



Grain Transportation Report

A weekly publication of the
Transportation and Marketing Programs/Transportation Services Branch

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www.ams.usda.gov/tmdtsb/grain

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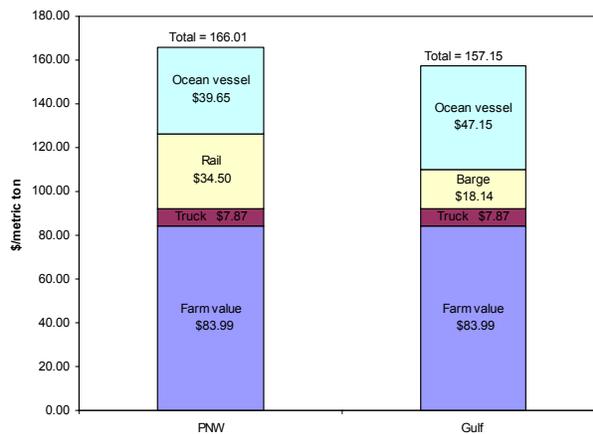
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High Ocean Freight Rates Increase the Cost of Shipping Corn to Japan. In the fourth quarter of 2003, the total landed cost of shipping corn to Japan from Minnesota through the Pacific Northwest (PNW) to Japan was \$166.01 (a 10-percent increase, compared with the third quarter of 2003) per metric ton and \$157.15 (a 10-percent increase, compared with the third quarter of 2003) per metric ton from Minnesota through the Gulf of Mexico (Gulf) (figure 1). The total landed cost (converted to metric tons) includes¹: the farm value of corn, truck rates, rail rates, barge rates, and ocean freight rates.

Figure 1 – Cost of shipping corn to Japan, 4th quarter 2003



The cost of transportation through the PNW (\$82.02) is 49 percent of the total landed cost and has increased by 29 percent from the third quarter of 2003 (table 1). The cost of transportation through the Gulf (\$73.16) is 47 percent of the total landed cost and has increased 31 percent from the third quarter of 2003 (table 2).

According to the Baltic Exchange, the average daily ocean freight rates for the Gulf route have been increasing since July 2003. The rates for the PNW increased continuously from September until December 2003. Factors contributing to higher ocean freight rates include increased global demand for

ocean transportation of iron ore and coal, especially to Asia, and decreased supply of bulk vessels. In addition, rising fuel costs and increased expansion in the Chinese economy continue to play significant roles in the bulk freight market. (Revised on April 29, 2004) Karla.Martin@usda.gov, Surajudeen.Olowolayemo@usda.gov

2003	4 th qtr	3 rd qtr	Percent change
\$/metric ton			
Truck	\$7.87	\$7.87	0
Rail	\$34.50	\$33.91	2
Ocean vessel	\$39.65	\$21.88	81
Total	\$82.02	\$63.66	29

2003	4 th qtr	3 rd qtr	Percent change
\$/metric ton			
Truck	\$7.87	\$7.87	0
Barge	\$18.14	\$14.60	24
Ocean vessel	\$47.15	\$33.35	41
Total	\$73.16	\$55.82	31

4th Quarter Conversion Factors¹

1 bushel = 56 pounds of corn
1 metric ton = 39.368 bushels
1 ton = 0.9071428 MT

Farm value – \$2.13 per bushel. Projected average October - December 2003 prices (2003/04 marketing year). Source: *World Agricultural Supply and Demand Estimates* (WAOB/USDA) - <http://www.usda.gov/oce/waob/wasde/wasde.htm>.

Truck rates - \$0.20 per bushel per 100 miles. Source: *Local Minnesota elevators*.

Barge rates – \$16.45 per ton = index*(1976 tariff benchmark rate per ton)/100. \$6.19 is the 1976 tariff benchmark rate. *Twin Cities is normally closed from December to mid-March 2004. Source: 'Grain Transportation Report,' AMS/USDA. www.ams.usda.gov/tmdtsb/grain.

Rail rates – \$0.85 per bushel. Source: *Tariff Rail Rates for Unit Train Shipments*. www.bnsf.com.

Ocean freight rates – \$39.65 (PNW) and \$47.15 (Gulf) per metric ton. Source: Baltic Exchange www.balticexchange.com.

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Grain Transportation Indicators

For more information contact: [Deen Olowolayemo](mailto:Deen.Olowolayemo@AMS.USDA) (202) 690-1328

Table 1--Grain transport cost indicators*

Week ending	Truck	Rail	Barge	Ocean	
				Gulf	Pacific
03/10/04	109	249	83	327	319
Compared with last week	unchanged	↑	↓	↑	↑

*Indicator: Base year 2000 = 100; Weekly updates include truck = diesel (\$/gallon); rail = nearby secondary rail market (\$/car); barge = spot Illinois River basis (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)

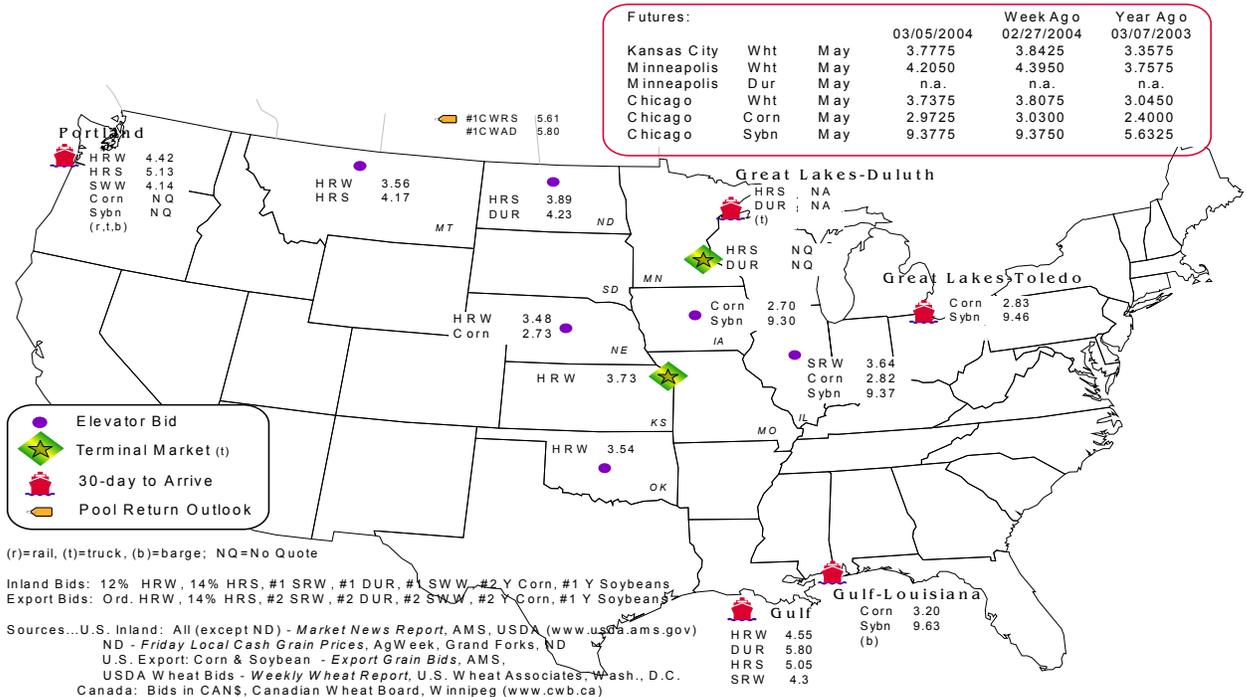
Commodity	Origin--destination	3/5/2004	2/27/2004
Corn	IL--Gulf	-0.38	-0.38
Corn	NE--Gulf	-0.47	-0.47
Soybean	IA--Gulf	-0.33	-0.44
HRW	KS--Gulf	-0.82	-0.77
HRS	ND--Portland	-1.24	-1.23

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

For more information contact: [Marvin Prater](#) (202) 690-6290 or [Johnny Hill](#) (202) 720-4211

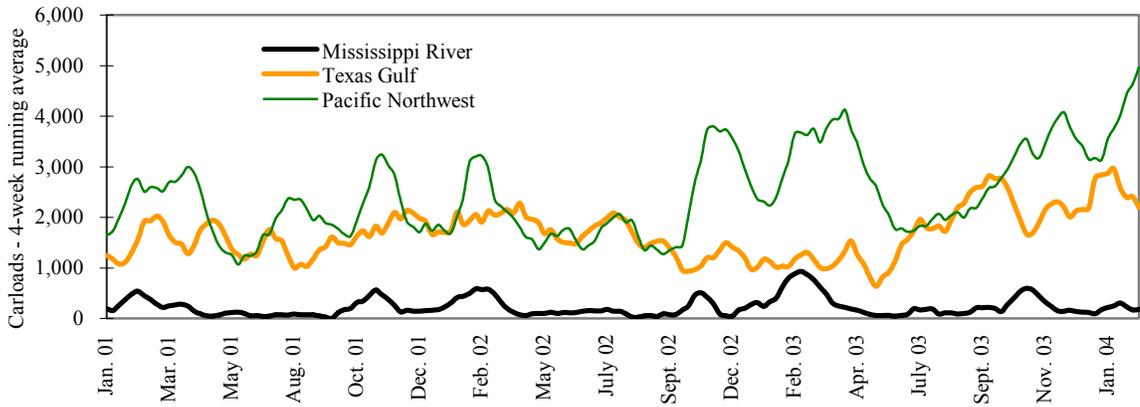
Table 3--Rail deliveries to port (carloads)*

Week ending	Mississippi Gulf	Texas Gulf	Pacific Northwest	Atlantic & East Gulf	Total
03/03/04	271	1,881	4,887	52	7,091
02/25/04	43	2,632	5,089	216	7,980
2004 YTD	1,837	23,006	37,656	2,711	65,210
2003 YTD	6,426	10,302	29,873	6,272	52,873
2004 as % of 2003	29	223	126	43	123
Total 2003**	14,934	88,118	150,530	20,509	274,091
Total 2002	10,937	84,625	111,832	20,842	228,236

Source: Transportation & Marketing Programs/AMS/USDA; (*) Incomplete Data; (**) Excludes 53rd week; YTD = year-to-date

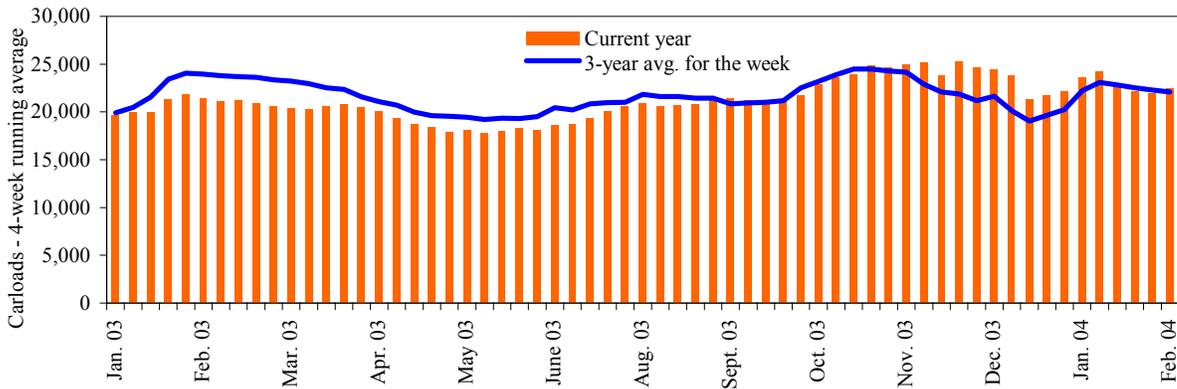
Railroads originate approximately 40 percent of U.S. grain shipments. Trends in these loadings are indicative of market conditions and expectations.

Figure 2
Rail deliveries to port



Source: Transportation & Marketing Programs/AMS/USDA

Figure 3
Total weekly U.S. grain car loadings for Class I railroads



Source: Association of American Railroads

Table 4--Class I rail carrier grain car bulletin (grain carloads originated)

Week ending	East		West			U.S. total	Canada	
	CSXT	NS	BNSF	KCS	UP		CN	CP
02/28/04	3,219	4,040	10,226	675	6,586	24,746	4,327	3,631
This week last year	2,881	2,410	7,839	402	5,887	19,419	3,458	3,252
2004 YTD	24,100	28,546	75,672	4,964	53,321	186,603	36,499	27,542
2003 YTD	23,845	26,172	64,400	2,945	53,564	170,926	25,925	26,966
2004 as % of 2003	101	109	118	169	100	109	141	102
Total 2003*	146,395	171,260	416,371	24,506	336,079	1,094,611	197,993	198,185

Source: Association of American Railroads (www.aar.org); YTD = year-to-date; * Excludes 53rd week

Table 5--Rail car auction offerings (\$/car)*

Delivery for:	Apr. 04	May 04	June 04
BNSF ¹			
COT/N. grain	no offer	no offer	no offer
COT/S. grain	no offer	no offer	no offer
UP ²			
GCAS/Region 1	no offer	no offer	\$172
GCAS/Region 2	no offer	\$26	\$86

*Average premium/discount to tariff, last auction

¹BNSF - COT = Certificate of Transportation

N includes: ID, MN, MT, ND, OR, SD, WA, WI, WY, and Manitoba, Canada.

S includes: ID, CO, IA, IL, KS, MO, NE, OK, TX, NM, AZ, CA, UT, and NV.

²UP - GCAS = Grain Car Allocation System

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

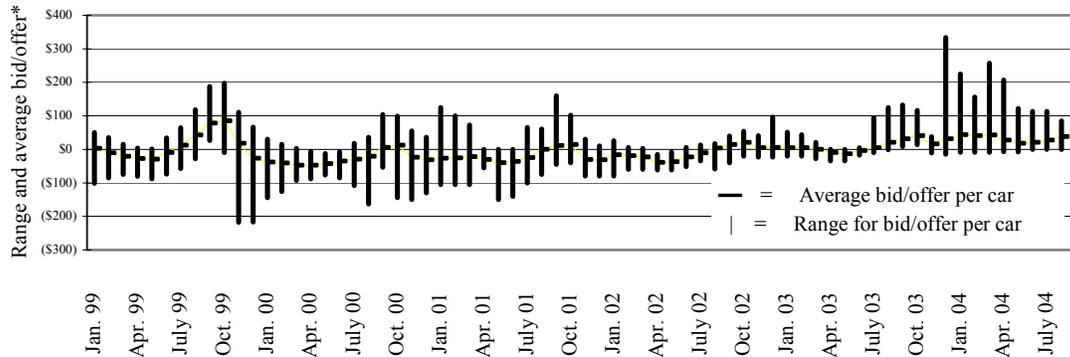
Region 2 includes: CO, IA, KS, MN, NE, WY, and Kansas City and St. Joseph, MO.

Source: Transportation & Marketing Programs/AMS/USDA

Rail service may be ordered directly from the railroad via **auction** for guaranteed service or tariff for nonguaranteed service or through the secondary market.

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
Secondary rail car market, delivery month-year



*up to 6 months of trading
 Source: Transportation & Marketing Programs/AMS/USDA

Average bid/offer is the simple average of all the weekly bids/offers over the entire period (up to 6 months) for guaranteed railcars that are traded for delivery in a particular month.

Range for bid/offer shows the range of average weekly bids/offers over the entire period (up to 6 months) for guaranteed railcars that are traded for delivery in a particular month.

Table 6--Weekly secondary rail car market (\$/car)*

Week ending	Delivery period			
	Apr. 04	May 04	June 04	July 04
BNSF-GF				
3/5/2004	\$100	\$68	\$55	\$60
Change from last week	\$38	\$17	\$21	\$23
UP-Pool				
3/5/2004	\$207	\$122	\$98	\$83
Change from last week	\$10	\$12	-\$15	-\$30

*Average premium/discount to tariff, \$/car-last week

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

Missing value = no bid quoted; GF = guaranteed freight; Pool = guaranteed pool

Sources: Transportation and Marketing Programs/AMS/USDA

Data from Atwood/ConAgra, Harvest States Co-op, James B. Joiner Co., Tradewest Brokerage Co.

Table 7--Tariff rail rates for unit and shuttle train shipments*

Effective date:					
3/1/2004					
	Origin	Destination	Rate/car	Rate/metric ton	Rate/bushel**
<u>Unit train*</u>					
Wheat	Minneapolis, MN	Houston, TX	\$2,020	\$22.27	\$0.61
	Kansas City, MO	Galveston, TX	\$1,820	\$20.06	\$0.55
	Minneapolis, MN	Portland, OR	\$4,148	\$45.72	\$1.24
	St. Louis, MO	Houston, TX	\$1,945	\$21.44	\$0.58
	Kansas City, MO	Laredo, TX	\$2,280	\$25.13	\$0.68
	Chicago, IL	Albany, NY	\$1,834	\$20.22	\$0.55
	Chicago, IL	Richmond, VA	\$1,961	\$21.62	\$0.59
Corn	Minneapolis, MN	Portland, OR	\$3,240	\$35.71	\$0.91
	Chicago, IL	Baton Rouge, LA	\$2,736	\$30.16	\$0.77
	Council Bluffs, IA	Baton Rouge, LA	\$2,170	\$23.92	\$0.61
	Evansville, IN	Raleigh, NC	\$1,841	\$20.29	\$0.52
	Council,Bluffs, IA	Stockton, CA	\$3,496	\$38.54	\$0.98
	Kansas City	Dalhart, TX	\$1,745	\$19.24	\$0.49
	Columbus, OH	Raleigh, NC	\$1,750	\$19.29	\$0.49
	Des Moines, IA	Laredo, TX	\$2,930	\$32.30	\$0.82
Soybeans	Minneapolis, MN	Portland, OR	\$3,310	\$36.49	\$0.99
	Chicago, IL	Baton Rouge, LA	\$2,736	\$30.16	\$0.82
	Council Bluffs, IA	Baton Rouge, LA	\$2,799	\$30.85	\$0.84
	Des Moines, IA	Laredo, TX	\$2,930	\$32.30	\$0.88
	Evansville, IN	Raleigh, NC	\$1,841	\$20.29	\$0.55
	Chicago, IL	Raleigh, NC	\$2,441	\$26.91	\$0.73
<u>Shuttle train*</u>					
Wheat	St. Louis, MO	Houston, TX	\$1,750	\$19.29	\$0.53
	Minneapolis, MN	Portland, OR	\$3,993	\$44.01	\$1.20
Corn	Fremont, NE	Houston, TX	\$2,425	\$26.73	\$0.68
	Minneapolis, MN	Portland, OR	\$3,090	\$34.06	\$0.87
Soybeans	Council Bluffs, IA	Houston, TX	\$2,425	\$26.73	\$0.68
	Minneapolis, MN	Portland, OR	\$3,110	\$34.28	\$0.87

*A unit train refers to shipments of at least 52 cars. Shuttle train rates are available for qualified shipments of more than 100 cars that meet railroad efficiency requirements.

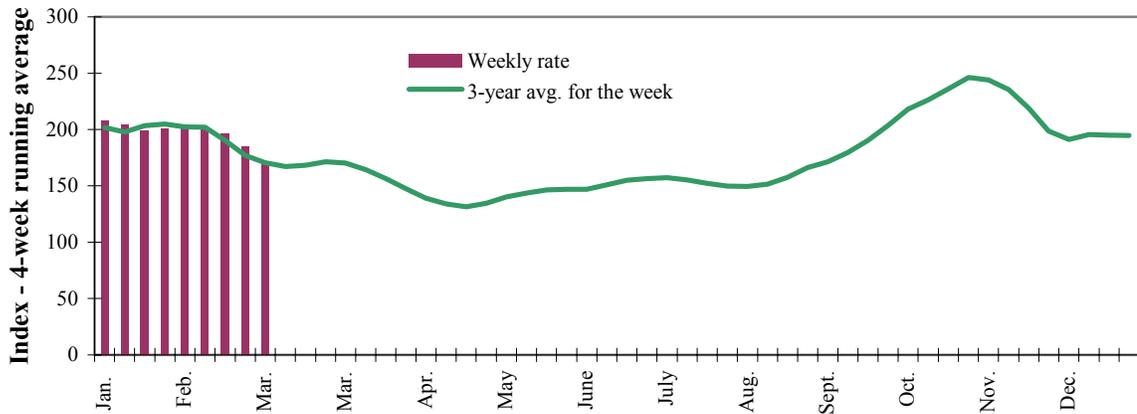
**Approximate load per car = 100 short tons: corn 56 lbs./bu., wheat & soybeans 60 lbs./bu.

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

Barge Transportation

For more information contact: [Nick Marathon](#) (202) 690-0331 or [Deen Olowolayemo](#) (202) 690-1328

Figure 5
Illinois River barge rate index - quotes



Note: Index = percent of tariff rate
 Source: Transportation & Marketing Programs/AMS/USDA

The **Illinois River barge rate index** averaged 183 percent of the **benchmark tariff rates** between 1999 and 2001, based on weekly market quotes. The **index**, along with **rate quotes** and **futures market bids** are indicators of grain transport supply and demand.

Table 8--Barge rate quotes: southbound barge freight

Location	3/3/2004	2/25/2004	April '04	June '04
Twin Cities	0	0	0	189
Mid-Mississippi	0	0	181	166
Illinois River	160	161	164	155
St. Louis	130	130	134	131
Lower Ohio	126	125	128	125
Cairo-Memphis	116	120	118	121

Index = percent of tariff, based on 1976 tariff benchmark rate
 Source: Transportation & Marketing Programs/AMS/USDA

Figure 6
Benchmark tariff rates

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

Select applicable index from market quotes included in tables on this page. The 1976 benchmark rates per ton are provided in map (see figure 6).

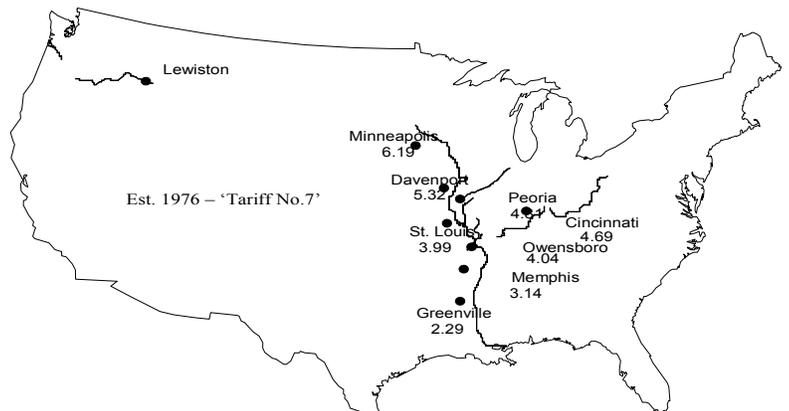


Table 9--Barge futures market (US\$)*

Week ending	River/region	Contract period	Index rate	
			Futures	Cash
3/9/2004	St. Louis	Apr.	n/a	140
		June	n/a	140
		Aug.	n/a	160
		Oct.	n/a	235
		Dec.	n/a	155
		Apr.	n/a	153
	Illinois River	June	n/a	155
		Aug.	n/a	175
		Oct.	n/a	258
		Dec.	n/a	180

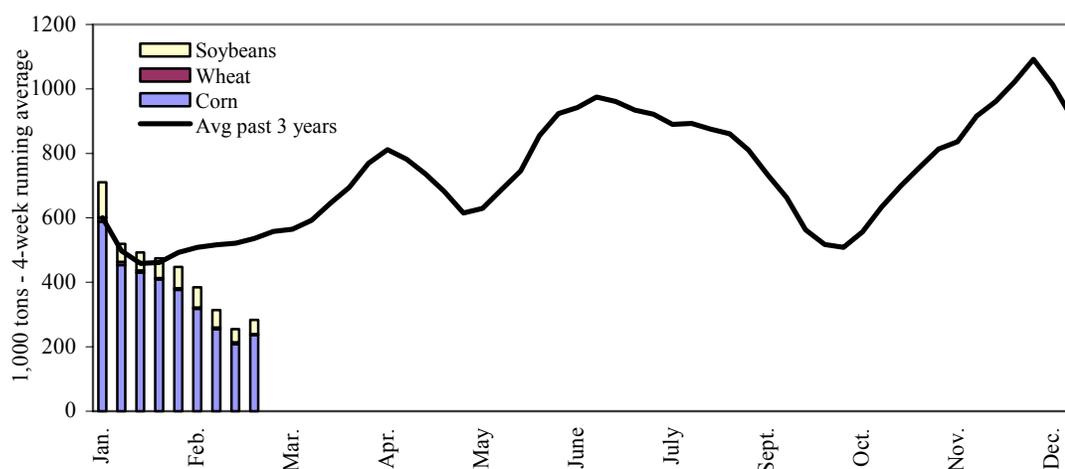
*Southbound barge freight nominal/cash basis values (US\$)

Note: Index = percent of tariff, based on 1976 tariff benchmark rate

Source: Merchants Exchange of St. Louis (www.merchants-exchange.com)

Figure 7

Barge movements on the Mississippi River (Lock 27 - Granite City, IL)



Source: Transportation & Marketing Programs/AMS/USDA

Table 10--Barge grain movements (1,000 tons)

Week ending 02/28/04	Corn	Wheat	Soybean	Total
Mississippi River				
Rock Island, IL (L15)	0	0	0	0
Winfield, MO (L25)	0	0	0	0
Alton, IL (L26)	317	0	75	393
Granite City, IL (L27)	353	0	77	432
Illinois River (L8)	226	5	54	286
Ohio River (L52)	138	6	52	204
Arkansas River (L1)	0	26	14	204
2004 YTD	3,954	409	1,286	5,816
2003 YTD	3,765	323	2,152	6,500
2004 as % of 2003 YTD	105	127	60	89
Total 2003	29,898	2,787	9,146	42,526

YTD (year-to-date) and calendar year total includes Miss/27, Ohio/52, and Ark/1.

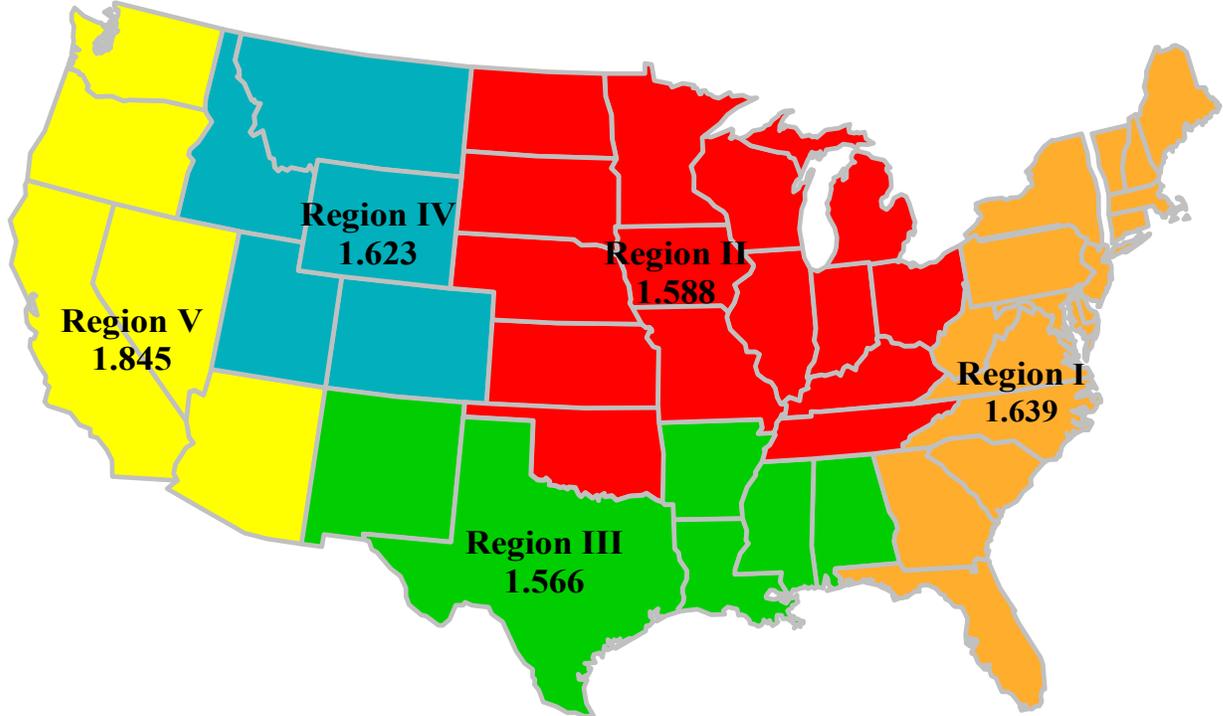
Source: U.S. Army Corp of Engineers (www.mvr.usace.army.mil/mvrmi/omni/webrpts/default.asp)

Truck Transportation

For more information contact: [Karla Martin](#) (202) 720-8264

Figure 8

Retail on-highway diesel prices (US\$/gallon), week ending 03/08/04



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

The weekly **diesel price** provides a proxy for trends in U.S. truck rates. Diesel fuel is a significant expense for truck grain movements, accounting for 37 percent of the estimated variable cost.

Table 11--Retail on-highway diesel prices*, week ending 03/08/04 (US\$/gallon)

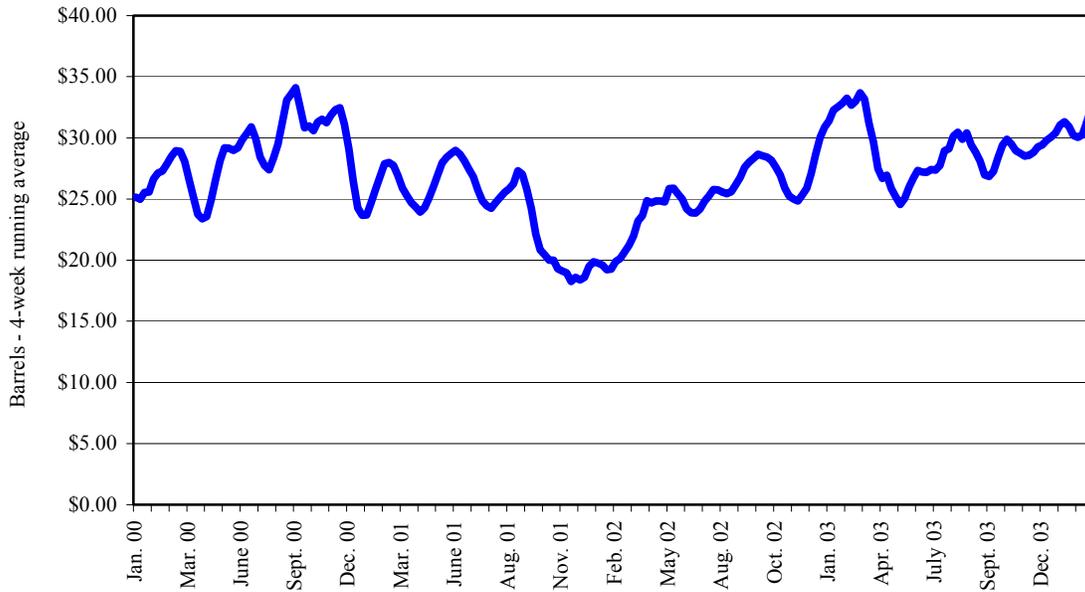
Region	Location	Price	Change from	
			Week ago	Year ago
I	East Coast	1.639	0.010	-0.176
	New England	1.762	-0.005	-0.239
	Central Atlantic	1.740	0.004	-0.219
	Lower Atlantic	1.584	0.013	-0.153
II	Midwest	1.588	0.009	-0.150
III	Gulf Coast	1.566	0.017	-0.131
V	West Coast	1.845	-0.006	-0.041
	California	1.927	-0.012	0.061
Total	U.S.	1.628	0.009	-0.143

*Diesel fuel prices include all taxes.

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

Figure 9

Weekly Brent crude price, Friday close (US\$/barrel)



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

Crude oil price is an indicator in future diesel price trends.

Light sweet crude is exchanged on the New York Mercantile Exchange. **Brent Crude**, a blend of North Sea oils, is traded on the International Petroleum Exchange in London.

Table 12--Crude oil prices* (US\$/barrel)

	3/8/2004	3/1/2004	% Change
Light Sweet Crude (NYMEX)	35.40	35.77	-1.03
Brent Crude	33.69	33.63	0.18

*U.S. refiner crude acquisition cost, composite domestic & import; n/a = data not available

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

Grain Exports

For more information contact: [Johnny Hill](#) (202) 720-4211

Table 13--U.S. unshipped export balances (1,000 metric tons)

Week ending	Wheat						Corn	Soybeans	Total
	HRW	SRW	HRS	SWW	DUR	All wheat			
2/26/2004	2,252	961	1,386	902	173	5,673	9,094	3,673	18,440
This week year ago	1,003	408	1,186	525	150	3,272	5,465	4,445	13,182
Commulative exports-crop year									
2003/04 YTD	9,475	2,786	4,897	3,701	799	21,658	23,745	19,111	64,514
2002/03 YTD	5,486	2,261	4,914	2,693	560	15,914	19,904	19,861	55,679
2003/04 as % of 2002/03	173	123	100	137	143	136	119	96	116
2002/03 Total	6,896	2,899	6,645	3,517	720	20,677	39,646	28,908	89,231
2001/02 Total	8,704	5,485	5,554	3,127	1,133	24,003	47,460	29,838	101,301

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

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

Figure 10

U.S. grain, unshipped export balance, including wheat, corn, and soybean sales



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

Table 14--Select U.S. port regions - grain inspections for export (1,000 metric tons)

Week ending	Pacific Region			Mississippi Gulf			Texas Gulf			Port Region total		
	Wheat	Corn	Soybeans	Wheat	Corn	Soybeans	Wheat	Corn	Soybeans	Pacific	Mississippi	Texas
03/04/04	165	300	147	164	1,040	198	200	0	0	612	1,402	200
2004 YTD	2,290	1,700	1,362	1,416	7,045	4,223	2,197	44	0	5,353	12,684	2,241
2003 YTD	1,368	1,036	1,424	987	5,285	6,992	820	8	11	3,828	13,265	839
2004 as % of 2003	167	164	96	143	133	60	268	542	0	140	96	267
2003 Total	8,764	5,450	5,114	5,855	30,352	18,972	7,032	746	103	19,328	55,179	7,880

Source: Federal Grain Inspection Service/USDA (www.usda.gov/gipsa); YTD: year-to-date

The United States exports approximately one-quarter of the grain it produces. On average, it 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. Over 60 percent of these U.S. export grain shipments departed through the Mississippi Gulf region in 2003.

Figure 11
U.S. grain inspected for export, including wheat, corn, and soybeans



Source: Federal Grain Inspection Service/USDA (www.usda.gov/gipsa)

Ocean Transportation

For more information contact: [Deen Olowolayemo](#) (202) 690-1328 (ocean freight rates) or [April Taylor](#) (202) 690-1326 (container rates)

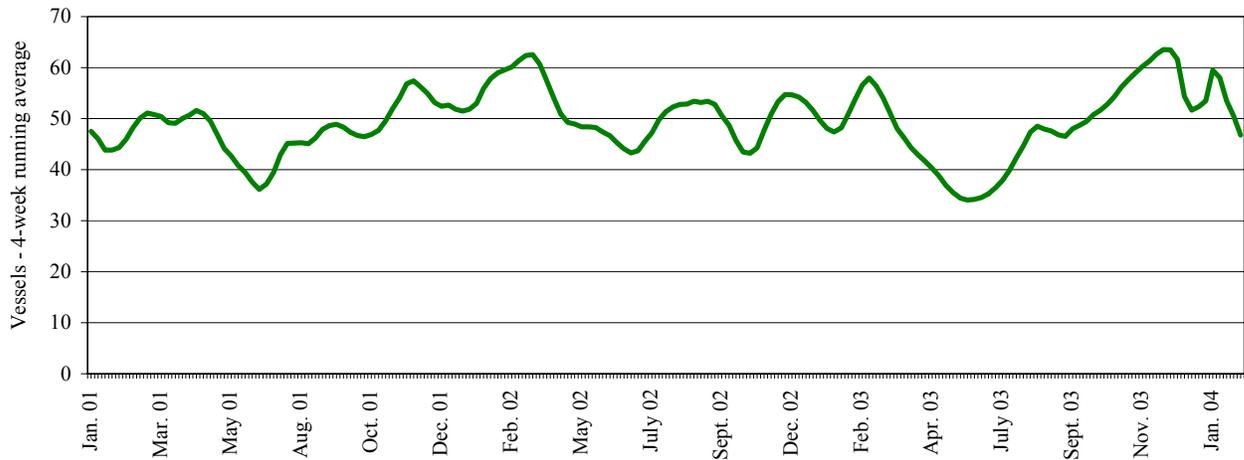
Table 15--Weekly port region grain ocean vessel activity (number of vessels)

Date	Gulf			Pacific Northwest	Vancouver B.C.
	In port	Loaded 7-days	Due next 10-days	In port	In port
3/4/2004	23	73	65	10	4
2/26/2004	26	45	78	6	4
2003 range	(11..47)	(30..76)	(39..93)	(3..13)	(1..15)
2003 avg.	31	49	62	9	6

Source: Transportation & Marketing Programs/AMS/USDA

Figure 12

Gulf Port grain vessel loading (past 7 days)



Source: Transportation & Marketing Programs/AMS/USDA

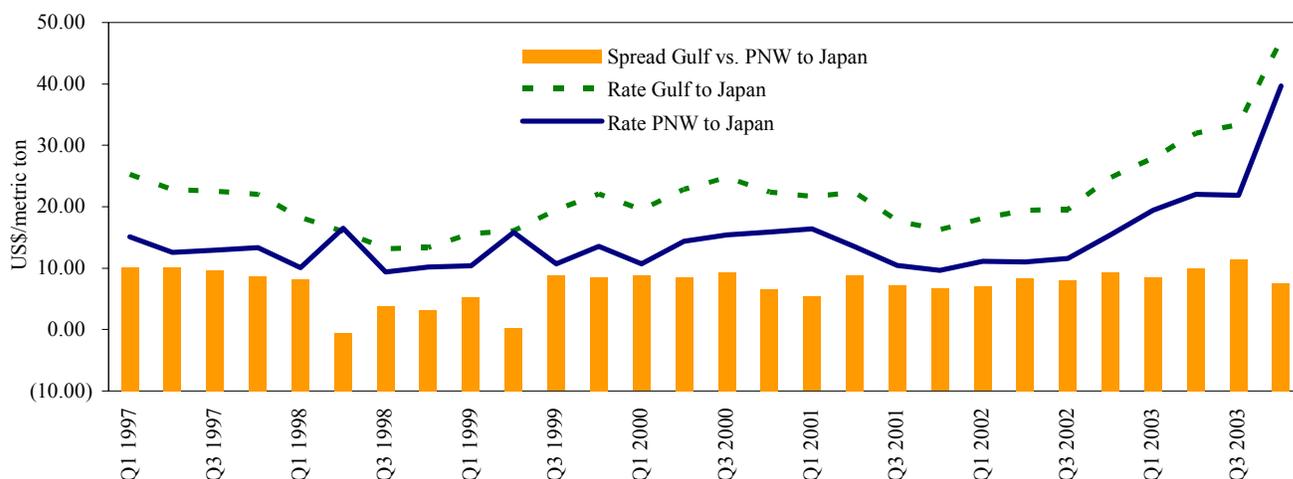
Table 16--Quarterly ocean freight rates (average rates & percentage changes) (US\$/metric ton)

Countries/ regions	2003 4th qtr	2002 4th qtr	Percent change	Countries/ regions	2003 4th qtr	2002 4th qtr	Percent change
Gulf to				Pacific NW to			
Japan	\$41.83	\$24.75	69	Japan	---	\$15.39	---
Taiwan	\$44.00	---	---				
N. Europe	---	\$18.07	---	Argentina/Brazil to			
N. Africa	\$35.00	\$18.33	91	Med. Sea	\$33.38	\$22.00	75
Med. Sea	\$31.75	---	---	N. Europe	---	\$22.63	---

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

Figure 13

Grain vessel rates, U.S. to Japan



Source: Baltic Exchange (www.balticexchange.com)

Table 17--Ocean freight rates for selected shipments, week ending 03/06/04

Export region	Import region	Grain	Month	Volume loads (metric tons)	Freight rate (\$/metric ton)
U.S. Gulf	Peru*	Grains	Mar. 9/18	9,700	55.59
U.S. Gulf	Taiwan	Hvy grain	Mar. 10/20	56,000	68.00
U.S. Gulf	Nicaragua	Wheat	Mar 1/10	12,290	69.00
U.S. Gulf	Japan	Hvy grain	Mar. 10/20	54,000	75.00
U.S. Gulf	Egypt Med	Hvy grain	Mar. 18/25	55,000	46.50

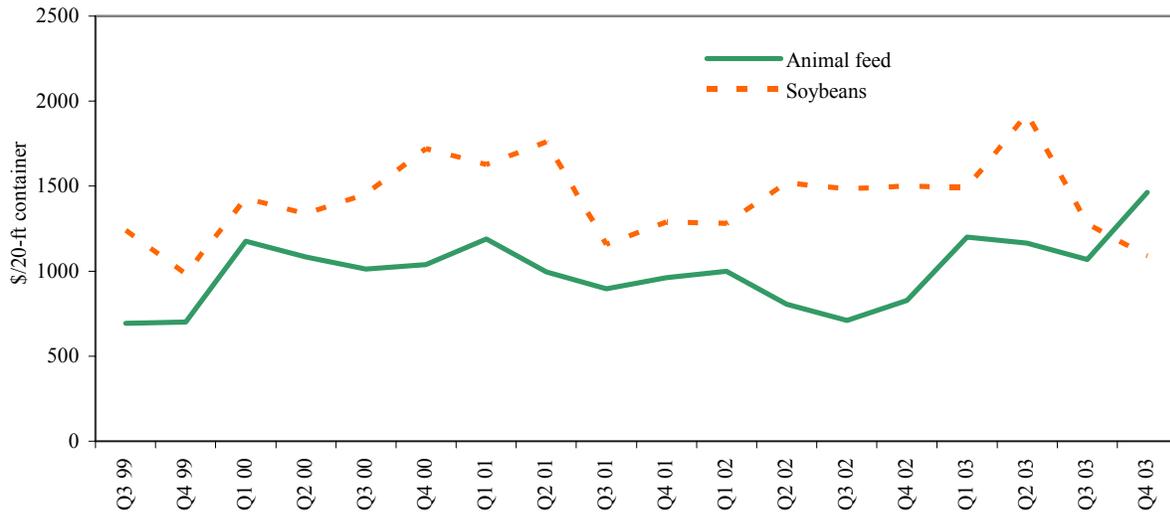
Rates shown are for metric ton (2,204.62 lbs. = 1 metric ton), F.O.B., except where otherwise indicates; op = option

*Most food aid from the United States is required to be shipped on U.S. flag vessels. The vessels are limited in availability resulting in higher rates. In addition, destinations receiving food aid generally lack adequate port unloading facilities, requiring the vessel to remain in port for a longer duration than normal.

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

Figure 14

Weighted average rates¹ for containerized shipments of animal feed and soybeans to selected Asian countries



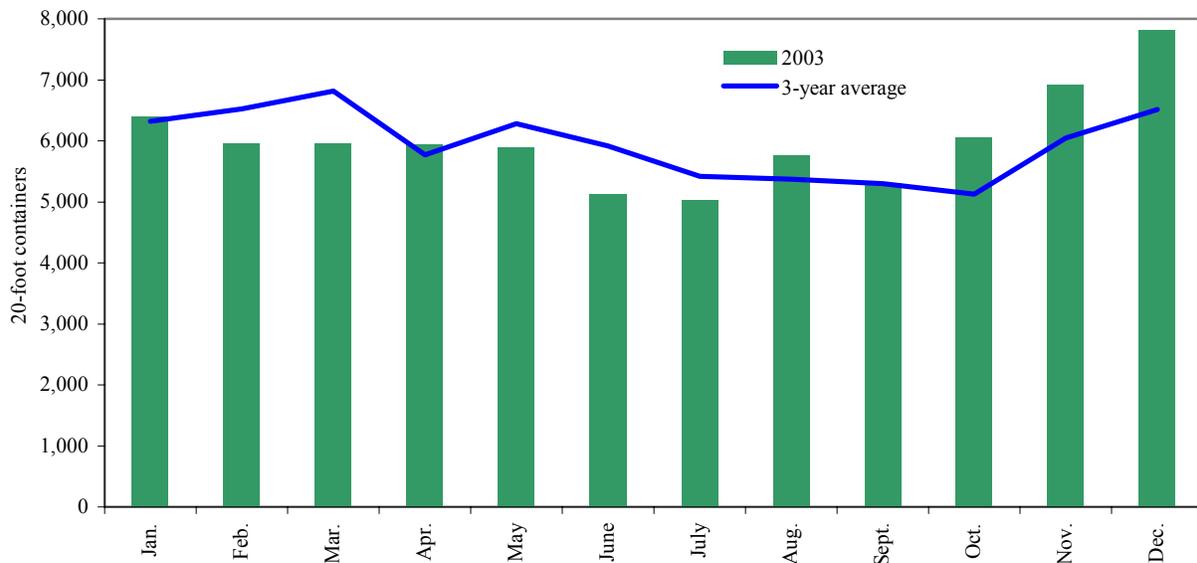
¹Animal Feed: Bangkok-Thailand (4%), Busan-Korea (24%), Hong Kong (14%), Keelung-Taiwan (14%), Tokyo-Japan (44%), and soybeans: Bangkok-Thailand (3%), Busan-Korea (7%), Hong Kong (1%), Keelung-Taiwan (24%), Tokyo-Japan (65%) January-December 2003.

Source: Ocean Rate Bulletin, Transportation & Marketing Programs/AMS/USDA

Container ocean freight rates – average rate per twenty-foot equivalent unit (TEU) weighted by shipping line market share and trade route.

Figure 15

Monthly shipments of containerized grain for 2003, compared with a 3-year average



Source: Port Import Export Reporting Service (PIERS), *Journal of Commerce*, 2003