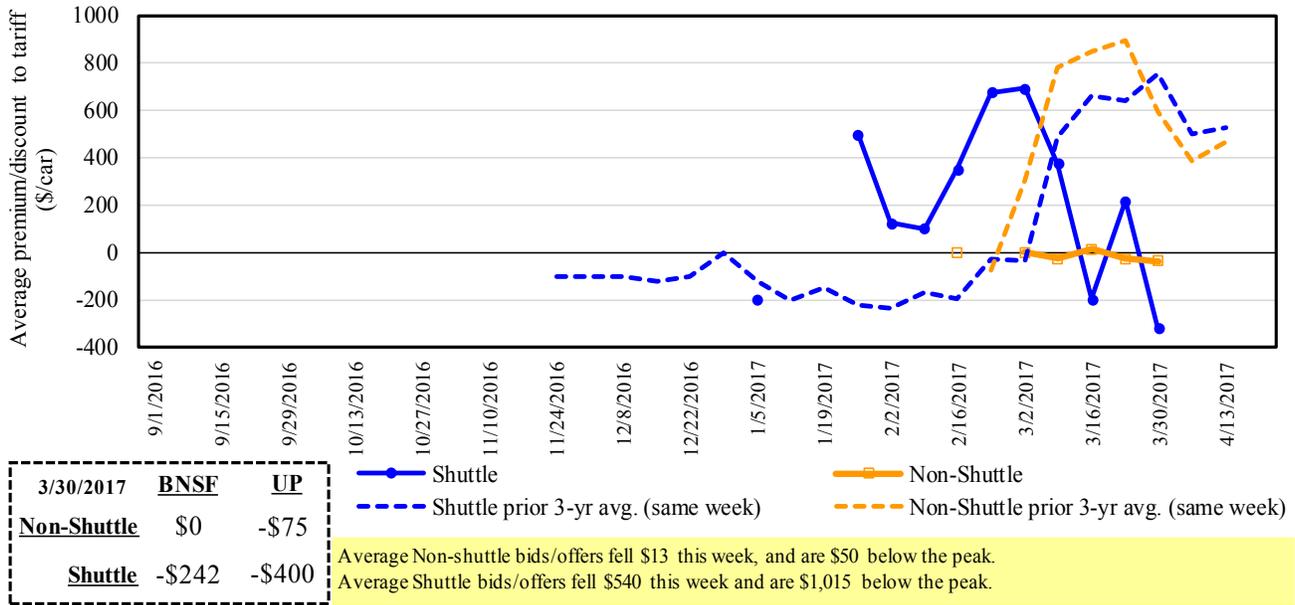
Region 2 includes: CO, IA, KS, MN, NE, WY, and Kansas City and St. Joseph, MO.

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

Source: Transportation & Marketing Programs/AMS/USDA.

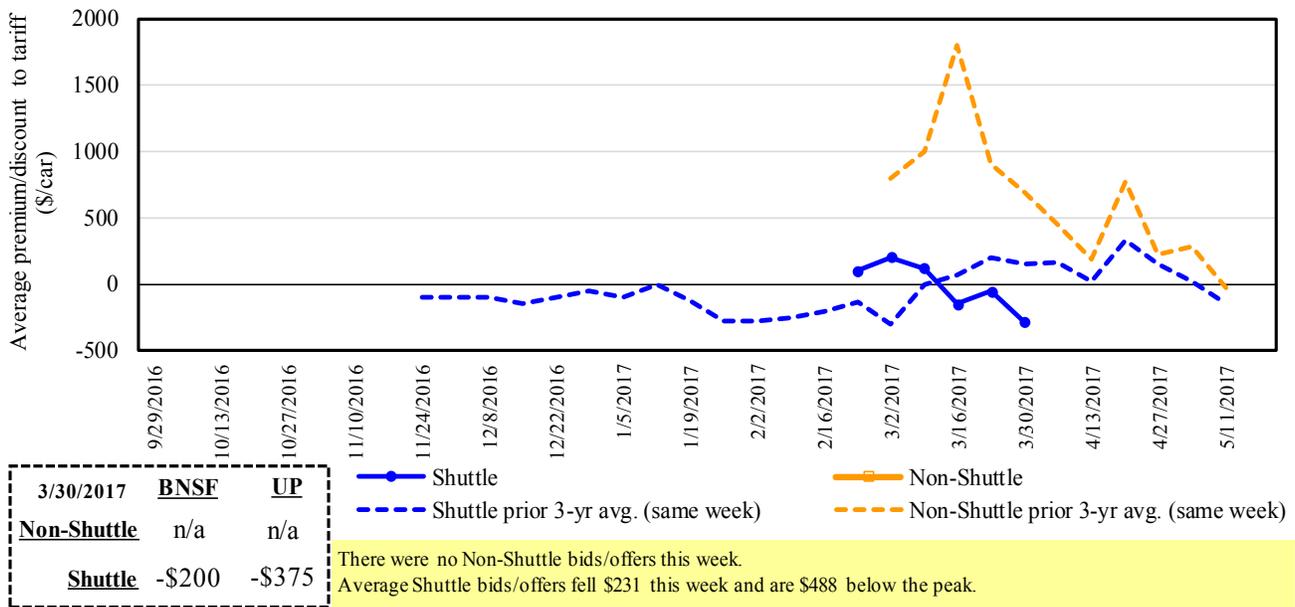
The **secondary rail market** information reflects trade values for service that was originally purchased from the railroad carrier as some form of guaranteed freight. The **auction and secondary rail** values are indicators of rail service quality and demand/supply.

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



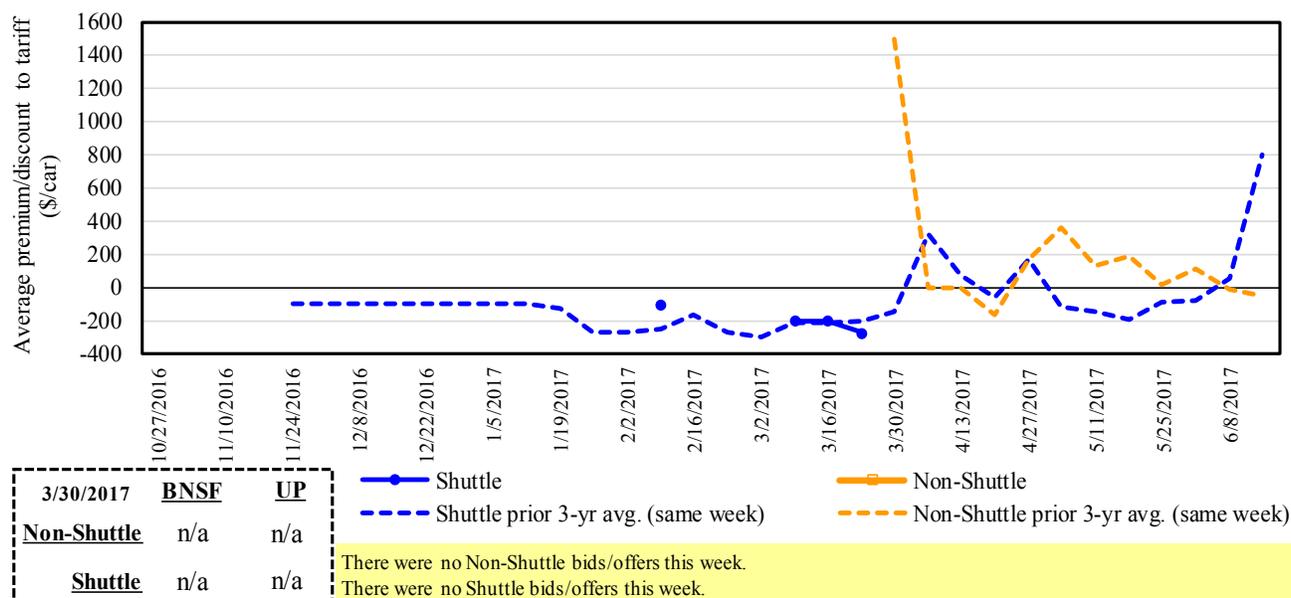
Non-shuttle bids include unit-train and single-car bids. n/a = not available.
 Source: Transportation & Marketing Programs/AMS/USDA

Figure 5
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

Figure 6
Bids/Offers for Railcars to be Delivered in June 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					
		3/30/2017	Apr-17	May-17	Jun-17	Jul-17	Aug-17
Non-shuttle	BNSF-GF	0	n/a	n/a	n/a	n/a	n/a
	Change from last week	50	n/a	n/a	n/a	n/a	n/a
	Change from same week 2016	0	n/a	n/a	n/a	n/a	n/a
	UP-Pool	(75)	n/a	n/a	n/a	n/a	n/a
	Change from last week	(75)	n/a	n/a	n/a	n/a	n/a
	Change from same week 2016	n/a	n/a	n/a	n/a	n/a	n/a
Shuttle	BNSF-GF	(242)	(200)	n/a	n/a	n/a	358
	Change from last week	(461)	(300)	n/a	n/a	n/a	n/a
	Change from same week 2016	(8)	0	n/a	n/a	n/a	n/a
	UP-Pool	(400)	(375)	n/a	n/a	n/a	n/a
	Change from last week	n/a	(162)	n/a	n/a	n/a	n/a
	Change from same week 2016	(200)	(175)	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

April, 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	\$51	\$37.94	\$1.03	6
	Grand Forks, ND	Duluth-Superior, MN	\$4,143	\$6	\$41.20	\$1.12	21
	Wichita, KS	Los Angeles, CA	\$6,950	\$31	\$69.32	\$1.89	3
	Wichita, KS	New Orleans, LA	\$4,408	\$89	\$44.66	\$1.22	6
	Sioux Falls, SD	Galveston-Houston, TX	\$6,686	\$25	\$66.64	\$1.81	6
	Northwest KS	Galveston-Houston, TX	\$4,676	\$98	\$47.40	\$1.29	6
	Amarillo, TX	Los Angeles, CA	\$4,875	\$136	\$49.76	\$1.35	6
Corn	Champaign-Urbana, IL	New Orleans, LA	\$3,681	\$101	\$37.55	\$0.95	3
	Toledo, OH	Raleigh, NC	\$6,061	\$0	\$60.19	\$1.53	0
	Des Moines, IA	Davenport, IA	\$2,258	\$21	\$22.63	\$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	\$63	\$35.72	\$0.91	4
Soybeans	Des Moines, IA	Los Angeles, CA	\$5,202	\$182	\$53.47	\$1.36	7
	Minneapolis, MN	New Orleans, LA	\$3,634	\$67	\$36.75	\$1.00	-3
	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	\$101	\$45.64	\$1.24	5	
Shuttle Train							
Wheat	Great Falls, MT	Portland, OR	\$3,953	\$18	\$39.43	\$1.07	6
	Wichita, KS	Galveston-Houston, TX	\$4,071	\$14	\$40.56	\$1.10	8
	Chicago, IL	Albany, NY	\$5,492	\$0	\$54.54	\$1.48	0
	Grand Forks, ND	Portland, OR	\$5,611	\$30	\$56.02	\$1.52	6
	Grand Forks, ND	Galveston-Houston, TX	\$5,931	\$32	\$59.21	\$1.61	6
	Northwest KS	Portland, OR	\$5,643	\$160	\$57.63	\$1.57	6
	Minneapolis, MN	Portland, OR	\$5,000	\$37	\$50.02	\$1.27	5
Corn	Sioux Falls, SD	Tacoma, WA	\$4,960	\$34	\$49.59	\$1.26	5
	Champaign-Urbana, IL	New Orleans, LA	\$3,481	\$101	\$35.57	\$0.90	3
	Lincoln, NE	Galveston-Houston, TX	\$3,700	\$20	\$36.94	\$0.94	7
	Des Moines, IA	Amarillo, TX	\$3,895	\$79	\$39.46	\$1.00	5
	Minneapolis, MN	Tacoma, WA	\$5,000	\$37	\$50.02	\$1.27	5
	Council Bluffs, IA	Stockton, CA	\$4,740	\$38	\$47.45	\$1.21	8
	Sioux Falls, SD	Tacoma, WA	\$5,600	\$34	\$55.95	\$1.52	7
Soybeans	Minneapolis, MN	Portland, OR	\$5,650	\$37	\$56.47	\$1.54	8
	Fargo, ND	Tacoma, WA	\$5,500	\$30	\$54.92	\$1.49	6
	Council Bluffs, IA	New Orleans, LA	\$4,525	\$116	\$46.09	\$1.25	5
	Toledo, OH	Huntsville, AL	\$4,226	\$0	\$41.97	\$1.14	0
	Grand Island, NE	Portland, OR	\$5,460	\$164	\$55.85	\$1.52	5

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

Date: April, 2017			Tariff rate/car ¹	Fuel surcharge per car ²	Tariff plus surcharge per:		Percent change ⁴ Y/Y
Commodity	Origin state	Destination region			metric ton ³	bushel ³	
Wheat	MT	Chihuahua, CI	\$7,459	\$0	\$76.21	\$2.07	0
	OK	Cuautitlan, EM	\$6,638	\$70	\$68.54	\$1.86	3
	KS	Guadalajara, JA	\$7,180	\$268	\$76.10	\$2.07	5
	TX	Salinas Victoria, NL	\$4,258	\$42	\$43.93	\$1.19	4
Corn	IA	Guadalajara, JA	\$8,187	\$220	\$85.90	\$2.18	0
	SD	Celaya, GJ	\$7,580	\$0	\$77.45	\$1.97	-3
	NE	Queretaro, QA	\$7,909	\$138	\$82.23	\$2.09	2
	SD	Salinas Victoria, NL	\$6,635	\$0	\$67.79	\$1.72	1
	MO	Tlalnepantla, EM	\$7,268	\$135	\$75.64	\$1.92	2
	SD	Torreon, CU	\$7,180	\$0	\$73.36	\$1.86	-1
Soybeans	MO	Bojay (Tula), HG	\$8,647	\$232	\$90.72	\$2.47	2
	NE	Guadalajara, JA	\$8,942	\$235	\$93.77	\$2.55	0
	IA	El Castillo, JA	\$8,960	\$0	\$91.55	\$2.49	-5
	KS	Torreon, CU	\$7,489	\$157	\$78.12	\$2.12	2
Sorghum	NE	Celaya, GJ	\$7,164	\$197	\$75.21	\$1.91	0
	KS	Queretaro, QA	\$7,608	\$87	\$78.62	\$2.00	2
	NE	Salinas Victoria, NL	\$6,213	\$70	\$64.19	\$1.63	2
	NE	Torreon, CU	\$6,607	\$144	\$68.98	\$1.75	1

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

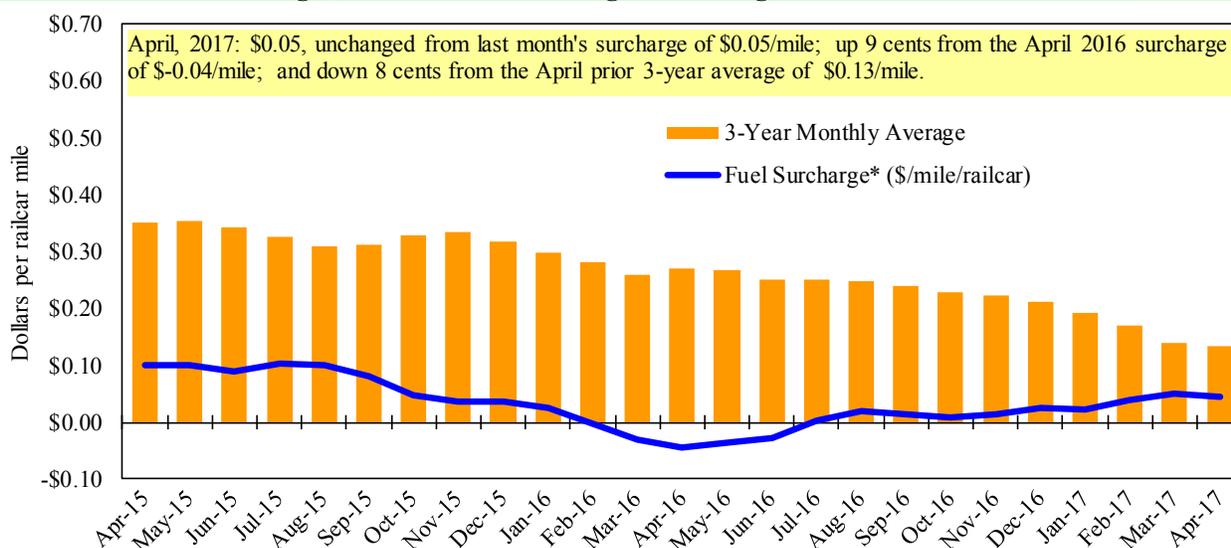
³Approximate load per car = 97.87 metric tons: Corn & Sorghum 56 lbs/bu, Wheat & Soybeans 60 lbs/bu

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.

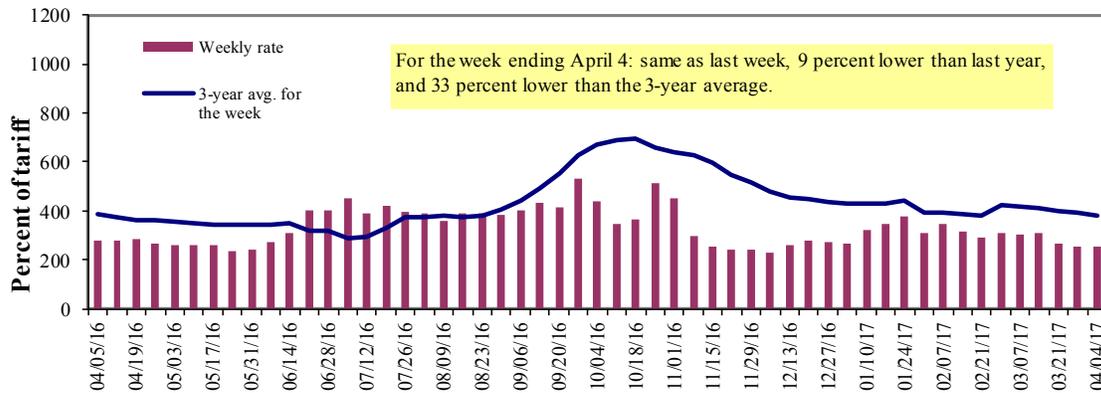
**CSX strike price changed from \$2.00/gal. to \$3.75/gal. starting January 1, 2015.

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	4/4/2017	305	255	255	180	190	190	167
	3/28/2017	315	260	255	180	208	208	170
\$/ton	4/4/2017	18.88	13.57	11.83	7.18	8.91	7.68	5.24
	3/28/2017	19.50	13.83	11.83	7.18	9.76	8.40	5.34
Current week % change from the same week:								
	Last year	-10	-14	-9	-14	-11	-11	-12
	3-year avg. ²	19	-16	-33	-38	-37	-37	-33
Rate¹	May	305	255	250	178	190	190	168
	July	318	275	268	200	208	208	183

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

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.

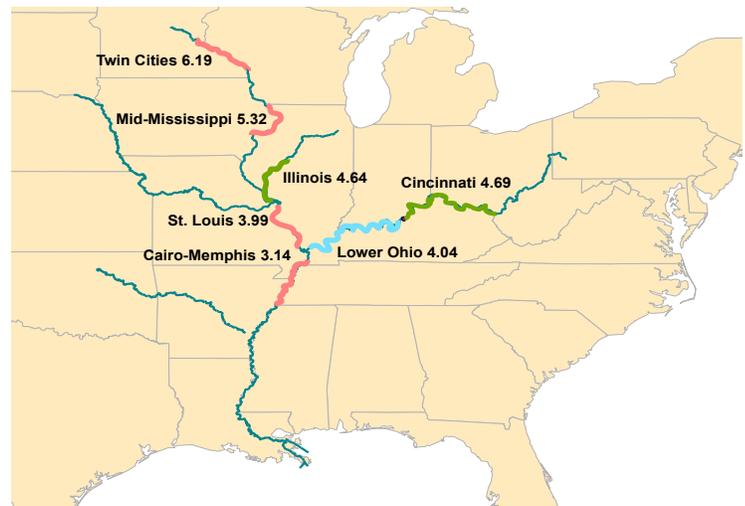
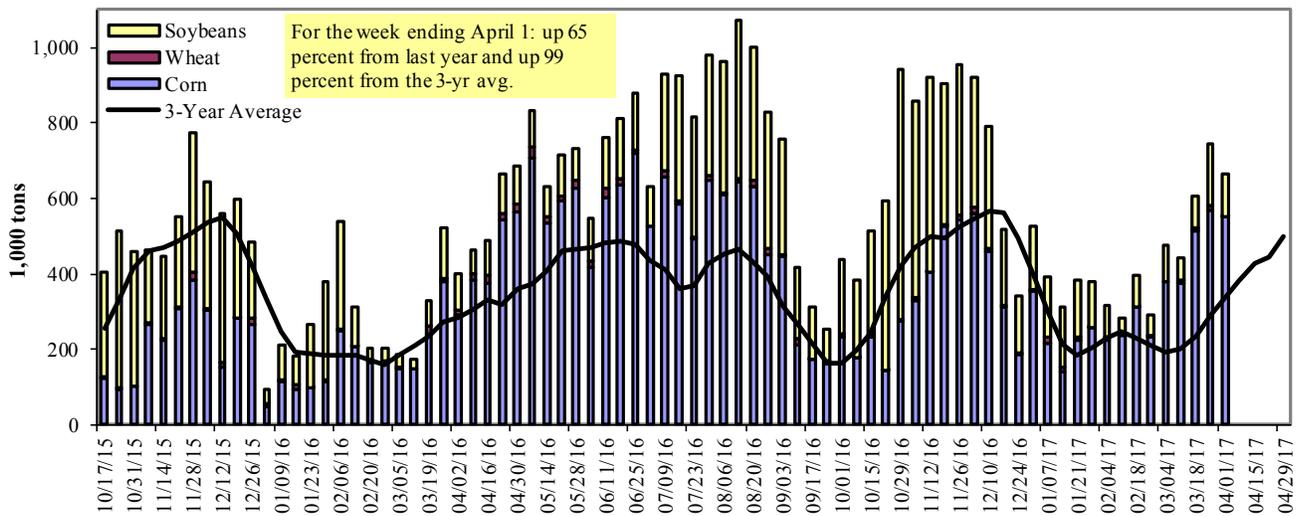


Figure 10

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 4/1/2017	Corn	Wheat	Soybeans	Other	Total
Mississippi River					
Rock Island, IL (L15)	101	9	44	0	155
Winfield, MO (L25)	324	3	86	0	413
Alton, IL (L26)	543	3	105	0	651
Granite City, IL (L27)	550	3	110	0	663
Illinois River (L8)	157	3	25	0	185
Ohio River (L52)	92	9	44	0	144
Arkansas River (L1)	4	21	18	0	43
Weekly total - 2017	646	32	172	0	851
Weekly total - 2016	417	40	154	0	611
2017 YTD ¹	5,814	503	3,519	128	9,964
2016 YTD	4,170	355	3,177	45	7,747
2017 as % of 2016 YTD	139	142	111	283	129
Last 4 weeks as % of 2016 ²	163	114	137	86	152
Total 2016	24,136	2,030	16,668	344	43,178

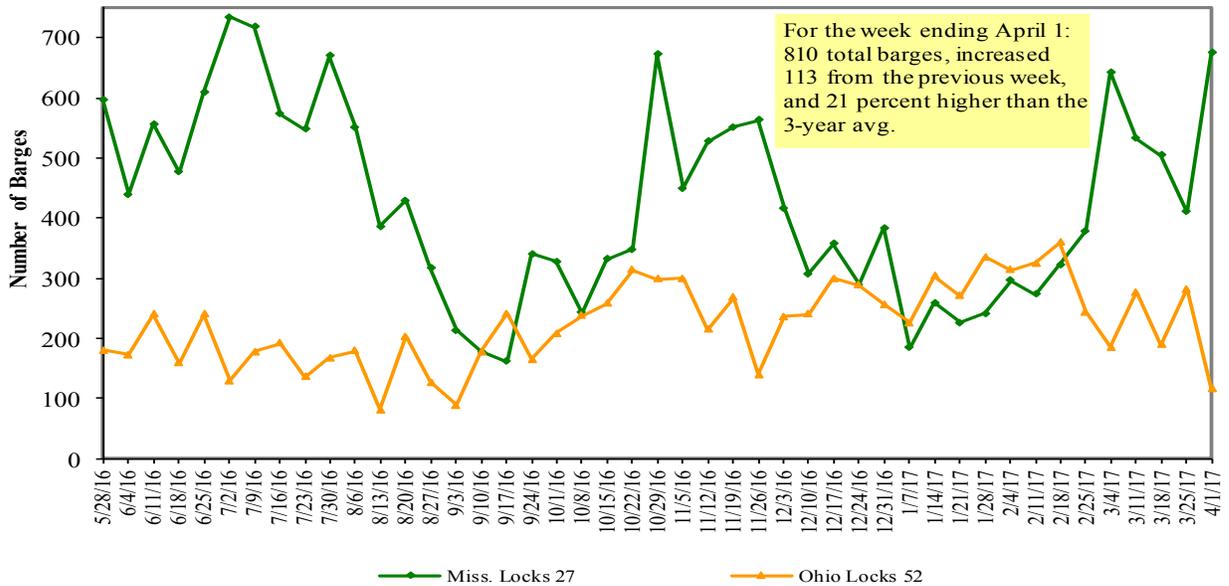
¹ Weekly total, YTD (year-to-date) and calendar year total includes Miss/27, Ohio/52, and Ark/1; "Other" refers to oats, barley, sorghum, and rye.

² As a percent of same period in 2016.

Note: Total may not add exactly, due to rounding

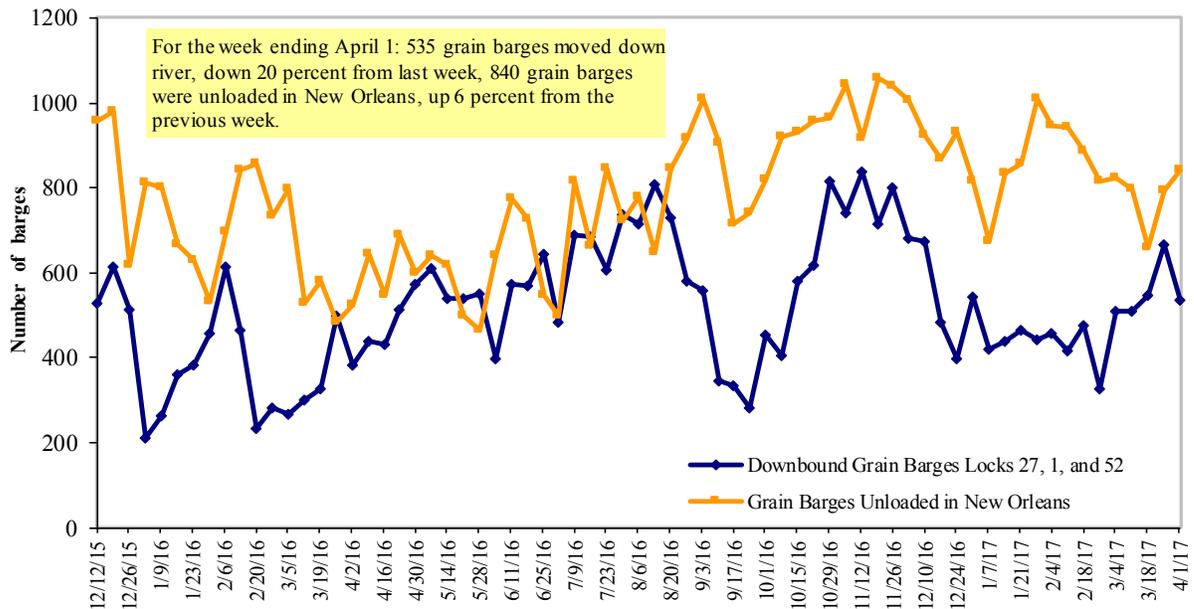
Source: U.S. Army Corps of Engineers

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 4/3/2017(US \$/gallon)

Region	Location	Price	Change from	
			Week ago	Year ago
I	East Coast	2.605	0.019	0.426
	New England	2.630	0.037	0.387
	Central Atlantic	2.739	0.015	0.443
	Lower Atlantic	2.505	0.018	0.428
II	Midwest ²	2.481	0.023	0.416
III	Gulf Coast ³	2.414	0.036	0.431
IV	Rocky Mountain	2.623	0.026	0.500
V	West Coast	2.839	0.017	0.522
	West Coast less California	2.735	0.032	0.556
	California	2.923	0.004	0.497
Total	U.S.	2.556	0.024	0.441

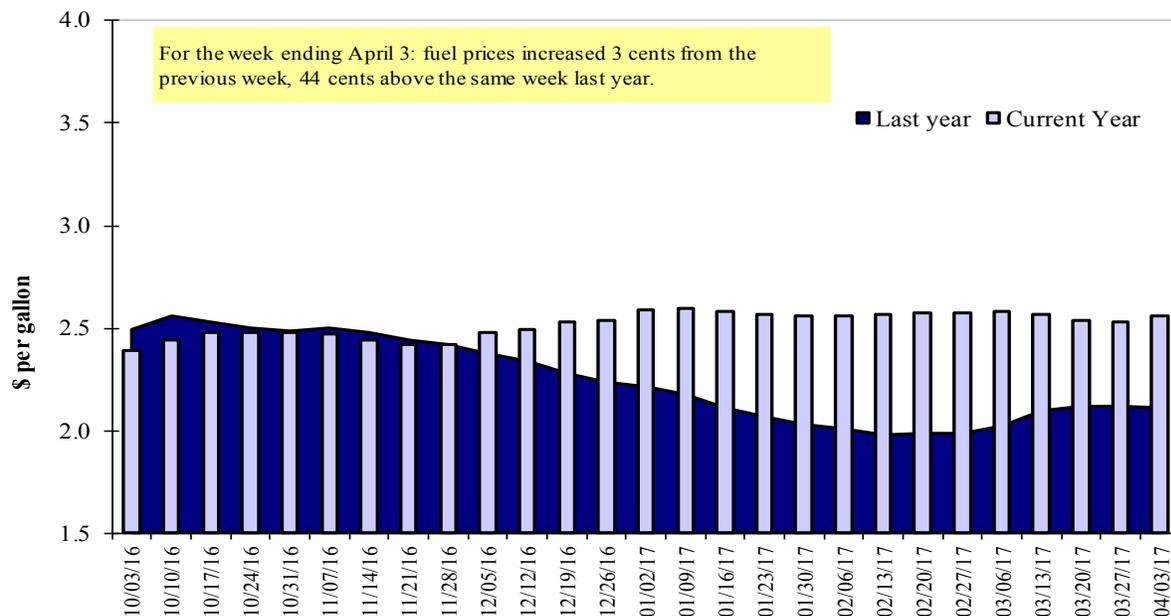
¹Diesel fuel prices include all taxes. Prices represent an average of all types of diesel fuel.

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					All wheat	Corn	Soybeans	Total
	HRW	SRW	HRS	SWW	DUR				
Export Balances¹									
3/23/2017	2,089	524	1,949	1,332	76	5,969	16,893	8,026	30,889
This week year ago	916	393	1,408	840	97	3,653	12,808	3,264	19,726
Cumulative exports-marketing year²									
2016/17 YTD	8,696	1,832	6,199	3,184	369	20,280	30,530	46,644	97,454
2015/16 YTD	4,522	2,657	4,983	2,870	571	15,602	18,835	40,644	75,081
YTD 2016/17 as % of 2015/16	192	69	124	111	65	130	162	115	130
Last 4 wks as % of same period 2015/16	230	136	149	163	91	170	137	253	189
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 3/23/2017	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	11,629	10,464	11	11,204
Japan	8,911	5,833	53	11,284
Korea	4,657	1,040	348	3,931
Colombia	3,488	3,759	(7)	4,134
Peru	2,410	1,374	75	2,109
Top 5 Importers	31,095	22,470	38	32,662
Total US corn export sales	47,424	31,643	50	46,633
% of Projected	84%	66%		
Change from prior week ²	717	791		
Top 5 importers' share of U.S. corn export sales	66%	71%		70%
USDA forecast, March 2017	56,616	48,295	17	
Corn Use for Ethanol USDA forecast, March 2017	137,160	132,690	3	

(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 (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 Importers¹ of U.S. Soybeans

For the week ending 3/23/2017	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	34,847	26,843	30	29,033
Mexico	3,246	2,748	18	3,295
Indonesia	1,617	1,270	27	2,065
Japan	1,775	1,743	2	1,994
Netherlands	1,176	1,357	(13)	1,644
Top 5 importers	42,661	33,961	26	38,032
Total US soybean export sales	54,670	43,908	25	48,389
% of Projected	99%	83%		
Change from prior week ²	681	205		
Top 5 importers' share of U.S. soybean export sales	78%	77%		79%
USDA forecast, March 2017	55,177	52,752	5	

(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/esquery/. The total commitments change (net sales) 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 3/23/2017	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	2,497	2,351	6	2,743
Mexico	3,007	2,152	40	2,660
Philippines	2,534	2,096	21	2,156
Brazil	1,184	404	193	2,076
Nigeria	1,380	1,414	(2)	1,978
Korea	1,186	1,128	5	1,170
China	1,233	700	76	1,770
Taiwan	940	939	0	1,005
Indonesia	1,005	516	95	776
Colombia	781	606	29	679
Top 10 importers	15,746	12,306	28	17,013
Total US wheat export sales	26,249	19,255	36	24,485
% of Projected	94%	91%		
Change from prior week ²	464	317		
Top 10 importers' share of U.S. wheat export sales	60%	64%		69%
USDA forecast, March 2017	27,929	21,117	32	

(n) indicates negative number.

¹Based on FAS Marketing Year Ranking Reports for 2015/16 - www.fas.usda.gov; Marketing year = Jun 1 - May 31.²Cumulative Exports (shipped) + Outstanding Sales (unshipped), FAS Weekly Export Sales Report, or Export Sales Query--
http://www.fas.usda.gov/esquery/. Total commitments change (net sales) 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 03/30/17	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	307	261	118	3,270	2,877	114	130	127	12,325
Corn	348	353	99	3,567	1,729	206	191	193	12,009
Soybeans	69	186	37	3,257	4,379	74	62	53	14,447
Total	724	800	91	10,094	8,984	112	128	121	38,782
Mississippi Gulf									
Wheat	101	53	191	1,146	872	131	135	98	3,480
Corn	922	1,049	88	10,170	6,531	156	151	147	31,420
Soybeans	410	287	143	8,718	8,089	108	192	139	35,278
Total	1,433	1,389	103	20,034	15,492	129	160	140	70,178
Texas Gulf									
Wheat	134	227	59	1,641	735	223	207	175	6,019
Corn	27	30	91	268	218	123	63	98	1,669
Soybeans	0	0	n/a	0	92	0	n/a	n/a	1,105
Total	162	257	63	1,909	1,046	183	178	166	8,792
Interior									
Wheat	46	33	141	478	297	161	170	155	1,543
Corn	140	105	133	1,653	1,439	115	115	120	7,197
Soybeans	79	69	114	1,264	1,064	119	100	95	4,577
Total	265	207	128	3,395	2,801	121	115	114	13,317
Great Lakes									
Wheat	0	0	n/a	8	0	n/a	n/a	2729	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	8	0	n/a	n/a	2729	2,681
Atlantic									
Wheat	1	0	n/a	36	124	29	2	1	315
Corn	5	0	n/a	5	14	34	103	32	294
Soybeans	30	42	72	681	782	87	60	69	2,269
Total	35	42	83	722	921	78	54	55	2,878
U.S. total from ports²									
Wheat	589	574	103	6,578	4,906	134	148	131	24,867
Corn	1,442	1,538	94	15,663	9,931	158	153	152	53,173
Soybeans	588	584	101	13,920	14,406	97	121	100	58,587
Total	2,619	2,696	97	36,162	29,243	124	143	131	136,627

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

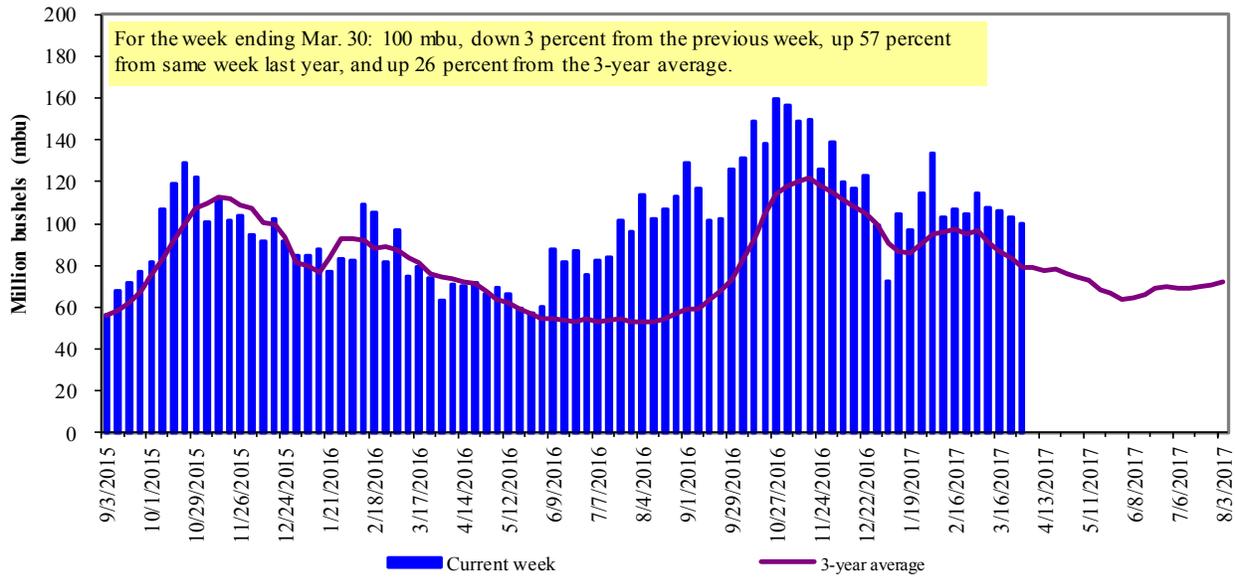
Source: Grain Inspection, Packers and Stockyards Administration/USDA (www.gipsa.usda.gov); YTD= year-to-date; n/a = not applicable

² Total only includes regions shown above.

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

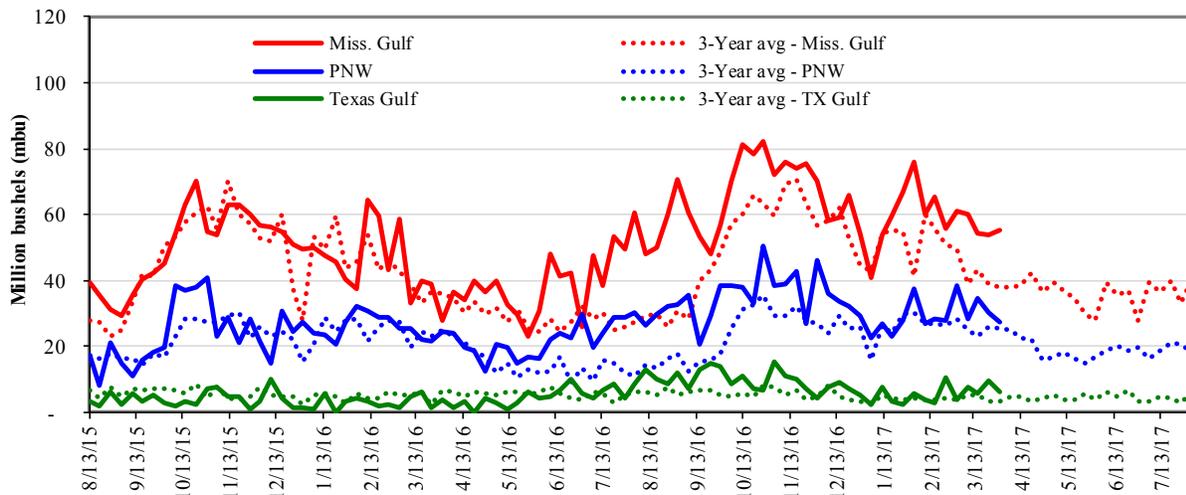
U.S. grain inspected for export (wheat, corn, and soybeans)



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)



<u>Week ending 03/30/17 inspections (mbu):</u>	<u>Percent change from:</u>	<u>MS Gulf</u>	<u>TX</u>	<u>U.S. Gulf</u>	<u>PNW</u>
Mississippi Gulf: 55.1	Last Week:	up 2	down 37	down 4	down 9
PNW: 27.5	Last Year (same	up 96	up 55	up 91	up 13
Texas Gulf: 6.0	3-yr avg. (4-wk. mov.	up 39	up 38	up 39	up 11

Source: Grain Inspection, Packers and Stockyards Administration/USDA (www.gipsa.usda.gov)
¹The 3-year average is based on a 4-week running average

Ocean Transportation

Table 17

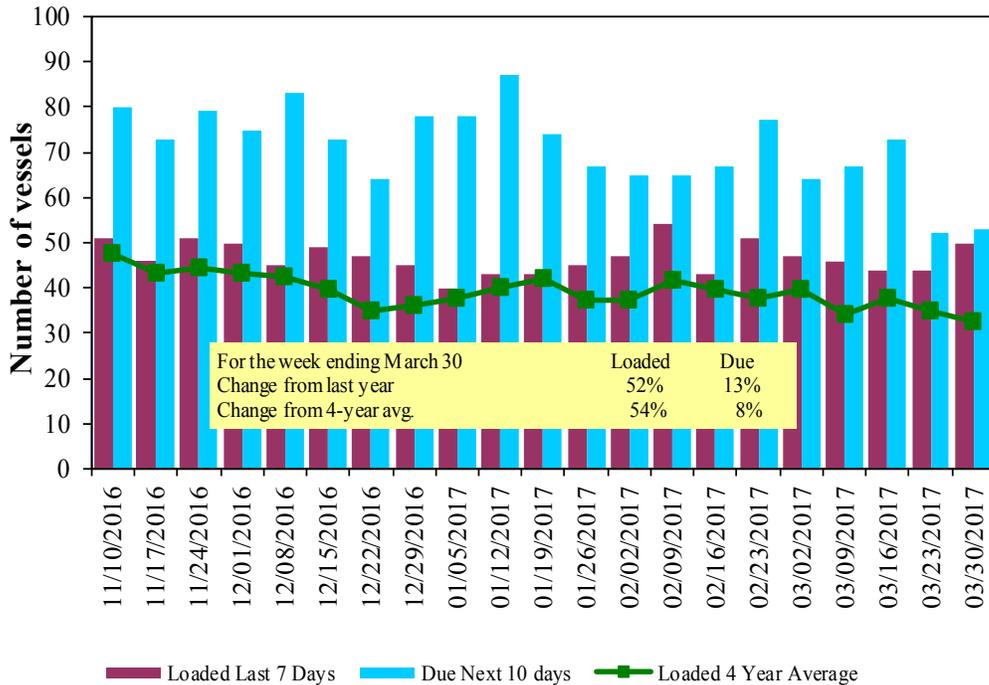
Weekly Port Region Grain Ocean Vessel Activity (number of vessels)

Date	Gulf			Pacific Northwest	Vancouver B.C.
	In port	Loaded 7-days	Due next 10-days	In port	In port
3/30/2017	44	50	53	28	n/a
3/23/2017	64	44	52	37	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

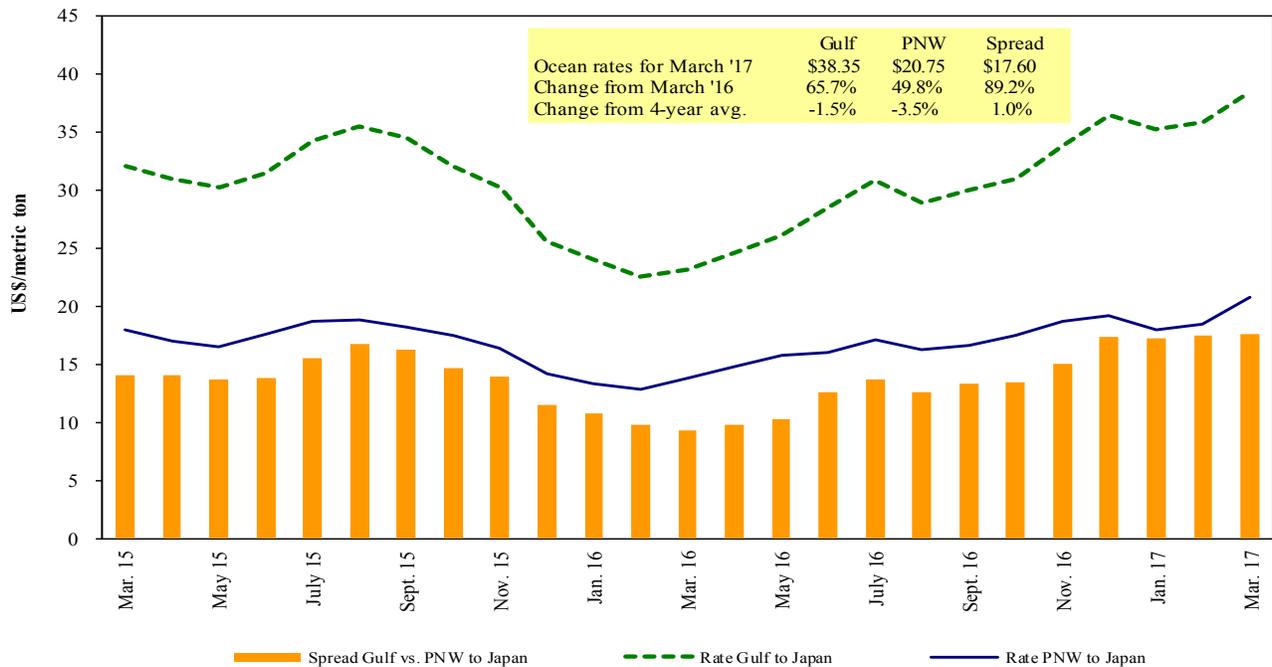
U.S. Gulf Vessel Loading Activity



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 4/01/2017

Export region	Import region	Grain types	Loading date	Volume loads (metric tons)	Freight rate (US\$/metric ton)
U.S. Gulf	Cote d'Ivoire	Rice	Jun 19/29	6,000	93.33*
PNW	Taiwan	Wheat	May 6/20	52,500	28.48
PNW	Taiwan	Wheat	Apr 19/May 3	50,350	29.12
Brazil	China	Heavy Grain	Mar 7/14	66,000	28.50
Brazil	China	Heavy Grain	May 1/5	60,000	23.50
Brazil	China	Heavy Grain	Mar 5/14	65,000	23.90 op 24.40
Brazil	South Korea	Heavy Grain	Mar 15/Apr 15	65,000	23.50
EC S. America	China	Heavy Grain	Mar 1/10	60,000	25.25
EC S. America	China	Heavy Grain	Feb 1/10	60,000	24.00
U.S. Gulf	Djibouti	Wheat	Mar 17/27	8,870	67.75*
U.S. Gulf	Berbera	Sorghum	Mar 17/27	34,860	47.75*
Bahia Blanca	Saudi Arabia	Barley	Mar 20/30	60,000	31.75
Brazil	China	Heavy Grain	Mar 21/30	60,000	26.30
Kavkaz	Tunisia	Wheat	Apr 3/10	25,000	16.75
Santos	Qingdao	Heavy Grain	Apr 1/15	60,000	29.50
Santos	China	Heavy Grain	Apr 10/15	60,000	28.00
U.S. Gulf	Conakry	Milled Rice	Apr 15/25	10,400	75.00*
U.S. Gulf	Northern China	Heavy Grain	Mar 15/20	53,000	39.00
Hamburg	Turkey	Wheat	Mar 5/10	60,000	12.50

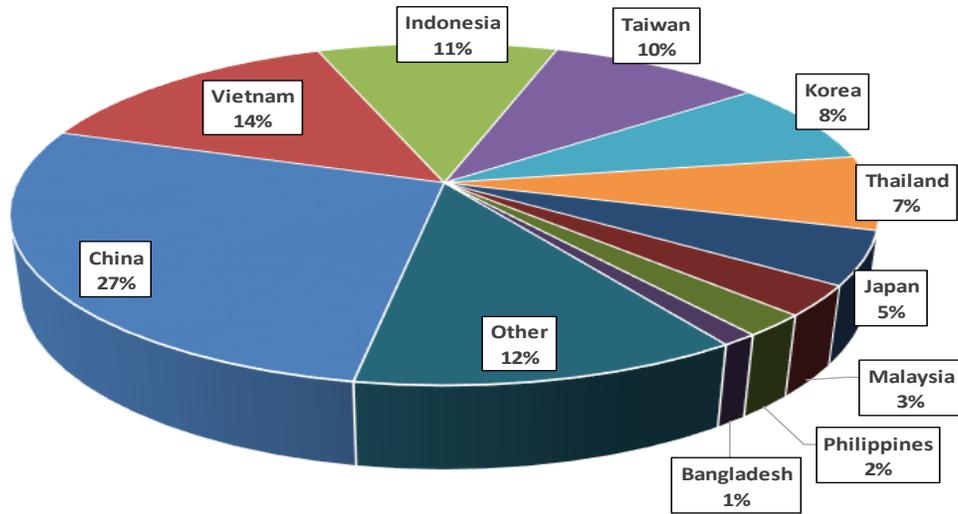
Rates shown are per metric ton (2,204.62 lbs. = 1 metric ton), F.O.B., except where otherwise indicated; op = option

*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.

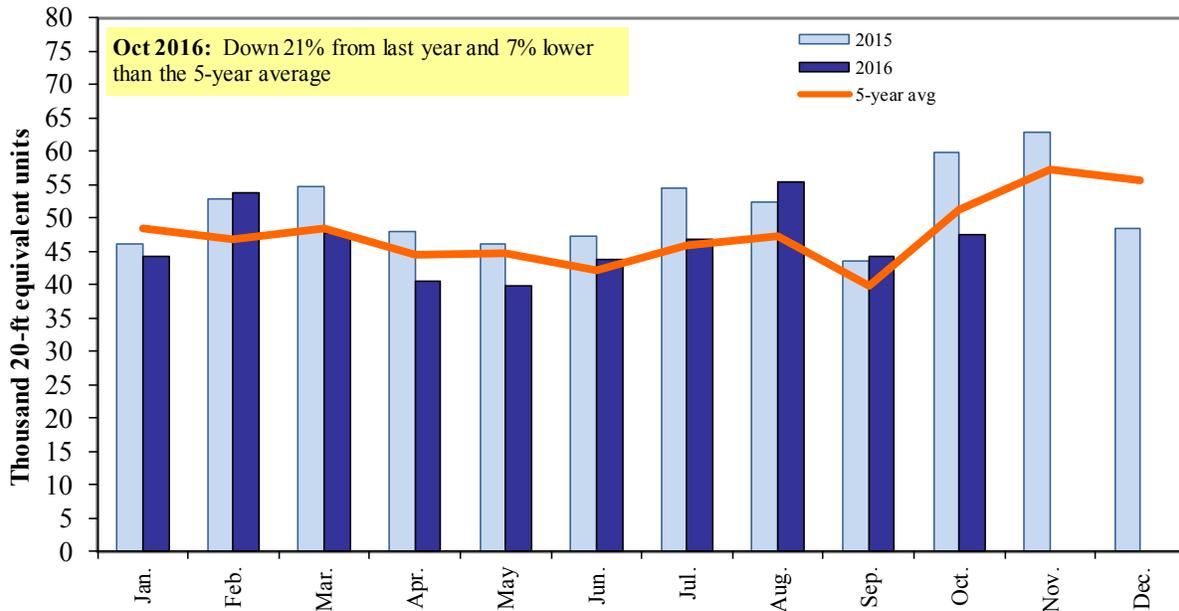
Figure 18
Top 10 Destination Markets for U.S. Containerized Grain Exports, January–October 2016



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.

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