



Grain Transportation Report

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

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December 15, 2016

WEEKLY HIGHLIGHTS

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Diesel Fuel Prices Rose to a Year High

Average on-highway fuel prices for retail diesel have increased 7 cents over the last 3 weeks. For the week ending December 12, diesel prices averaged \$2.49 per gallon, 1 cent above the previous week and 16 cents above the same period a year ago. This is also the highest price since November 11, 2015, when prices averaged \$2.50 per gallon. According to Energy Information Administration, oil prices rose in response to the November 30 agreement and announcement by members of Organization of Petroleum Exporting Countries to reduce production by approximately 1.2 million barrels per day (b/d) and lower production ceiling to 32.5 million b/d beginning January 1, 2017. For more information, see <http://www.eia.gov/todayinenergy/detail.php?id=29092>

Grain Inspections Down but Remain Above Average

For the week ending December 8, **total inspections of grain** (corn, wheat, and soybeans) for export from major U.S. export regions reached 3.19 million metric ton (mmt), down 13 percent from the previous week, up 30 percent from last year, and 7 percent above the 3-year average. Inspections of each of the three major grains were also below the past week. Despite the drop in total inspections of grain, during the last 4 weeks, grain inspections were 35 percent above last year and 19 percent above the prior 3-year average. Inspections of grain in the Pacific Northwest (PNW) dropped 22 percent from the previous week, and Mississippi Gulf inspections decreased 17 percent from week to week. Outstanding export sales (unshipped) were down for wheat and soybeans but up for corn.

Ag Shipper Workshop Summaries Available

Each year, USDA's Agricultural Marketing Service collaborates with the Agricultural Transportation Coalition (AgTC) to offer a series of Ag Shipper Workshops around the country for agricultural exporters. The Workshops provide a forum for open discussion of current issues affecting the movement of agricultural exports at key regional locations. So far this year, workshops were held in Atlanta, GA, Kansas City, MO, and Minneapolis, MN, with additional meetings scheduled in Tacoma, WA, Fresno and Sacramento, CA and Boise, ID. AgTC has posted brief summaries of the most prevalent issues discussed at these workshops on their website, www.agtrans.org/events/workshops.

Snapshots by Sector

Export Sales

During the week ending December 1, **unshipped balances** of wheat, corn, and soybeans totaled 42 mmt, up 46 percent from the same time last year. Net weekly **wheat export sales** were .503 mmt, up 4 percent from the previous week. Net **corn export sales** were 1.50 mmt, up 100 percent from the previous week, and net **soybean export sales** were 1.39 mmt, down 1 percent from the past week.

Rail

U.S. Class I railroads originated 25,002 **grain carloads** for the week ending December 3, up 11 percent from the previous week, up 9 percent from last year, and up 7 percent from the 3-year average.

Average December shuttle **secondary railcar bids/offers** per car were \$146 above tariff for the week ending December 8, up \$179 from last week, and \$277 higher than last year. Average non-shuttle secondary railcar bids/offers per car were \$66 below tariff, up \$44 from last week, and \$53 higher than last year.

Barge

For the week ending December 10, **barge grain movements** totaled 1,057,119 tons, unchanged from the last week, and up 31 percent from the same period last year.

For the week ending December 10, 672 grain barges **moved down river**, down 2 percent from last week, 923 grain barges were **unloaded in New Orleans**, down 8 percent from the previous week.

Ocean

For the week ending December 8, 45 **ocean-going grain vessels** were loaded in the Gulf, 18 percent more than the same period last year. Eighty-three vessels are expected to be loaded within the next 10 days, 57 percent more than the same period last year.

For the week ending December 8, the ocean freight rate for shipping bulk grain from the Gulf to Japan was \$37.50 per metric ton, 1 percent more than the previous week. The cost of shipping from the PNW to Japan was \$20 per metric ton, unchanged from the previous week.

Feature Article/Calendar

Potential Effects of Lock Closures on Corn and Soybean Transportation

The U.S. inland waterways serve as the barge transportation component of the Nation's freight transportation system. The inland waterways are maintained by the U.S. Army Corps of Engineers (Corps) and funded through Congressional civil work appropriations. Agricultural interests and barge companies have indicated the aging waterway infrastructure is in need of modernization and increased maintenance. They fear that without upgrading and increasing the amount of preventive maintenance, the system may be prone to breakdowns and be less reliable. In 2014, the Corps estimated there are 1,000-plus authorized projects for water resource construction, costing more than \$62 billion dollars to complete.¹ The President's budget proposal for FY 17 allocates \$348 million for new navigation construction, which would only fund about half of 1 percent of current backlogged construction authorizations.² A new report by the University of Tennessee, *Economic Impacts of Inland Waterways Disruptions on the Transport of Corn and Soybeans*, illustrates the potential impact of long term disruptions at one of two selected locks on the Upper Mississippi River (UMR) and Illinois River (IR) that have been authorized for replacement.³ This article provides a summary of the report, including an overview of the study's findings and consequences of a long term disruption at the locks. For more information on the report, as well as historic barge rate and tonnage information, visit <https://www.ams.usda.gov/services/transportation-analysis/barge>.

The study examines the potential economic impacts of UMR-IR navigability on U.S. corn and soybean stakeholders and certain sectors of the transportation industry if long-duration disruptions were to occur due to significant lock closures for major unanticipated repairs. Specifically, the study estimates the net changes in economic surplus of the corn and soybean sectors, along with shifts in transport mode (from barge to rail) for grain flows before and after assumed disruptions of the lock system in the next decade.

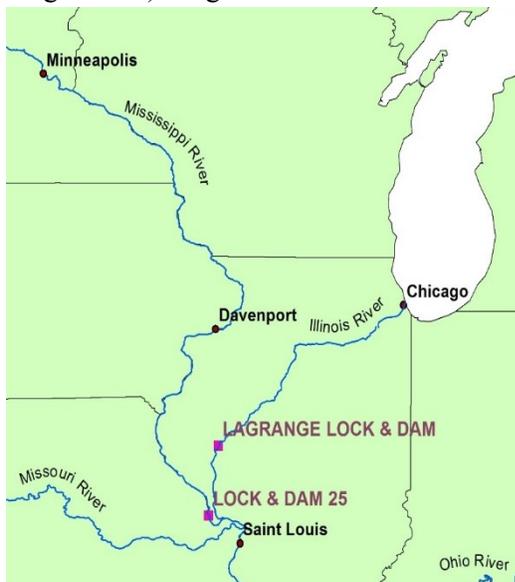


Figure 1- Location of the two locks in study

The study reports the changes in the economic surplus of the corn and soybean sectors resulting from these disruptions which increased transportation costs, reduced profits for producers, and increased purchase costs for consumers.

The hypothetical disruptions used for the study are lock closures at Mississippi River Lock 25 and Illinois River La Grange Lock, since these locks are the only two included in both large-scale modernization and small-scale navigation improvement under the Navigation and Ecosystem Sustainability Program (NESP) (see figure 1). These two locks were also selected because they have a smaller capacity chamber of only 600 feet; and because they are older than the remaining two southernmost locks on the Mississippi River in the St. Louis area. The NESP was authorized in 2007 by Congress to build five new 1,200

¹ Government Accountability Office, Army Corps of Engineers: The Corps Needs to Take Steps To Identify All Projects and Studies Eligible for Deauthorization, August 2014

² Inland Waterways Users Board, U.S. Army Corps of Engineers, July 2016

³ Yu, T.E, B.C. English and R.J. Menard. Economic Impacts Analysis of Inland Waterway on the Transportation of Corn and Soybeans. Staff Report #AE16-08. Department of Agricultural and Resource Economics, University of Tennessee. September 2016. The paper was developed with funding from USDA's Agricultural Marketing Service. The full report is available at <http://economics.ag.utk.edu/publications/logistics/EconomicImpactsInlandWaterwaysDisruptions092016.pdf>.

foot locks on the UMR. However, since 2011, Congress has not appropriated any construction funds for NESP Projects.

For the analysis, the modeled hypothetical disruptions occur at one or the other lock, but not simultaneously, with two different closure time horizons for each of the locks. The closure times assumed in the study were: (1) the fall quarter (September through November in 2024/25); and (2) the entire marketing year in 2024/25 (September through August). In addition, three potential changes in rail rates are incorporated in the lock disruptions scenarios: (1) no change; (2) an increase of 5 percent; and (3) an increase of 15 percent. The report looked at how traffic is diverted by a lock closure and the revenue shifts between the modes as a result of reduced navigation. Overall economic impacts are measured by combining the transportation sector impacts with those on the corn and soybean sectors.

The study findings include:

- In certain States adjacent to the river (Illinois, Iowa, and Minnesota), a closure of Lock 25 for three months on the Mississippi River could result in average corn and soybean prices decreasing up to \$4.89 per metric ton (mt) (\$0.13 per bushel (bu)) and \$8.25/mt (\$0.22 per bu), respectively.
- The producer prices of corn and soybeans drop further when rail rates increase and Lock 25 is inaccessible for a year: prices reduce up to \$8.15/mt (\$0.21/bu) for corn and \$16.33/mt (\$0.44/bu) for soybeans.
- A similar pattern is also observed when La Grange Lock becomes unavailable. When rail rates increase, however, there is an increase in corn and soybeans deliveries to the lower Ohio River.
- Using the USDA's agricultural baseline projections¹ for corn and soybean supply and demand, the model shows that in 2024/25, the Mississippi River and other Gulf ports would export more than 60 million metric tons of corn and soybeans and the Pacific Northwest (PNW) would export about 23 million metric tons. In the event of a 3 month closure at Mississippi Lock 25, the model projects the Mississippi River and Gulf could lose about 5.2 million metric tons of corn and soybean exports, while the PNW could gain about 3.3 million metric tons of corn and soybeans.
- A Mississippi River Lock 25 annual closure could result in a loss of 7,000 jobs, \$1.3 billion of labor income, and about \$2.4 billion of economic activity (total industry output). Similarly, closing La Grange Lock could result in reduction of 5,500 jobs, \$900 million in labor income, and \$1.8 billion in economic activity.

According to the Corps, the maintenance needs of La Grange Lock have surpassed annual operations and maintenance funding. This limited funding has adversely affected the reliability of the system and resulted in the Corps' fix-as-fail strategy, with repairs sometimes requiring days, weeks, or months. Depending on the nature of a failure and extent of repairs, shippers, manufacturers, consumers and commodity investors can experience major financial consequences.²

nick.marathon@usda.gov

¹ The agricultural baseline database provides long run, 10-year projections from USDA's annual long-term projections report, which is published in February each year.

² [http://www.mvr.usace.army.mil/Portals/48/docs/CC/FactSheets/IL/LaGrangeLockandDam\(2016\).pdf](http://www.mvr.usace.army.mil/Portals/48/docs/CC/FactSheets/IL/LaGrangeLockandDam(2016).pdf)

Grain Transportation Indicators

Table 1

Grain Transport Cost Indicators¹

For the week ending	Truck	Rail		Barge	Ocean	
		Unit Train	Shuttle		Gulf	Pacific
12/14/16	167	258	215	144	168	142
12/07/16	166	255	207	129	165	142

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)

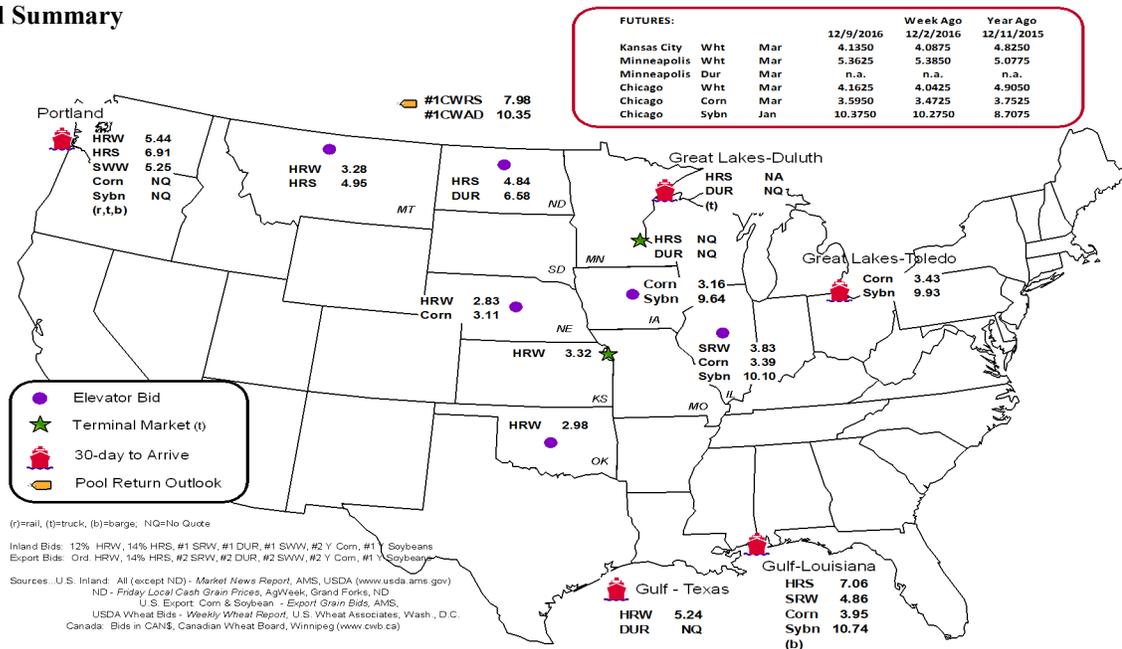
Commodity	Origin--Destination	12/9/2016	12/2/2016
Corn	IL--Gulf	-0.56	-0.50
Corn	NE--Gulf	-0.84	-0.79
Soybean	IA--Gulf	-1.10	-1.13
HRW	KS--Gulf	-1.92	-1.81
HRS	ND--Portland	-2.07	-2.14

Note: nq = no quote

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 Mexico ³
	Gulf	Texas Gulf	Northwest	East Gulf			
12/07/2016 ^p	723	2,306	7,028	1,081	11,138	12/3/2016	2,217
11/30/2016 ^r	977	2,559	7,813	1,083	12,432	11/26/2016	1,934
2016 YTD ^r	34,631	81,077	281,705	25,966	423,379	2016 YTD	102,287
2015 YTD ^r	28,221	57,224	224,049	25,099	334,593	2015 YTD	92,054
2016 YTD as % of 2015 YTD	123	142	126	103	127	% change YTD	111
Last 4 weeks as % of 2015 ²	357	138	128	142	140	Last 4wks % 2015	136
Last 4 weeks as % of 4-year avg. ²	86	174	136	115	132	Last 4wks % 4 yr	139
Total 2015	29,054	60,819	239,029	26,730	355,632	Total 2015	97,736
Total 2014	44,617	83,674	256,670	32,107	417,068	Total 2014	98,422

¹ Data is incomplete as it is voluntarily provided

² Compared with same 4-weeks in 2015 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.

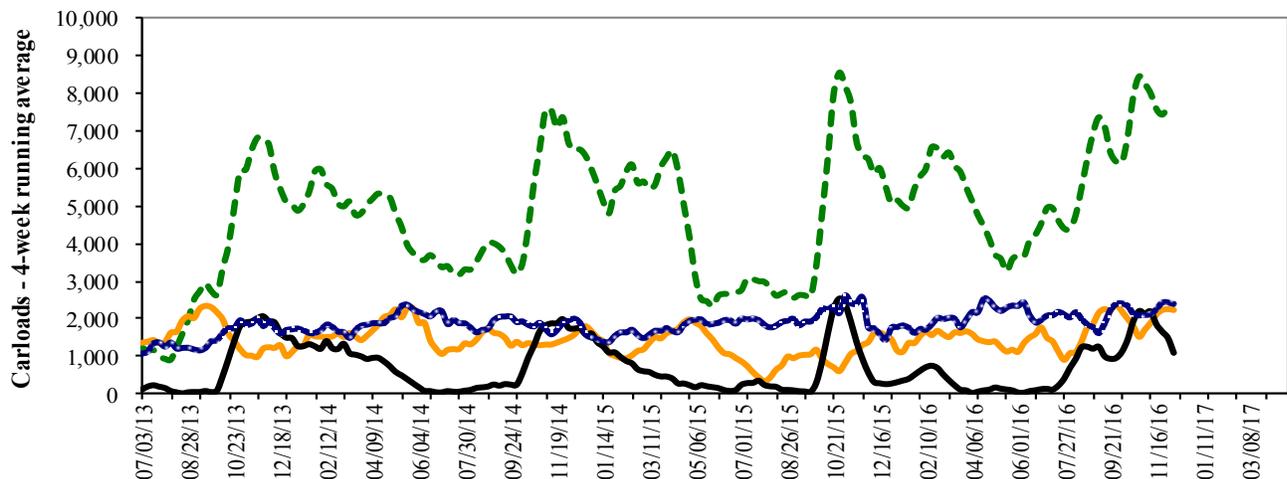
YTD = year-to-date; p = preliminary data; r = revised data; n/a = not available

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 12/07—up 28% from same period last year; up 36% from 4-year average
— Texas Gulf: 4 wks. ending 12/07—up 38% from same period last year; up 74% from 4-year average
— Miss. River: 4 wks. ending 12/07—up 257% from same period last year; down 14% from 4-year average
.... Cross-border: 4 wks. ending 12/03—up 36% from same period last year; up 39% from 4-year average

Source: Transportation & Marketing Programs/AMS/USDA

Table 4

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

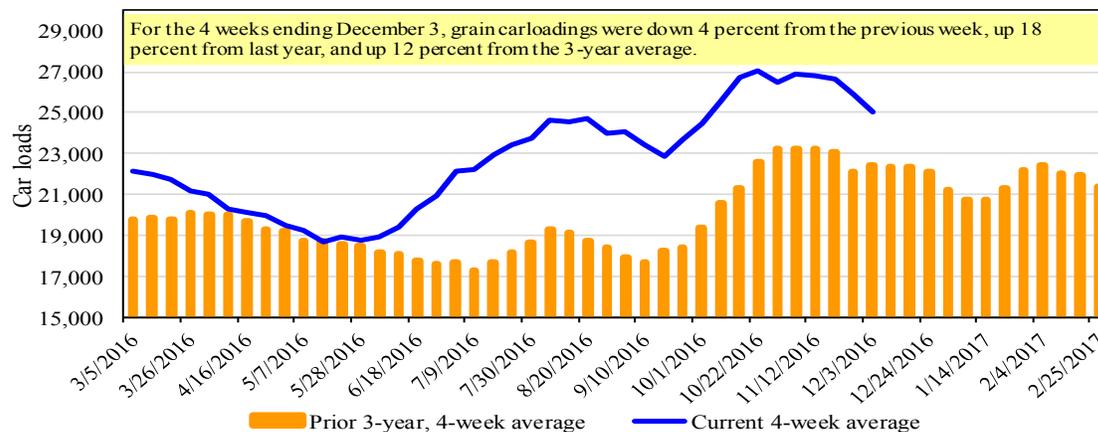
For the week ending: 12/3/2016	East		West			U.S. total	Canada	
	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	1,726	3,752	13,095	863	5,566	25,002	4,681	5,626
This week last year	2,152	2,962	11,728	1,034	5,165	23,041	4,038	5,213
2016 YTD	87,322	139,887	545,397	41,666	277,600	1,091,872	178,889	217,137
2015 YTD	96,346	139,123	493,685	42,558	248,345	1,020,057	196,092	218,654
2016 YTD as % of 2015 YTD	91	101	110	98	112	107	91	99
Last 4 weeks as % of 2015*	106	121	116	108	124	118	110	109
Last 4 weeks as % of 3-yr avg**	84	103	122	92	111	112	94	97
Total 2015	104,039	149,187	536,173	45,445	267,720	1,102,564	210,932	236,263

*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: 12/8/2016		Delivery period							
12/8/2016		Dec-16	Dec-15	Jan-17	Jan-16	Feb-17	Feb-16	Mar-17	Mar-16
BNSF ³	COT grain units	0	no offer	0	0	no bids	0	no bids	0
	COT grain single-car ⁵	11	no offer	4	25	no bids	25	no bids	42454
UP ⁴	GCAS/Region 1	no bids	no offer	no bids	no bids	no bids	no bids	n/a	n/a
	GCAS/Region 2	no bids	no offer	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.

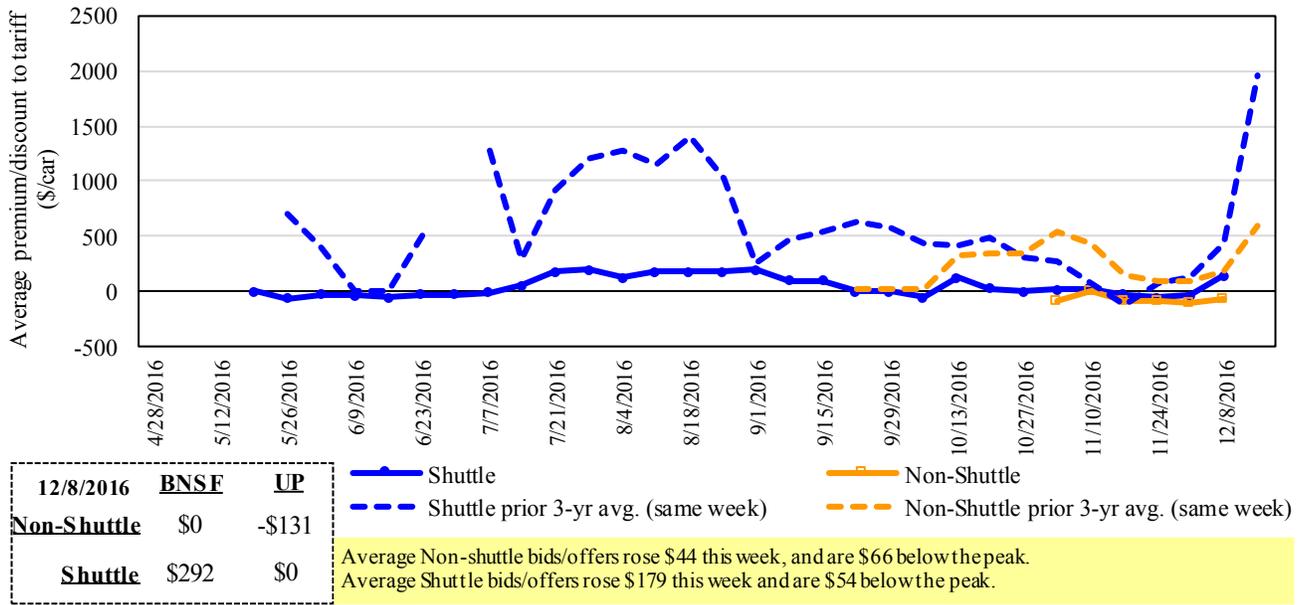
Region 2 includes: CO, IA, KS, MN, NE, WY, and Kansas City and St. Joseph, MO.

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

Source: Transportation & Marketing Programs/AMS/USDA.

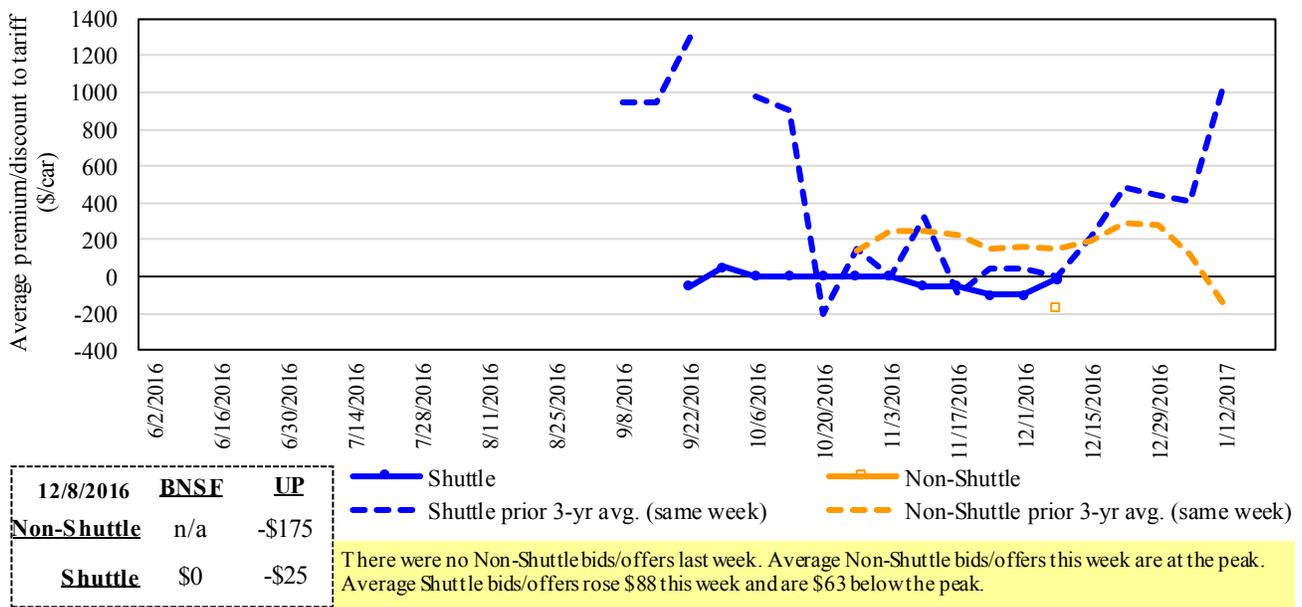
The **secondary rail market** information reflects trade values for service that was originally purchased from the railroad carrier as some form of guaranteed freight. The **auction and secondary rail** values are indicators of rail service quality and demand/supply.

Figure 4
Bids/Offers for Railcars to be Delivered in December 2016, Secondary Market



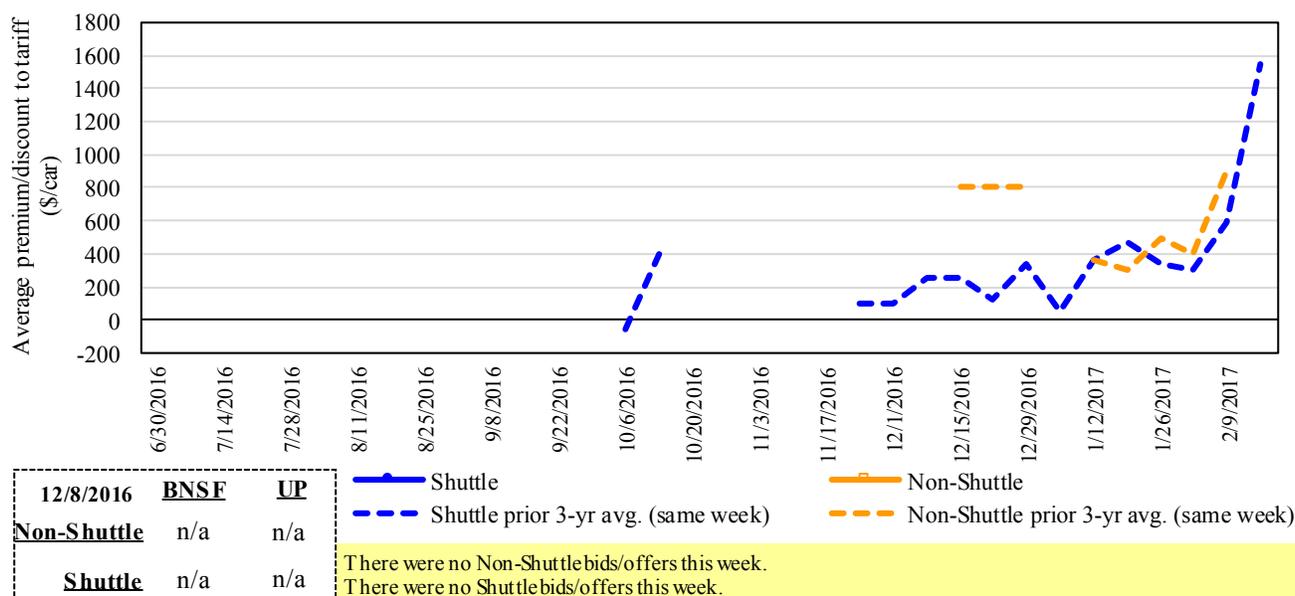
Non-shuttle bids include unit-train and single-car bids. n/a = not available.
 Source: Transportation & Marketing Programs/AMS/USDA

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



12/8/2016	BNSF	UP
Non-Shuttle	n/a	n/a
Shuttle	n/a	n/a

—●— Shuttle
- - - Shuttle prior 3-yr avg. (same week)
—■— Non-Shuttle
- - - Non-Shuttle prior 3-yr avg. (same week)

There were no Non-Shuttle bids/offers this week.
There were no Shuttle bids/offers this week.

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					
		12/8/2016	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17
Non-shuttle	BNSF-GF	0	n/a	n/a	n/a	n/a	n/a
	Change from last week	106	n/a	n/a	n/a	n/a	n/a
	Change from same week 2015	63	n/a	n/a	n/a	n/a	n/a
	UP-Pool	(131)	(175)	n/a	n/a	n/a	n/a
	Change from last week	(18)	n/a	n/a	n/a	n/a	n/a
	Change from same week 2015	44	(75)	n/a	n/a	n/a	n/a
Shuttle	BNSF-GF	292	0	n/a	n/a	n/a	n/a
	Change from last week	209	n/a	n/a	n/a	n/a	n/a
	Change from same week 2015	396	150	n/a	n/a	n/a	n/a
	UP-Pool	0	(25)	n/a	n/a	n/a	n/a
	Change from last week	150	75	n/a	n/a	n/a	n/a
	Change from same week 2015	158	275	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

December, 2016	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	\$40	\$37.84	\$1.03	4
	Grand Forks, ND	Duluth-Superior, MN	\$4,143	-\$3	\$41.11	\$1.12	16
	Wichita, KS	Los Angeles, CA	\$6,950	-\$15	\$68.86	\$1.87	0
	Wichita, KS	New Orleans, LA	\$4,408	\$71	\$44.48	\$1.21	4
	Sioux Falls, SD	Galveston-Houston, TX	\$6,486	-\$13	\$64.28	\$1.75	0
	Northwest KS	Galveston-Houston, TX	\$4,676	\$78	\$47.21	\$1.28	3
	Amarillo, TX	Los Angeles, CA	\$4,875	\$109	\$49.49	\$1.35	3
Corn	Champaign-Urbana, IL	New Orleans, LA	\$3,681	\$80	\$37.35	\$0.95	0
	Toledo, OH	Raleigh, NC	\$6,061	\$0	\$60.19	\$1.53	0
	Des Moines, IA	Davenport, IA	\$2,258	\$17	\$22.59	\$0.57	4
	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	\$50	\$35.59	\$0.90	2
	Des Moines, IA	Los Angeles, CA	\$5,202	\$146	\$53.11	\$1.35	3
Soybeans	Minneapolis, MN	New Orleans, LA	\$3,639	\$45	\$36.58	\$1.00	-2
	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	\$80	\$45.44	\$1.24	2	
Shuttle Train							
Wheat	Great Falls, MT	Portland, OR	\$3,953	-\$9	\$39.17	\$1.07	0
	Wichita, KS	Galveston-Houston, TX	\$3,871	-\$7	\$38.37	\$1.04	-2
	Chicago, IL	Albany, NY	\$5,492	\$0	\$54.54	\$1.48	0
	Grand Forks, ND	Portland, OR	\$5,611	-\$15	\$55.57	\$1.51	-1
	Grand Forks, ND	Galveston-Houston, TX	\$5,931	-\$16	\$58.74	\$1.60	-1
	Northwest KS	Portland, OR	\$5,643	\$128	\$57.31	\$1.56	3
Corn	Minneapolis, MN	Portland, OR	\$5,000	-\$19	\$49.47	\$1.26	-1
	Sioux Falls, SD	Tacoma, WA	\$4,960	-\$17	\$49.09	\$1.25	-1
	Champaign-Urbana, IL	New Orleans, LA	\$3,481	\$80	\$35.37	\$0.90	0
	Lincoln, NE	Galveston-Houston, TX	\$3,700	-\$10	\$36.64	\$0.93	2
	Des Moines, IA	Amarillo, TX	\$3,895	\$63	\$39.30	\$1.00	2
	Minneapolis, MN	Tacoma, WA	\$5,000	-\$18	\$49.47	\$1.26	-1
	Council Bluffs, IA	Stockton, CA	\$4,740	-\$19	\$46.88	\$1.19	1
Soybeans	Sioux Falls, SD	Tacoma, WA	\$5,600	-\$17	\$55.44	\$1.51	1
	Minneapolis, MN	Portland, OR	\$5,650	-\$19	\$55.92	\$1.52	2
	Fargo, ND	Tacoma, WA	\$5,500	-\$15	\$54.47	\$1.48	2
	Council Bluffs, IA	New Orleans, LA	\$4,525	\$93	\$45.86	\$1.25	2
	Toledo, OH	Huntsville, AL	\$4,226	\$0	\$41.97	\$1.14	0
Grand Island, NE	Portland, OR	\$5,460	\$131	\$55.52	\$1.51	2	

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: December, 2016							
Wheat	MT	Chihuahua, CI	\$7,459	\$0	\$76.21	\$2.07	0
	OK	Cuautitlan, EM	\$6,596	\$56	\$67.97	\$1.85	1
	KS	Guadalajara, JA	\$7,077	\$143	\$73.77	\$2.01	1
	TX	Salinas Victoria, NL	\$4,197	\$32	\$43.21	\$1.17	1
Corn	IA	Guadalajara, JA	\$8,187	\$127	\$84.95	\$2.16	-2
	SD	Celaya, GJ	\$7,580	\$0	\$77.45	\$1.97	-4
	NE	Queretaro, QA	\$7,909	\$105	\$81.89	\$2.08	0
	SD	Salinas Victoria, NL	\$6,635	\$0	\$67.79	\$1.72	1
	MO	Tlalnepantla, EM	\$7,268	\$102	\$75.31	\$1.91	0
	SD	Torreon, CU	\$7,180	\$0	\$73.36	\$1.86	-1
Soybeans	MO	Bojay (Tula), HG	\$8,647	\$131	\$89.69	\$2.44	0
	NE	Guadalajara, JA	\$8,942	\$136	\$92.75	\$2.52	-2
	IA	El Castillo, JA	\$8,960	\$0	\$91.55	\$2.49	-6
	KS	Torreon, CU	\$7,489	\$96	\$77.49	\$2.11	1
Sorghum	NE	Celaya, GJ	\$7,164	\$117	\$74.39	\$1.89	-3
	KS	Queretaro, QA	\$7,608	\$70	\$78.44	\$1.99	0
	NE	Salinas Victoria, NL	\$6,213	\$56	\$64.05	\$1.63	0
	NE	Torreon, CU	\$6,607	\$90	\$68.43	\$1.74	-3

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

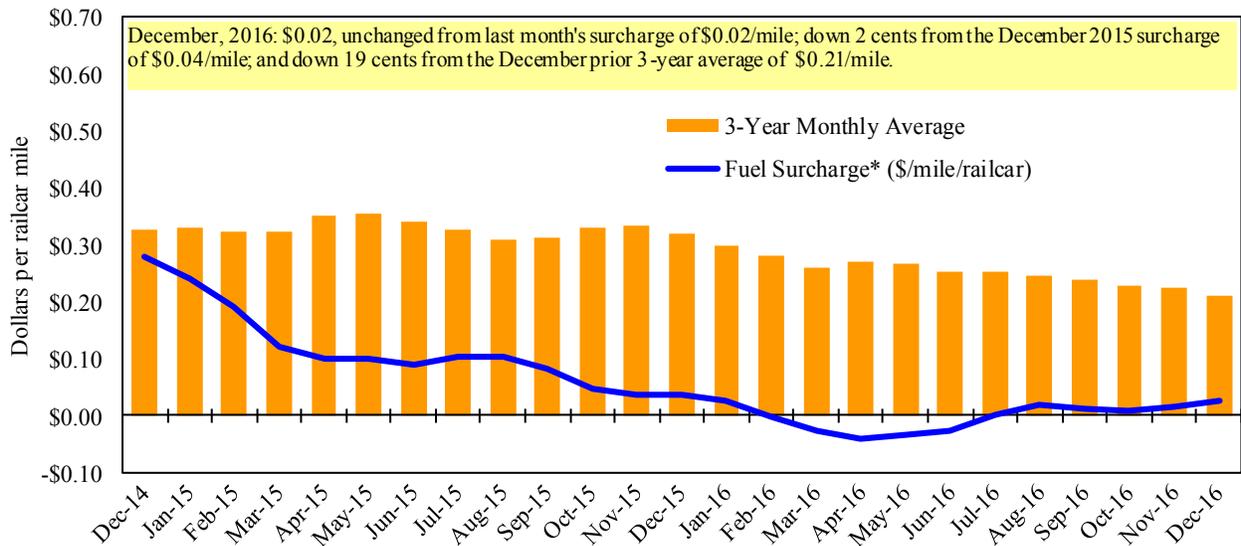
³Approximate load per car = 97.87 metric tons: Corn & Sorghum 56 lbs/bu, Wheat & Soybeans 60 lbs/bu

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.

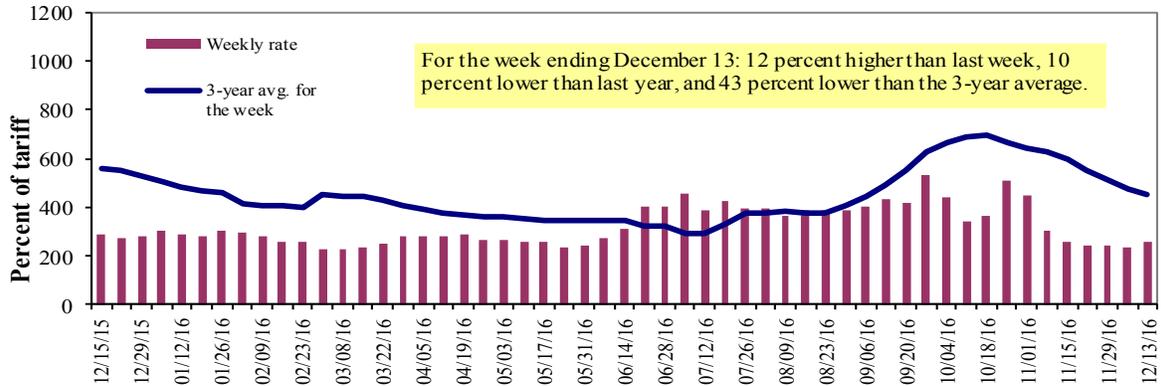
**CSX strike price changed from \$2.00/gal. to \$3.75/gal. starting January 1, 2015.

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	12/13/2016	-	-	260	187	222	222	170
	12/6/2016	-	-	233	180	190	190	153
\$/ton	12/13/2016	-	-	12.06	7.46	10.41	8.97	5.34
	12/6/2016	-	-	10.81	7.18	8.91	7.68	4.80
Current week % change from the same week:								
	Last year	-	-	-10	-2	11	11	-4
	3-year avg. ²	-	-	-43	-45	-43	-43	-39
Rate¹	January	-	-	283	187	197	197	168
	March	-	275	250	178	190	190	163

¹Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); ²4-week moving average; ton = 2,000 pounds; - closed for winter
Source: Transportation & Marketing Programs/AMS/USDA

Figure 9

Benchmark tariff rates

Calculating barge rate per ton:

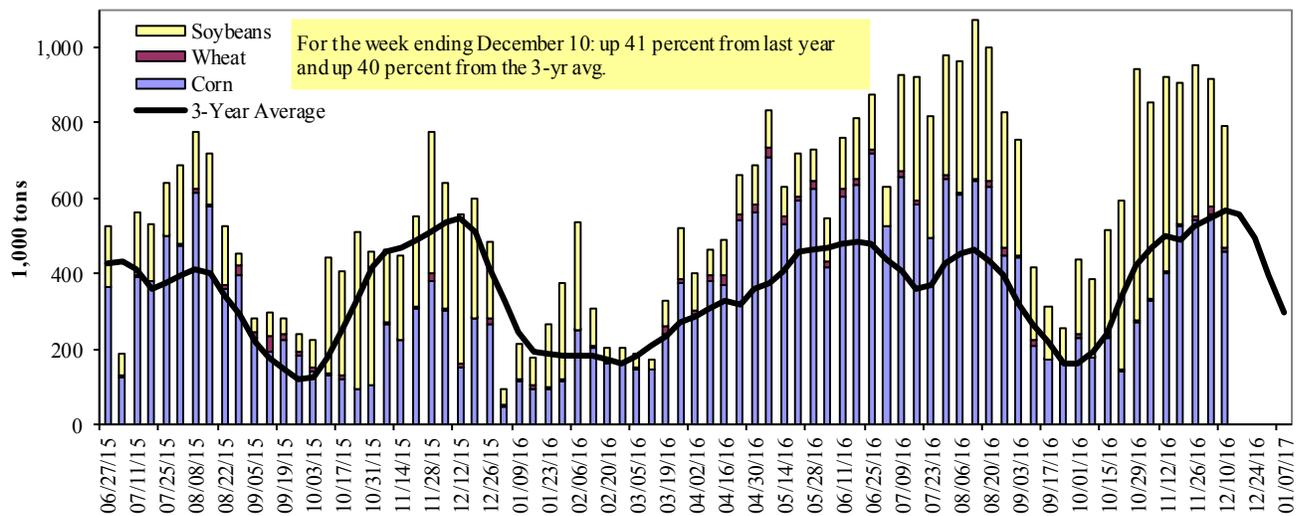
$$(\text{Rate} * 1976 \text{ tariff benchmark rate per ton}) / 100$$

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 12/10/2016	Corn	Wheat	Soybeans	Other	Total
Mississippi River					
Rock Island, IL (L15)	133	8	77	0	218
Winfield, MO (L25)	294	8	243	0	544
Alton, IL (L26)	456	8	321	0	785
Granite City, IL (L27)	459	8	324	0	792
Illinois River (L8)	182	0	68	0	250
Ohio River (L52)	50	10	137	2	200
Arkansas River (L1)	3	11	52	0	66
Weekly total - 2016	513	29	514	2	1,057
Weekly total - 2015	187	18	595	7	806
2016 YTD ¹	23,137	1,947	15,598	318	40,999
2015 YTD	18,370	1,626	12,974	346	33,317
2016 as % of 2015 YTD	126	120	120	92	123
Last 4 weeks as % of 2015 ²	168	123	104	17	128
Total 2015	19,215	1,686	14,191	359	35,451

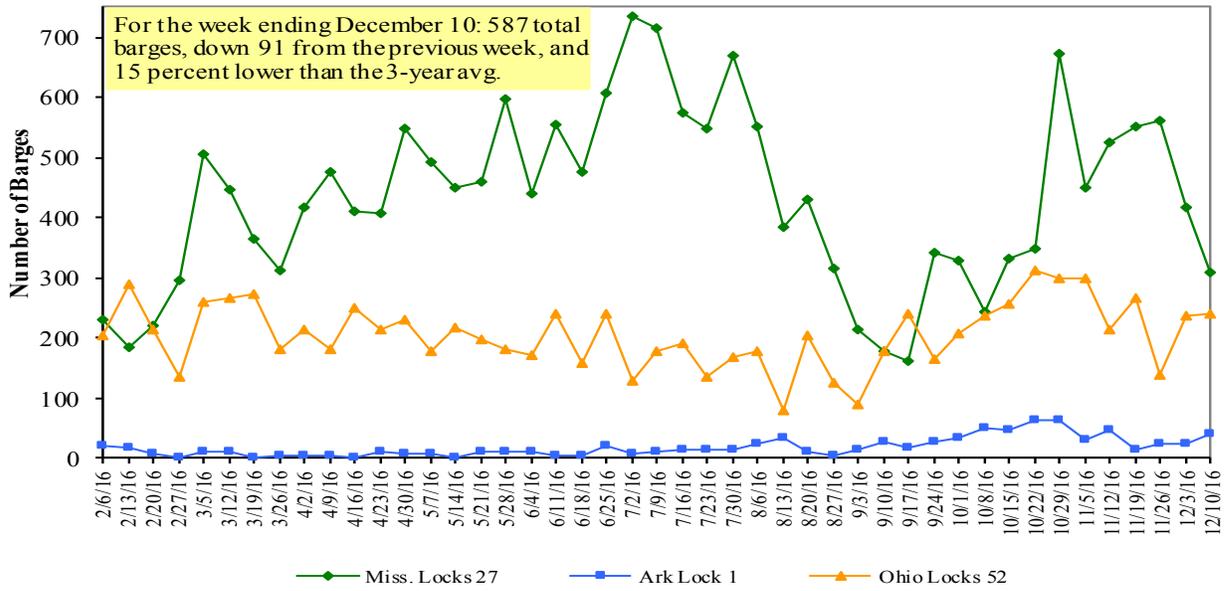
¹ Weekly total, YTD (year-to-date) and calendar year total includes Miss/27, Ohio/52, and Ark/1; "Other" refers to oats, barley, sorghum, and rye.

² As a percent of same period in 2015.

Note: Total may not add exactly, due to rounding

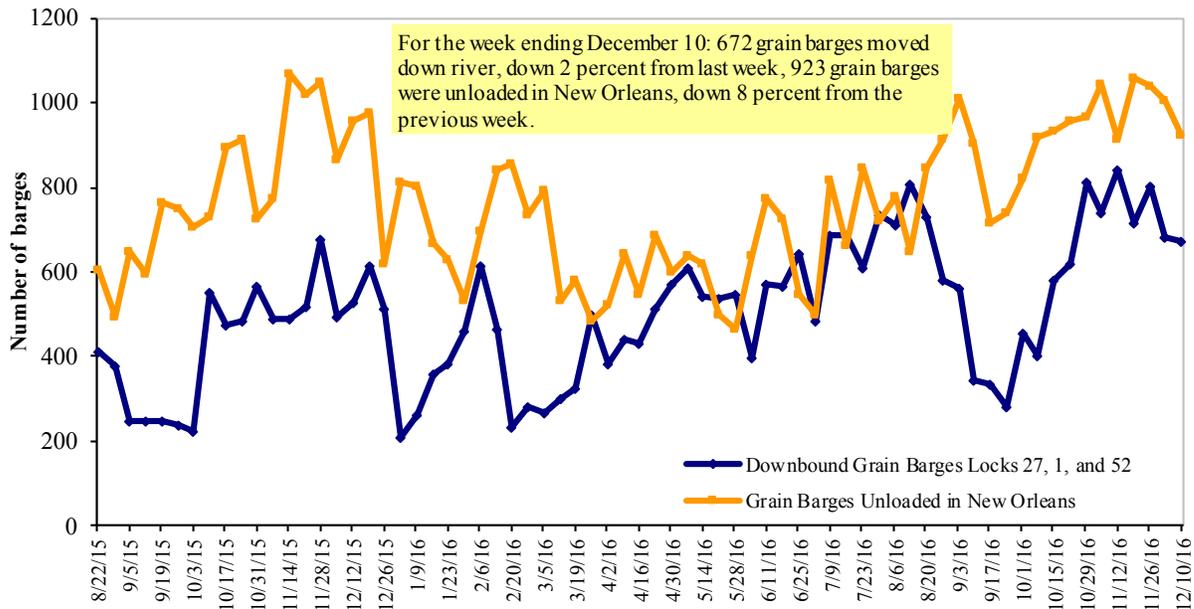
Source: U.S. Army Corps of Engineers

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 12/12/2016 (US \$/gallon)

Region	Location	Price	Change from	
			Week ago	Year ago
I	East Coast	2.520	0.021	0.148
	New England	2.547	0.021	0.094
	Central Atlantic	2.633	0.031	0.132
	Lower Atlantic	2.429	0.014	0.171
II	Midwest ²	2.446	0.015	0.152
III	Gulf Coast ³	2.371	0.010	0.159
IV	Rocky Mountain	2.447	-0.010	0.072
	West Coast	2.772	0.002	0.220
V	West Coast less California	2.690	0.011	0.259
	California	2.837	-0.006	0.187
Total	U.S.	2.493	0.013	0.155

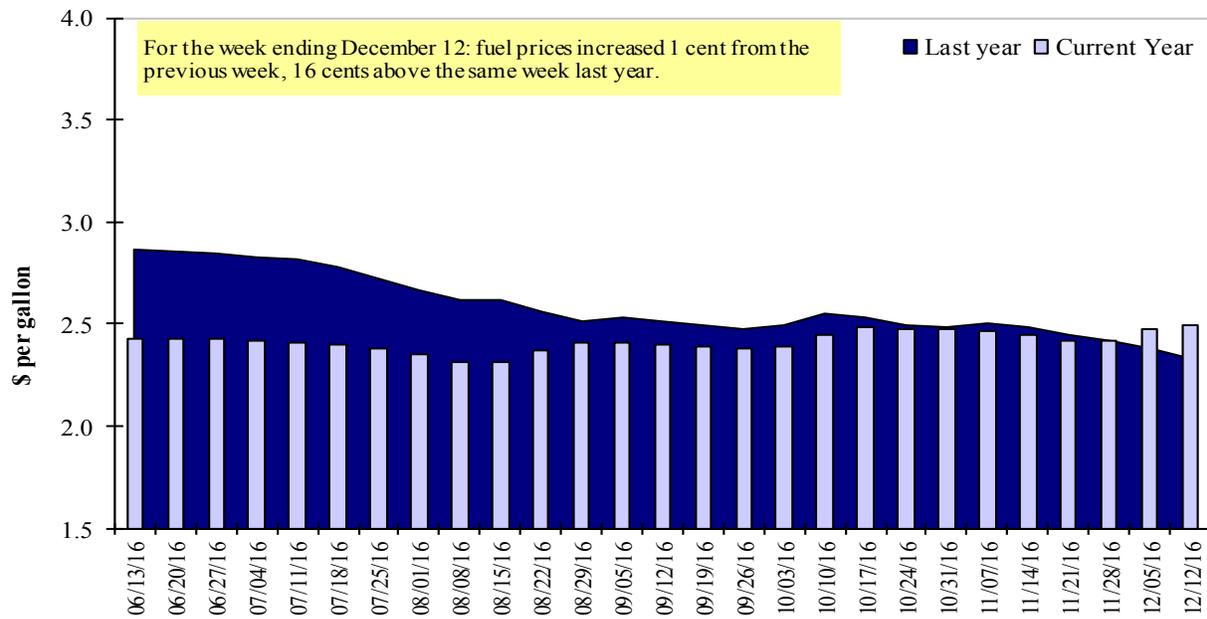
¹Diesel fuel prices include all taxes. Prices represent an average of all types of diesel fuel.

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									
12/1/2016	2,084	559	2,304	1,186	188	6,320	18,484	17,160	41,964
This week year ago	1,276	663	1,471	1,074	49	4,532	10,943	13,194	28,670
Cumulative exports-marketing year²									
2016/17 YTD	5,763	1,095	3,872	2,142	177	13,049	13,094	26,000	52,143
2015/16 YTD	2,823	1,911	3,202	1,701	481	10,117	7,168	20,886	38,171
YTD 2016/17 as % of 2015/16	204	57	121	126	37	129	183	124	137
Last 4 wks as % of same period 2015/16	161	84	146	112	389	136	166	138	148
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 12/01/2016	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 -
Japan	4,175	2,743	52	11,284
Mexico	8,750	7,293	20	11,204
Korea	2,366	387	511	3,931
Colombia	1,908	1,511	26	4,134
Taiwan	1,517	342	343	1,912
Top 5 Importers	18,716	12,277	52	32,465
Total US corn export sales	31,578	18,111	74	46,633
% of Projected	56%	38%		
Change from prior week	1,495	1,032		
Top 5 importers' share of U.S. corn export sales	59%	68%		70%
USDA forecast, December 2016	56,616	48,295	17	
Corn Use for Ethanol USDA forecast, December 2016	134,620	132,233	2	

(n) indicates negative number.

¹ Based on FAS Marketing Year Ranking Reports - 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 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 12/01/2016	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	27,248	20,239	35	29,033
Mexico	1,792	1,637	9	3,295
Indonesia	764	540	41	2,065
Japan	1,113	1,073	4	1,994
Taiwan	817	676	21	1,226
Top 5 importers	31,733	24,165	31	37,614
Total US soybean export sales	43,160	34,081	27	48,389
% of Projected	77%	65%		
Change from prior week	1,391	1,293		
Top 5 importers' share of U.S. soybean export sales	74%	71%		78%
USDA forecast, December 2016	55,858	52,752	6	

(n) indicates negative number.

¹ Based on FAS Marketing Year Ranking Reports - 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. (Carry over plus Accumulated Exports)

Table 15

Top 10 Importers¹ of All U.S. Wheat

For the week ending 12/01/2016	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	1,809	1,469	23	2,743
Mexico	1,867	1,494	25	2,660
Nigeria	855	1,186	(28)	1,978
Philippines	1,946	1,530	27	2,156
Brazil	1,081	338	220	2,076
Korea	1,010	960	5	1,170
Taiwan	734	651	13	1,005
Indonesia	654	194	236	776
Colombia	582	471	24	679
Thailand	552	379	46	618
Top 10 importers	10,538	8,293	27	15,861
Total US wheat export sales	19,369	14,649	32	24,485
% of Projected	73%	69%		
Change from prior week	503	225		
Top 10 importers' share of U.S. wheat export sales	54%	57%		65%
USDA forecast, December 2016	26,567	21,117	26	

(n) indicates negative number.

¹ Based on FAS Marketing Year Ranking Reports - 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 12/08/16	Previous Week*	Current Week as % of Previous	2016 YTD*	2015 YTD*	2016 YTD as % of 2015 YTD	Last 4-weeks as % of:		2015 Total*
							Last Year	Prior 3-yr. avg.	
Pacific Northwest									
Wheat	149	322	46	11,593	10,100	115	161	131	10,985
Corn	186	357	52	11,533	7,210	160	682	200	7,232
Soybeans	625	557	112	13,098	10,476	125	141	123	11,809
Total	960	1,235	78	36,223	27,786	130	175	136	30,027
Mississippi Gulf									
Wheat	50	129	39	3,338	4,378	76	62	71	4,504
Corn	512	600	85	29,939	25,490	117	151	125	26,701
Soybeans	988	1,137	87	32,120	26,781	120	112	109	29,593
Total	1,551	1,866	83	65,397	56,649	115	117	111	60,797
Texas Gulf									
Wheat	146	91	161	5,600	3,581	156	147	115	3,724
Corn	0	28	0	1,590	596	267	400	234	596
Soybeans	65	0	n/a	1,027	829	124	126	118	864
Total	210	118	178	8,217	5,007	164	154	126	5,184
Interior									
Wheat	28	8	351	1,456	1,325	110	131	146	1,388
Corn	117	117	100	6,835	5,846	117	154	129	6,201
Soybeans	112	84	134	4,321	3,369	128	182	117	3,518
Total	258	209	123	12,613	10,539	120	161	126	11,106
Great Lakes									
Wheat	90	25	360	1,094	966	113	221	141	997
Corn	26	39	66	584	485	120	n/a	1805	485
Soybeans	65	63	103	868	711	122	135	109	733
Total	181	127	142	2,546	2,163	118	193	144	2,216
Atlantic									
Wheat	0	0	n/a	289	519	56	1	4	520
Corn	0	0	n/a	293	276	106	73	23	277
Soybeans	26	127	20	1,959	1,764	111	100	88	2,053
Total	26	127	20	2,542	2,559	99	91	85	2,850
U.S. total from ports**									
Wheat	464	575	81	23,370	20,869	112	128	115	22,118
Corn	842	1,141	74	50,775	39,903	127	196	143	41,492
Soybeans	1,880	1,967	96	53,393	43,930	122	121	112	48,570
Total	3,186	3,683	87	127,538	104,703	122	135	119	112,180

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

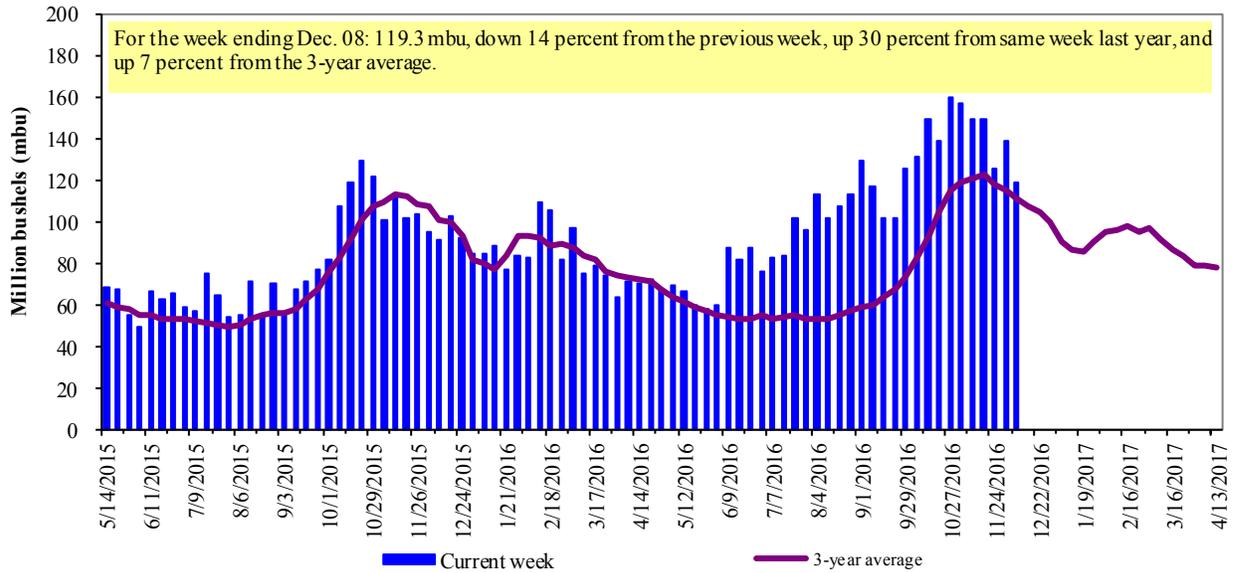
**Total only includes regions shown above

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 59 percent of the U.S. export grain shipments departed through the U.S. Gulf region in 2015.

Figure 14

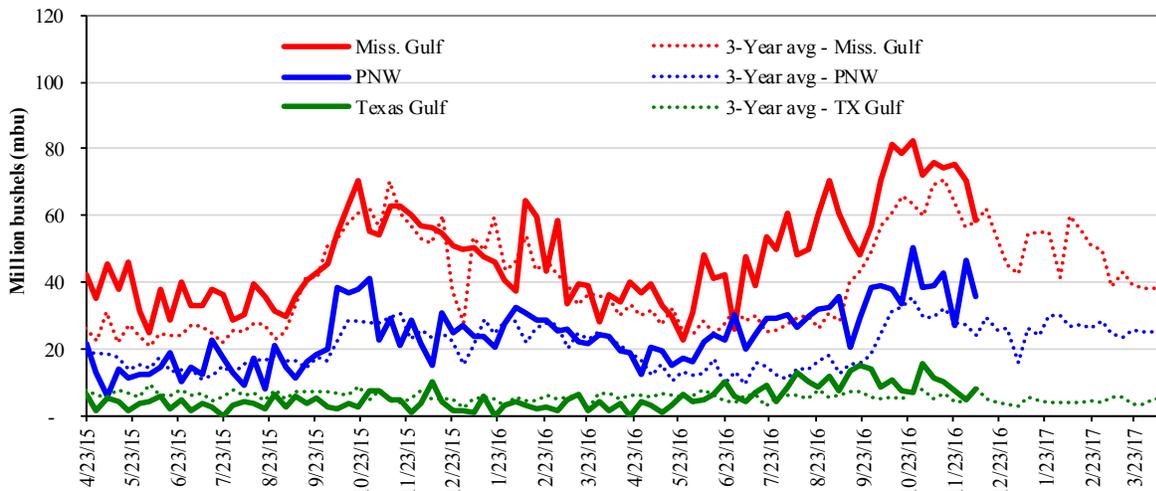
U.S. grain inspected for export (wheat, corn, and soybeans)



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 12/08/16 inspections (mbu):		Percent change from:				
Mississippi Gulf:	58.3	Last Week:	MS Gulf	TX Gulf	U.S. Gulf	PNW
PNW:	35.8	Last Year (same week):	down 17	up 75	down 11	down 23
Texas Gulf:	7.7	3-yr avg. (4-wk. mov. Avg):	up 4	down 21	unchanged	up 138
			down 6	up 34	down 3	up 29

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

Ocean Transportation

Table 17

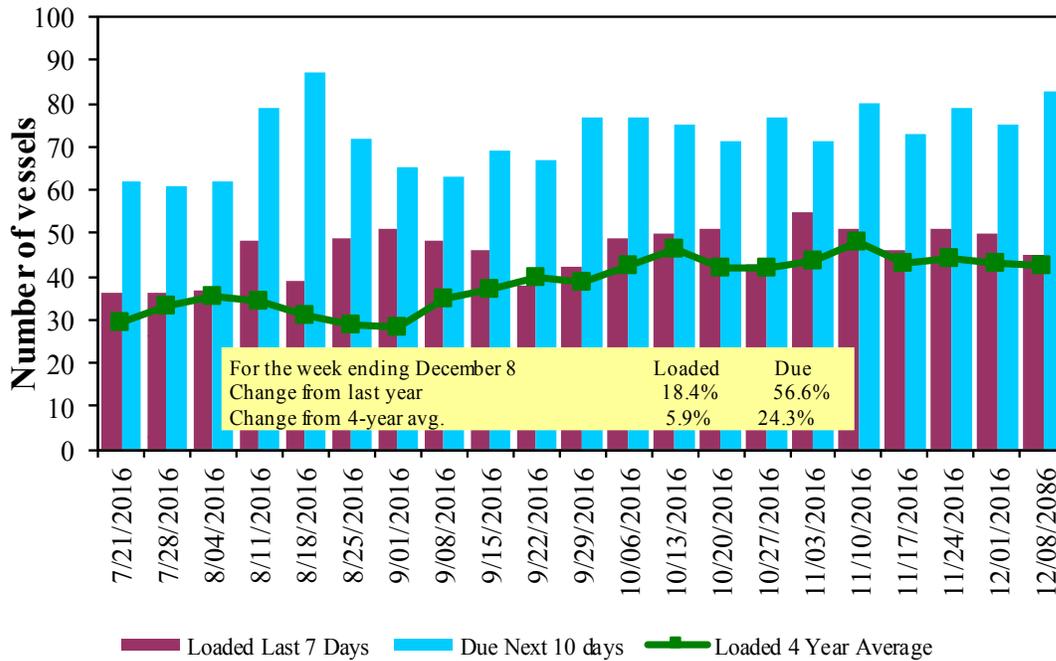
Weekly Port Region Grain Ocean Vessel Activity (number of vessels)

Date	Gulf			Pacific Northwest	Vancouver B.C.
	In port	Loaded 7-days	Due next 10-days	In port	In port
12/8/2016	38	45	83	24	n/a
12/1/2016	47	50	75	27	n/a
2015 range	(25..54)	(28..54)	(36..80)	(3..26)	n/a
2015 avg.	42	38	56	11	n/a

Source: Transportation & Marketing Programs/AMS/USDA

Figure 16

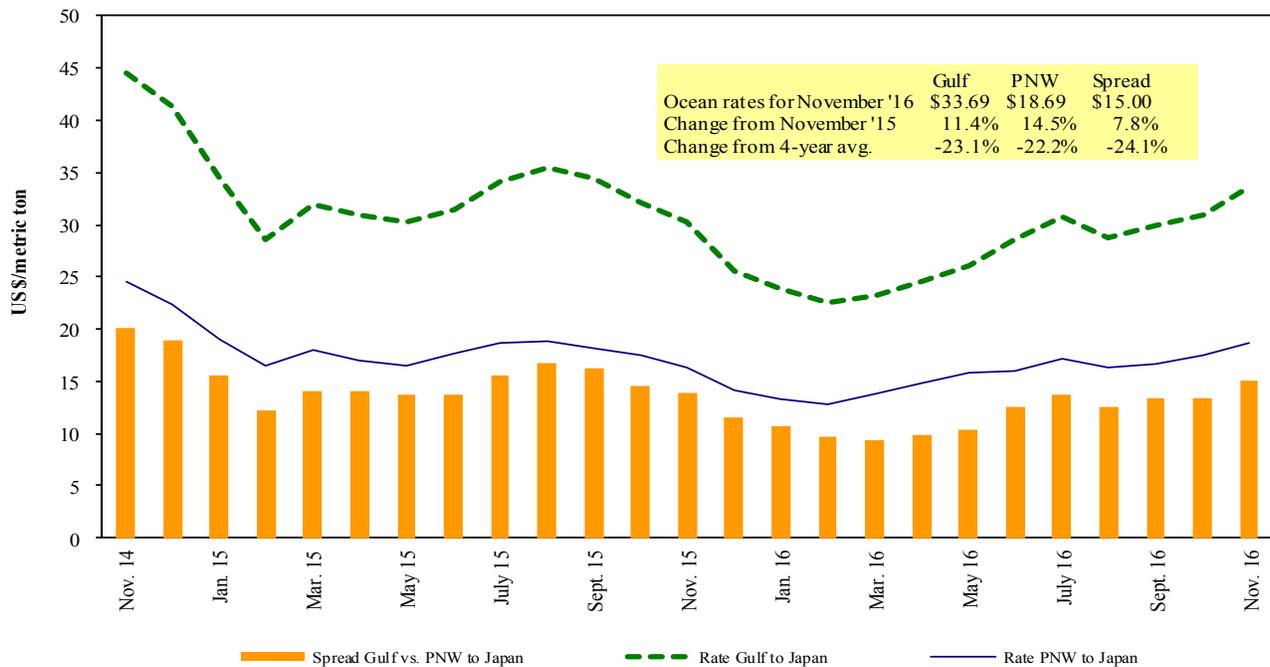
U.S. Gulf Vessel Loading Activity



Source: Transportation & Marketing Programs/AMS/USDA

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 12/10/2016

Export region	Import region	Grain types	Loading date	Volume loads (metric tons)	Freight rate (US\$/metric ton)
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	China	Heavy Grain	Dec 5/15	60,000	35.75
U.S. Gulf	China	Heavy Grain	Dec 1/10	60,000	35.35
U.S. Gulf	China	Heavy Grain	Nov 20/30	50,000	31.00
U.S. Gulf	China	Heavy Grain	Nov 15/25	50,000	29.00
U.S. Gulf	China	Heavy Grain	Oct 20/30	65,000	27.50
U.S. Gulf	China	Heavy Grain	Oct 10/20	60,000	28.25
U.S. Gulf	China	Heavy Grain	Oct 5/15	66,000	28.00
U.S. Gulf	China	Heavy Grain	Sep 20/25	60,000	27.75
PNW	Bangladesh	Wheat	Dec 1/10	12,500	160.33*
Vancouver	China	Heavy Grain	Nov 1/10	50,000	31.50
PNW	Bangladesh	Wheat	Nov 1/10	12,500	163.55*
PNW	Taiwan	Wheat	Sep 8/22	54,000	21.10
Black Sea	Spanish Mediterranean	Heavy Grain	Oct 14/18	60,000	9.35
River Plate	South Africa	Soybeans	Nov 1/14	25,000	24.00
River Plate	Algeria	Corn	Sep 24/28	40,000	19.50
Ukraine	Iran	Wheat	Oct 10/17	60,000	22.25

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

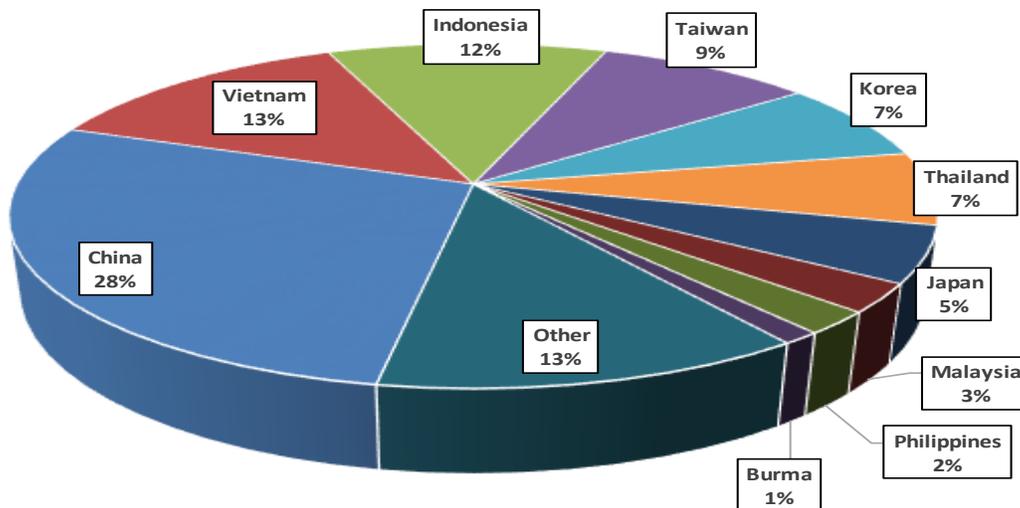
*50 percent of food aid from the United States is required to be shipped on U.S.-flag vessels.

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-August 2016

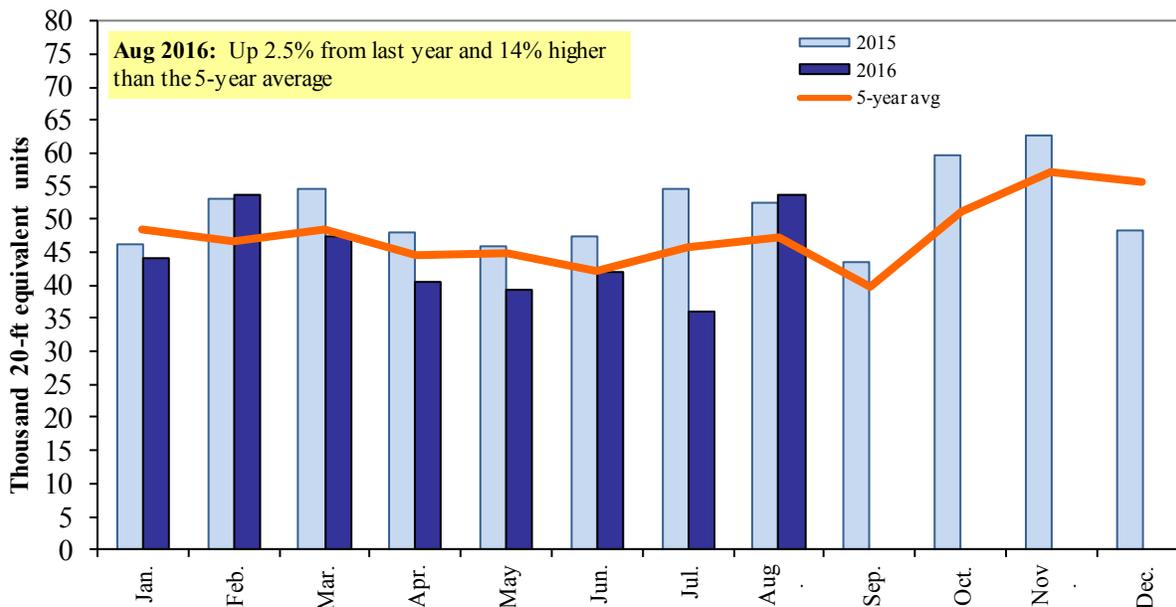


Source: USDA/Agricultural Marketing Service/Transportation Services Division analysis of Port Import Export Reporting Service (PIERS) data

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
Grain Exports		
Johnny Hill	johnny.hill@ams.usda.gov	(202) 690 - 3295
Ocean Transportation		
Surajudeen (Deen) Olowolayemo (Freight rates and vessels)	surajudeen.olowolayemo@ams.usda.gov	(202) 720 - 0119
April Taylor (Container movements)	april.taylor@ams.usda.gov	(202) 720 - 7880
Contributing Analysts		
Sergio Sotelo	sergioa.sotelo@ams.usda.gov	(202) 756 - 2577

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