



Brazil Soybean Transportation

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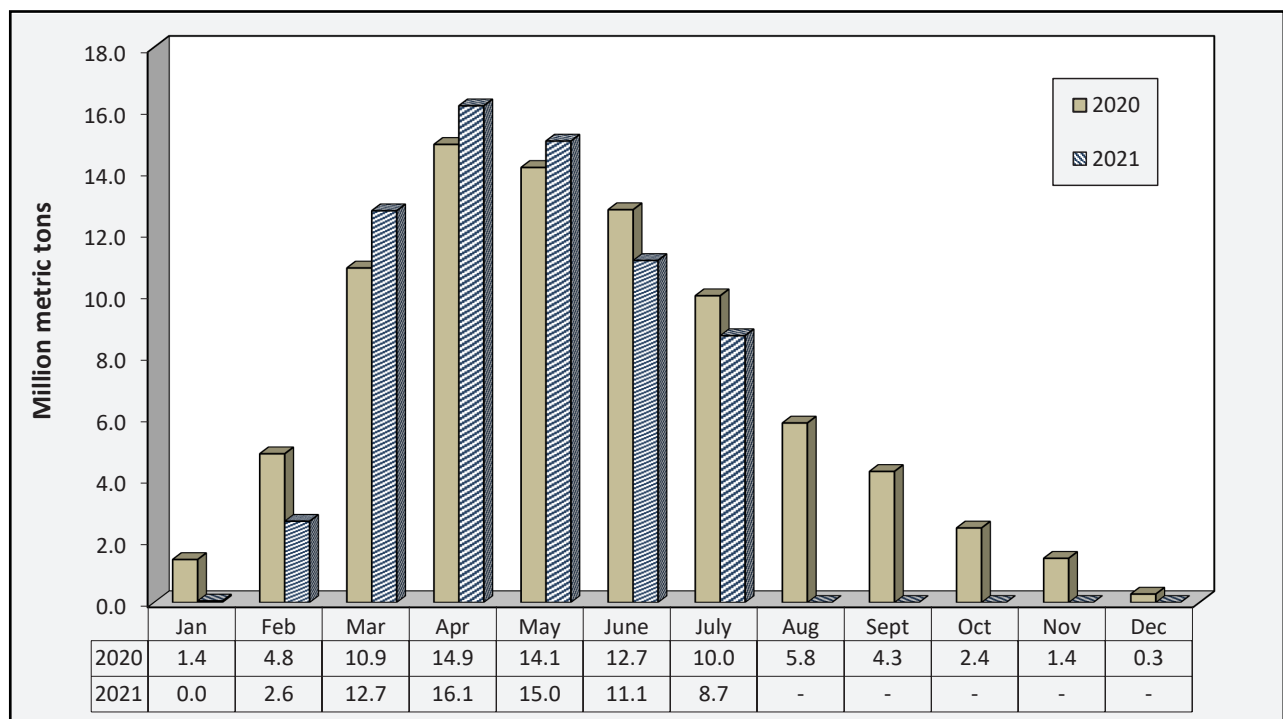
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Surge in Ocean Rates and Strong Chinese Soybean Demand Drive Rising Transportation Costs

Brazil’s soybean transportation costs increased mostly because of a significant rise in ocean rates (tables 1, 1a, 2, 2a, and 9). Strong global commodity movements raised vessel demand, as well as higher fuel prices, and spurred a sharp rise in ocean freight rates. In May, Brazil’s iron ore supply improved after production recovered following the repair of a collapsed dam powering a major iron mine. This rally boosted the demand for vessels ([Grain Transportation Report \(GTR\), July 15, 2021](#)). From second quarter 2020 to second quarter 2021 (year to year), the cost of shipping a metric ton (mt) of soybeans 100 miles by truck increased by 8 percent—from \$5.52 per mt to \$5.94 per mt (table 8).

For the route from Sorriso, Mato Grosso (the largest Brazilian soybean-producing State), to Santos, second quarter 2021 soybean transportation costs to Shanghai, China, represented 17-19 percent of the total landed costs, compared with 34 percent in 2008 and 45 percent in 2006. Year to year, soybean transportation costs to Shanghai, China—as a share of total landed costs—declined by 17-20 percent for the route from northern Mato Grosso to Santos and declined by 12 percent from Santarém and Barcarena.

Figure 1. Brazil average monthly soybean exports, 2020-21



Note: Hyphens designate data were unavailable.

Source: Comex Stat, Ministério da Economia.



Brazil Soybean Transportation

In the first 6 months of 2021, Brazil exported nearly 58 mmt of soybeans, valued at \$24.7 billion (fig. 1) ([Comex Stat, Ministério da Economia](#)).¹ During this time, Brazil exported 39.8 mmt of soybeans to China, valued at \$17.0 billion, nearly 6 percent less than its total of 42.2 mmt in from January to June 2020. The next highest shares of Brazil's soybean exports (in declining order) went to Spain, the Netherlands, Turkey, and Thailand. The southern ports of Santos, Rio Grande, Paranaguá, and São Francisco do Sul still dominate the soybean trade to China, accounting for 74 percent of Brazil's soybean exports to China. Also, in the first 6 months of 2021, the northeastern ports of São Luís, Vitória, Salvador, and Barcarena accounted for 25 percent of soybean exports to China. The Amazon River ports of Manaus and Santarém exported a small amount to China. These ports exported mostly to the European Union (83 percent), North America (9 percent), and Africa (6 percent). The ocean freight spread (or cost difference) between the Shanghai routes from the northeastern port of São Luís (\$55.60/mt) and the port of Santos (\$50.60/mt) was \$5/mt (table 9).

Year to year, average Brazilian soybean export prices rose by 32 percent, from \$336.34 per mt to \$443.44 per mt. Brazilian farmers have benefited from the still-low value of the real against the U.S. dollar, because soybeans are priced in U.S. dollars but paid in reais. Measured in U.S. dollars, soybean average farm gate prices increased nearly 76 percent, from \$285.44/mt to \$501.85/mt year to year. Year to year, the Brazilian real strengthened about 2 percent against the U.S. dollar, from R\$5.38 per U.S. dollar to R\$5.29 per U.S. dollar ([Brazil Central Bank](#)). However, the real remained about 35 percent weaker than it was in second quarter 2019 (R\$3.92 per U.S. dollar). The continued-weak real and strong Chinese demand for soybeans led to higher domestic soybean prices in Brazil. On average, in reais, second-quarter 2021 farm gate prices increased nearly 73 percent, from R\$1,536.62/mt to R\$2,656.20/mt ([Companhia Nacional de Abastecimento \(CONAB\)](#)).

Update on BR-163

The 663-mile (1,067 km) stretch of BR-163 from Sorriso, North Mato Grosso, (Brazil's largest grain producer) to Miritituba was completed in late November 2019. Currently, using this new route, it takes about 2 days to ship grain by truck to Miritituba.

Current status: On July 8, 2021, Consortium Via Brasil won the auctioned contract to operate Brazilian toll road BR 163. The concession is for 10 years. According to [ESALQ-LOG](#), the Northern Arc toll rates will increase about \$2.85 (R\$ 15) per metric ton.² For example, for the Sorriso, North Mato Grosso, to Itaituba route, the average freight rate was \$38.44/mt in the first half of 2021. With the new tolls, the rate would increase about 7.5 percent to \$41.29/mt. For more information, contact Delmy L. Salin at delmy.salin@usda.gov.

¹ In this report, the source of Brazil export data is the Comex Stat, Ministério da Economia.

² Exchange rate of 5.26 real per U.S. dollar, July 8, 2021.



Brazil Soybean Transportation

Table 1. Quarterly costs of transporting Brazilian soybeans from the southern ports to Shanghai, China

	2020 2nd qtr.	2021 2nd qtr.	% Change 2020-21	2020 2nd qtr.	2021 2nd qtr.	% Change 2020-21
	North MT¹ - Santos² by truck —US\$/mt—			Northwest RS¹ - Rio Grande² —US\$/mt—		
Truck	59.53	66.24	11.3	19.03	21.09	10.9
Ocean	27.08	50.60	86.9	28.58	51.00	78.4
Total transportation	86.61	116.84	34.9	47.61	72.09	51.4
Farm gate price ³	287.53	495.57	72.4	297.17	505.86	70.2
Landed cost	374.13	612.41	63.7	344.78	577.95	67.6
Transport % of landed cost	23.1	19.1	-17.6	13.8	12.5	-9.7
	North MT¹ - Santos² by rail —US\$/mt—			North MT¹ - Paranaguá² —US\$/mt—		
Truck	21.82	23.05	5.7	58.03	65.99	13.7
Rail ⁴	30.58	30.44	-0.5	-	-	-
Ocean	27.08	50.60	86.9	28.83	52.40	81.8
Total transportation	79.48	104.10	31.0	86.86	118.39	36.3
Farm gate price ³	287.53	495.57	72.4	287.53	495.57	72.4
Landed cost	367.00	599.67	63.4	374.39	613.96	64.0
Transport % of landed cost	21.7	17.4	-19.8	23.2	19.3	-16.9

¹Producing regions: RS = Rio Grande do Sul and MT= Mato Grosso.

²Export port.

³The source of the farm gate price is the Brazilian Government, Companhia Nacional de Abastecimento (CONAB).

⁴In Brazil, there are no public/official rail tariff rates. Rail rates can be up to 30 percent lower than truck rates, depending on volumes hauled and the terms of contracts signed between the railroad company and shippers.

Note: qtr. = quarter. mt = metric ton.

Source: University of São Paulo, Escola Superior de Agricultura “Luiz de Queiroz,” Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.



Brazil Soybean Transportation

Table 1a. Quarterly costs of transporting Brazilian soybeans from the northern and northeastern ports to Shanghai, China

	2020 2nd qtr.	2021 2nd qtr.	% Change 2020-21	2020 2nd qtr.	2021 2nd qtr.	% Change 2020-21
	North MT¹ - Santarém² —US\$/mt—			South MA¹ - São Luís² —US\$/mt—		
Truck	38.23	42.08	10.1	27.02	28.77	6.5
Ocean	28.08	56.60	101.6	28.33	55.60	96.3
Total transportation	66.31	98.68	48.8	55.35	84.37	52.4
Farm gate price ³	287.53	495.57	72.4	294.95	503.18	70.6
Landed cost	353.84	594.25	67.9	350.31	587.55	67.7
Transport % of landed cost	18.7	16.6	-11.4	15.8	14.4	-9.1
	Southwest PI¹ - São Luís² —US\$/mt—			North MT¹ - Barcarena² —US\$/mt—		
Truck	29.98	34.77	16.0	33.27	38.44	15.6
Barge ⁴	-	-	-	14.36	15.79	10.0
Ocean	28.33	55.60	96.3	28.33	58.20	105.4
Total transportation	58.31	90.37	55.0	75.96	112.44	48.0
Farm gate price ³	286.59	489.79	70.9	287.53	495.57	72.4
Landed cost	344.90	580.17	68.2	363.48	608.01	67.3
Transport % of landed cost	16.9	15.6	-7.9	20.9	18.5	-11.5

¹Producing regions: MT= Mato Grosso, PI = Piauí, and MA = Maranhão.

²Export port.

³The source of the farm gate price is the Brazilian Government, Companhia Nacional de Abastecimento (CONAB).

⁴In Brazil, there are no public/official Barge rates. Barge rates can be up to 60 percent lower than truck rates, depending on volumes hauled and the terms of contracts signed between the barge company and shippers. The distance is in nautical miles.

Note: qtr. = quarter. mt = metric ton.

Source: University of São Paulo, Escola Superior de Agricultura “Luiz de Queiroz,” Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.



Brazil Soybean Transportation

Table 2. Quarterly costs of transporting Brazilian soybeans from the southern ports to Hamburg, Germany

	2020 2nd qtr.	2021 2nd qtr.	% Change 2020-21	2020 2nd qtr.	2021 2nd qtr.	% Change 2020-21
	North MT ¹ - Santos ² by truck —US\$/mt—			Northwest RS ¹ - Rio Grande ² —US\$/mt—		
Truck	59.53	66.24	11.3	19.03	21.09	10.9
Ocean	20.50	42.70	108.3	20.75	43.80	111.1
Total transportation	80.03	108.94	36.1	39.78	64.89	63.1
Farm gate price ³	287.53	495.57	72.4	297.17	505.86	70.2
Landed cost	367.55	604.51	64.5	336.95	570.75	69.4
Transport % of landed cost	21.8	18.0	-17.2	11.8	11.4	-3.7
	North MT ¹ - Santos ² by rail —US\$/mt—			North MT ¹ - Paranaguá ² —US\$/mt—		
Truck	21.82	23.05	5.7	58.03	65.99	13.7
Rail ⁴	30.58	30.44	-0.5	-	-	-
Ocean	20.50	42.70	108.3	21.50	41.90	94.9
Total transportation	72.90	96.20	32.0	79.53	107.89	35.7
Farm gate price ³	287.53	495.57	72.4	287.53	495.57	72.4
Landed cost	360.42	591.77	64.2	367.06	603.46	64.4
Transport % of landed cost	20.2	16.3	-19.6	21.7	17.9	-17.5

¹Producing regions: RS = Rio Grande do Sul and MT= Mato Grosso.

²Export port.

³The source of the farm gate price is the Brazilian Government, Companhia Nacional de Abastecimento (CONAB).

⁴In Brazil, there are no public/official rail tariff rates. Rail rates can be up to 30 percent lower than truck rates, depending on volumes hauled and the terms of contracts signed between the railroad company and shippers.

Note: qtr. = quarter. mt = metric ton.

Source: University of São Paulo, Escola Superior de Agricultura “Luiz de Queiroz,” Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.



Brazil Soybean Transportation

Table 2a. Quarterly costs of transporting Brazilian soybeans from the northern and northeastern ports to Hamburg, Germany

	2020 2nd qtr.	2021 2nd qtr.	% Change 2020-21	2020 2nd qtr.	2021 2nd qtr.	% Change 2020-21
	North MT¹ - Santarém² —US\$/mt—			South MA¹ - São Luís² —US\$/mt—		
Truck	38.23	42.08	10.1	27.02	28.77	6.5
Ocean	16.00	45.90	186.9	17.50	40.00	128.6
Total transportation	54.23	87.98	62.2	44.52	68.77	54.5
Farm gate price ³	287.53	495.57	72.4	294.95	503.18	70.6
Landed cost	341.76	583.55	70.7	339.48	571.95	68.5
Transport % of landed cost	15.9	15.1	-5.0	13.1	12.0	-8.3
	Southwest PI¹ - São Luís² —US\$/mt—			North MT¹ - Barcarena² --US\$/mt--		
Truck	29.98	34.77	16.0	33.27	38.44	15.6
Barge ⁴	-	-	-	14.36	15.79	10.0
Ocean	17.50	40.00	128.6	15.00	38.90	159.3
Total transportation	47.48	74.77	57.5	62.63	93.14	48.7
Farm gate price ³	286.59	489.79	70.9	287.53	495.57	72.4
Landed cost	334.07	564.57	69.0	350.15	588.71	68.1
Transport % of landed cost	14.2	13.2	-6.8	17.9	15.8	-11.5

¹Producing regions: MT= Mato Grosso, PI = Piauí, and MA = Maranhão.

²Export port.

³The source of the farm gate price is the Brazilian Government, Companhia Nacional de Abastecimento (CONAB).

⁴In Brazil, there are no public/official Barge rates. Barge rates can be up to 60 percent lower than truck rates, depending on volumes hauled and the terms of contracts signed between the barge company and shippers. The distance is in nautical miles.

Note: qtr. = quarter. mt = metric ton.

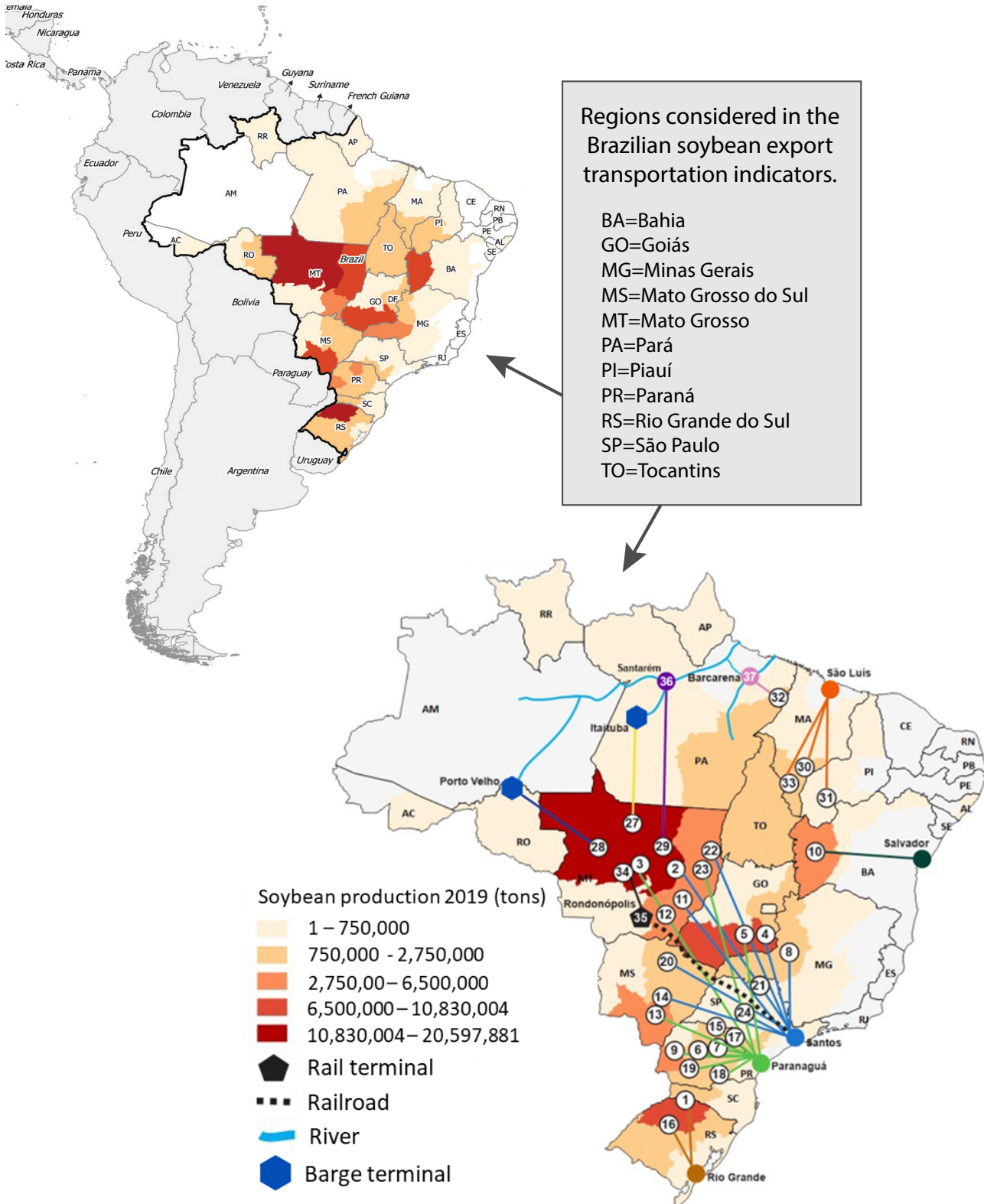
Source: University of São Paulo, Escola Superior de Agricultura "Luiz de Queiroz," Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.



Brazil Soybean Transportation

Indicators

Figure 2. Routes¹ and regions considered in the Brazilian soybean export transportation indicator²



¹Table defining routes by number is shown on page 12.

²Regions comprised about 79 percent of Brazilian soybean production, 2019 (Brazilian Institute of Geography and Statistics—Produção Agrícola Municipal).



Brazil Soybean Transportation

Table 3. Quarterly costs of transporting Brazilian soybeans from the southern ports to Shanghai, China

	—2021—									
	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Avg.	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Avg.
	North MT¹ - Santos² by truck —US\$/mt—					North MT¹ - Paranaguá² —US\$/mt—				
Truck	60.94	66.24			63.59	58.57	65.99			62.28
Ocean	37.00	50.60			43.80	38.75	52.40			45.58
Total transportation	97.94	116.84			107.39	97.32	118.39			107.85
Farm gate price ³	463.10	495.57			479.33	463.10	495.57			479.33
Landed cost	561.04	612.41			586.72	560.42	613.96			587.19
Transport % of landed cost	17.5	19.1			18.3	17.4	19.3			18.3
	North MT¹ - Santos² by rail —US\$/mt—					Northwest RS¹ - Rio Grande² —US\$/mt—				
Truck	22.18	23.05			22.6	19.91	21.09			20.5
Rail ⁴	30.95	30.44			30.7	-	-			-
Ocean	37.00	50.60			43.8	37.25	51.00			44.1
Total transportation	90.13	104.10			97.1	57.16	72.09			64.6
Farm gate price ³	463.10	495.57			479.3	475.64	505.86			490.7
Landed cost	553.22	599.67			576.4	532.80	577.95			555.4
Transport % of landed cost	16.3	17.4			16.8	10.7	12.5			11.6

¹Producing regions: RS = Rio Grande do Sul, MT= Mato Grosso, and PR = Paraná.

²Export port.

³The source of the farm gate price is the Brazilian Government, Companhia Nacional de Abastecimento (CONAB).

⁴In, Brazil, there are no public/official rail tariff rates. Rail rates can be up to 30 percent lower than truck rates, depending on volumes hauled and the terms of contracts signed between the railroad company and shippers.

Note: qtr. = quarter. mt = metric ton. Avg. = average.

Source: University of São Paulo, Escola Superior de Agricultura “Luiz de Queiroz,” Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.



Brazil Soybean Transportation

Table 4. Quarterly costs of transporting Brazilian soybeans from the southern ports to Hamburg, Germany

	—2021—									
	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Avg.	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Avg.
	North MT¹ - Santos² by truck —US\$/mt—					North MT¹ - Paranaguá² —US\$/mt—				
Truck	60.94	66.24			63.59	58.57	65.99			62.28
Ocean	31.25	42.70			36.98	31.00	41.90			36.45
Total transportation	92.19	108.94			100.57	89.57	107.89			98.73
Farm gate price ³	463.10	495.57			479.33	463.10	495.57			479.33
Landed cost	555.29	604.51			579.90	552.67	603.46			578.06
Transport % of landed cost	16.6	18.0			17.3	16.2	17.9			17.0
	North MT¹ - Santos² by rail —US\$/mt—					Northwest RS¹ - Rio Grande² —US\$/mt—				
Truck	22.18	23.05			22.62	19.91	21.09			20.50
Rail ⁴	30.95	30.44			30.69	-	-			-
Ocean	31.25	42.70			36.98	32.00	43.80			37.90
Total transportation	84.38	96.20			90.29	51.91	64.89			58.40
Farm gate price ³	463.10	495.57			479.33	475.64	505.86			490.75
Landed cost	547.47	591.77			569.62	527.55	570.75			549.15
Transport % of landed cost	15.4	16.3			15.8	9.8	11.4			10.6

¹Producing regions: RS = Rio Grande do Sul and MT= Mato Grosso.

²Export port.

³The source of the farm gate price is the Brazilian Government, Companhia Nacional de Abastecimento (CONAB).

⁴In, Brazil, there are no public/official rail tariff rates. Rail rates can be up to 30 percent lower than truck rates, depending on volumes hauled and the terms of contracts signed between the railroad company and shippers.

Note: qtr. = quarter. mt = metric ton. Avg. = average.

Source: University of São Paulo, Escola Superior de Agricultura “Luiz de Queiroz,” Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.



Brazil Soybean Transportation

Table 5. Quarterly costs of transporting Brazilian soybeans from the northern and northeastern ports to Shanghai, China

	—2021—									
	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Avg.	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Avg.
	North MT¹ - Santarém² —US\$/mt—					South MA¹ - São Luís² —US\$/mt—				
Truck	40.01	42.08			41.04	25.06	28.77			26.91
Ocean	50.54	56.60			53.57	41.00	55.60			48.30
Total transportation	90.55	98.68			94.61	66.06	84.37			75.21
Farm gate price ³	463.10	495.57			479.33	466.73	503.18			484.95
Landed cost	553.64	594.25			573.95	532.79	587.55			560.17
Transport % of landed cost	16.4	16.6			16.5	12.4	14.4			13.4
	Southwest PI¹ - São Luís² —US\$/mt—					North MT¹ - Barcarena² —US\$/mt—				
Truck	29.27	34.77			32.02	34.86	38.44			36.65
Barge ⁴	-	-			-	16.37	15.79			16.08
Ocean	41.00	55.60			48.30	42.00	58.20			50.10
Total transportation	70.27	90.37			80.32	93.23	112.44			102.83
Farm gate price ³	484.07	489.79			486.93	463.10	495.57			479.33
Landed cost	554.34	580.17			567.25	556.33	608.01			582.17
Transport % of landed cost	12.7	15.6			14.1	16.8	18.5			17.6

¹Producing regions: MT= Mato Grosso, PI = Piauí, and MA = Maranhão.

²Export port.

³The source of the farm gate price is the Brazilian Government, Companhia Nacional de Abastecimento (CONAB).

⁴In Brazil, there are no public/official Barge rates. Barge rates can be up to 60 percent lower than truck rates, depending on volumes hauled and the terms of contracts signed between the barge company and shippers. The distance is in nautical miles.

Note: qtr. = quarter. mt = metric ton. Avg. = average.

Source: University of São Paulo, Escola Superior de Agricultura “Luiz de Queiroz,” Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.



Brazil Soybean Transportation

Table 6. Quarterly costs of transporting Brazilian soybeans from the northern and northeastern ports to Hamburg, Germany

	—2021—									
	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Avg.	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Avg.
	North MT¹ - Santarém² —US\$/mt—					South MA¹ - São Luís² —US\$/mt—				
Truck	40.01	42.08			41.04	25.06	28.77			26.91
Ocean	28.65	45.90			37.28	33.25	40.00			36.63
Total transportation	68.66	87.98			78.32	58.31	68.77			63.54
Farm gate price ³	463.10	495.57			479.33	466.73	503.18			484.95
Landed cost	531.75	583.55			557.65	525.04	571.95			548.49
Transport % of landed cost	12.9	15.1			14.0	11.1	12.0			11.6
	Southwest PI¹ - São Luís² —US\$/mt—					North MT¹ - Barcarena² --US\$/mt-				
Truck	29.27	34.77			32.02	34.86	38.44			36.65
Barge ⁴	-	-			-	16.37	15.79			16.08
Ocean	33.25	40.00			36.63	28.10	38.90			33.50
Total transportation	62.52	74.77			68.65	79.33	93.14			86.23
Farm gate price ³	484.07	489.79			486.93	463.10	495.57			479.33
Landed cost	546.59	564.57			555.58	542.43	588.71			565.57
Transport % of landed cost	11.4	13.2			12.3	14.6	15.8			15.2

¹Producing regions: MT= Mato Grosso, PI = Piauí, and MA = Maranhão.

²Export port.

³The source of the farm gate price is the Brazilian Government, Companhia Nacional de Abastecimento (CONAB).

⁴In Brazil, there are no public/official Barge rates. Barge rates can be up to 60 percent lower than truck rates, depending on volumes hauled and the terms of contracts signed between the barge company and shippers. The distance is in nautical miles.

Note: qtr. = quarter. mt = metric ton. Avg. = average.

Source: University of São Paulo, Escola Superior de Agricultura “Luiz de Queiroz,” Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.



Brazil Soybean Transportation

Table 7. Quarterly truck rates for selected Brazilian soybean export transportation routes, 2021

Route #	Origin ¹ (reference city)	Destination	Distance (miles) ²	Share (%) ³	Freight price (US\$/mt/100 miles) ⁴				
					1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Avg.
1	Northwest RS ⁵ (Cruz Alta)	Rio Grande	288	12.0	6.91	7.32			7.12
2	North MT (Sorriso)	Santos	1,190	3.3	5.12	5.57			5.34
3	North MT (Sorriso)	Paranaguá	1,262	3.1	4.64	5.23			4.94
4	South GO (Rio Verde)	Santos	587	4.9	4.96	5.11			5.03
5	South GO (Rio Verde)	Paranaguá	726	3.9	5.07	5.33			5.20
6	North Central PR (Londrina)	Paranaguá	268	2.8	7.17	7.15			7.16
7	Western Central PR (Mamborê)	Paranaguá	311	2.2	6.63	6.27			6.45
8	Triangle MG (Uberaba)	Santos	339	3.0	6.86	6.94			6.90
9	West PR (Assis Chateaubriand)	Paranaguá	377	1.7	6.08	5.93			6.01
10	West Extreme BA (São Desidério)	Salvador	535	5.9	5.28	5.69			5.49
11	Southeast MT (Primavera do Leste)	Santos	901	2.5	4.69	5.27			4.98
12	Southeast MT (Primavera do Leste)	Paranaguá	975	2.3	4.58	5.08			4.83
13	Southwest MS (Maracaju)	Paranaguá	612	3.0	5.68	5.51			5.59
14	Southwest MS (Maracaju)	Santos	652	2.8	5.47	5.60			5.53
15	West PR (Assis Chateaubriand)	Santos	550	1.2	5.35	5.54			5.44
16	East GO (Cristalina)	Santos	585	1.9	5.72	6.00			5.86
17	North PR (Cornélio Procópio)	Paranaguá	306	1.7	5.84	5.81			5.82
18	Eastern Central PR (Castro)	Paranaguá	130	2.0	8.74	9.00			8.87
19	South Central PR (Guarapuava)	Paranaguá	204	2.3	8.46	8.45			8.45
20	North Central MS (São Gabriel do Oeste)	Santos	720	2.4	4.61	4.79			4.70
21	Ribeirão Preto SP (Guairá)	Santos	314	0.0	5.42	5.69			5.56
22	Northeast MT (Canarana)	Santos	950	3.6	4.78	5.34			5.06
23	East MS (Chapadão do Sul)	Santos	607	0.0	4.64	4.79			4.71

¹The main city is considered as a reference to establish the freight price.

²Distance from the main city of the considered region to the mentioned ports.

³Share is measured as a percentage of total production.

⁴Average monthly exchange rate from “Banco Central do Brasil” was used to convert Brazilian reais to the U.S. dollars.

⁵RS=Rio Grande do Sul, MT=Mato Grosso, GO=Goiás, PR=Paraná, MG=Minas Gerais, BA=Bahia, MS=Mato Grosso do Sul, SP=São Paulo, PI=Piauí, MA=Maranhão, PA=Pará, and TO=Tocantins.

⁶In Brazil, there are no public/official rail tariff rates. Rail rates can be up to 30 percent lower than truck rates, depending on the volumes hauled and the terms of contracts signed between the railroad company and shippers.

⁷In Brazil, there are no public/official Barge rates. Barge rates can be up to 60 percent lower than truck rates, depending on the volumes hauled and the terms of contracts signed between the barge company and shippers. The distance is in nautical miles.

Note: qtr. = quarter. mt = metric ton. Avg. = average.

For more details, on the definitions/calculations contact esalqlog@esalqlog.esalq.usp.br.

Source: University of São Paulo, Escola Superior de Agricultura “Luiz de Queiroz,” Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.



Brazil Soybean Transportation

Table 7. Quarterly truck rates for selected Brazilian soybean export transportation routes, 2021

Route #	Origin ¹ (reference city)	Destination	Distance (miles) ²	Share (%) ³	Freight price (US\$/mt/100 miles) ⁴				
					1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Avg.
24	Northeast MT (Canarana)	Paranaguá	1,075	3.2	4.23	5.04			4.64
25	Western Central RS (Tupanciretã)	Rio Grande	273	2.7	5.42	6.62			6.02
26	Southwest PR(Chopinzinho)	Paranaguá	291	1.5	6.83	7.32			7.08
27	North MT (Sorriso)	Itaituba	672	5.8	5.19	5.72			5.46
28	North MT (Sorriso)	Porto Velho	632	6.2	4.55	4.94			4.74
29	North MT (Sorriso)	Santarém	876	4.4	4.57	4.80			4.68
30	South MA (Balsas)	São Luís	482	2.2	5.20	5.97			5.59
31	Southwest PI (Bom Jesus)	São Luís	606	2.5	4.83	5.74			5.29
32	Southeast PA (Paragominas)	Barcarena	249	1.6	6.61	6.46			6.54
33	East TO (Campos Lindos)	São Luís	842	1.4	4.51	4.75			4.63
	Weighted average		587	100.0	5.60	5.94			5.77
34	North MT (Sorriso)	Rondonópolis (Rail terminal)	382		5.81	6.04			5.92
35	Rondonópolis MT (Rail terminal) ⁶	Santos	1,019		3.04	2.99			3.01
36	Itaituba PA (Barge terminal) ⁷	Santarém	224		5.97	4.49			5.23
37	Itaituba PA (Barge terminal) ⁷	Barcarena	738		2.22	2.14			2.18

¹The main city is considered as a reference to establish the freight price.

²Distance from the main city of the considered region to the mentioned ports.

³Share is measured as a percentage of total production.

⁴Average monthly exchange rate from “Banco Central do Brasil” was used to convert Brazilian reais to the U.S. dollars.

⁵RS=Rio Grande do Sul, MT=Mato Grosso, GO=Goiás, PR=Paraná, MG=Minas Gerais, BA=Bahia, MS=Mato Grosso do Sul, SP=São Paulo, PI=Piauí, MA=Maranhão, PA=Pará, and TO=Tocantins.

⁶In Brazil, there are no public/official rail tariff rates. Rail rates can be up to 30 percent lower than truck rates, depending on the volumes hauled and the terms of contracts signed between the railroad company and shippers.

⁷In Brazil, there are no public/official Barge rates. Barge rates can be up to 60 percent lower than truck rates, depending on the volumes hauled and the terms of contracts signed between the barge company and shippers. The distance is in nautical miles.

Note: qtr. = quarter. mt = metric ton. Avg. = average.

For more details, on the definitions/calculations contact esalqlog@esalqlog.esalq.usp.br.

Source: University of São Paulo, Escola Superior de Agricultura “Luiz de Queiroz,” Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.



Brazil Soybean Transportation

Table 8. Monthly Brazilian soybean export truck transportation cost index

Month	Freight price (US\$/mt/100 miles)	Index variation (%) (Base: prior month)	Index value (Base: Jan-05=100)	Month	Freight price (US\$/mt/100 miles)	Index variation (%) (Base: prior month)	Index value (Base: Jan-05=100)
Jan-14	8.86	-0.6	152.73	Jan-18	7.59	5.0	130.90
Feb-14	10.34	16.7	178.24	Feb-18	8.65	13.9	149.04
Mar-14	11.61	12.3	200.13	Mar-18	10.59	22.5	182.61
Apr-14	11.35	-2.2	195.65	Apr-18	9.78	-7.7	168.59
May-14	10.90	-4.0	187.89	May-18	8.96	-8.4	154.45
Jun-14	10.34	-5.1	178.24	Jun-18	8.89	-0.8	153.24
Jul-14	10.16	-1.7	175.21	Jul-18	8.97	0.9	154.58
Aug-14	10.10	-0.6	174.08	Aug-18	8.24	-8.1	142.00
Sep-14	9.66	-4.3	166.54	Sep-18	7.24	-12.1	124.78
Oct-14	8.77	-9.3	151.13	Oct-18	7.69	6.2	132.55
Nov-14	8.36	-4.6	144.16	Nov-18	7.51	-2.3	129.44
Dec-14	7.96	-4.9	137.15	Dec-18	7.19	-4.3	123.87
Jan-15	8.01	0.7	138.15	Jan-19	7.72	7.5	133.13
Feb-15	8.02	0.1	138.29	Feb-19	8.19	6.0	141.15
Mar-15	8.32	3.7	143.44	Mar-19	7.34	-10.3	126.61
Apr-15	9.00	8.2	155.13	Apr-19	7.16	-2.6	123.35
May-15	8.39	-6.8	144.58	May-19	6.73	-5.9	116.02
Jun-15	8.01	-4.5	138.12	Jun-19	6.94	3.1	119.56
Jul-15	7.56	-5.7	130.25	Jul-19	8.33	20.1	143.60
Aug-15	7.38	-2.4	127.15	Aug-19	7.85	-5.8	135.23
Sep-15	6.60	-10.5	113.78	Sep-19	7.09	-9.7	122.17
Oct-15	6.70	1.5	115.43	Oct-19	6.57	-7.4	113.19
Nov-15	7.08	5.8	122.08	Nov-19	6.41	-2.3	110.54
Dec-15	6.76	-4.5	116.56	Dec-19	5.93	-7.5	102.21
Jan-16	6.42	-5.1	110.63	Jan-20	6.03	1.7	103.90
Feb-16	6.73	4.8	115.98	Feb-20	6.76	12.2	116.52
Mar-16	7.79	15.8	134.33	Mar-20	6.20	-8.2	106.95
Apr-16	8.30	6.5	143.05	Apr-20	5.86	-5.5	101.09
May-16	7.28	-12.3	125.43	May-20	5.26	-10.4	90.58
Jun-16	7.16	-1.5	123.51	Jun-20	5.45	3.7	93.95
Jul-16	7.46	4.2	128.64	Jul-20	5.44	-0.2	93.74
Aug-16	7.33	-1.7	126.41	Aug-20	5.41	-0.4	93.34
Sep-16	6.35	-13.3	109.53	Sep-20	5.58	3.0	96.14
Oct-16	5.88	-7.5	101.35	Oct-20	4.97	-10.8	85.71
Nov-16	5.00	-14.9	86.21	Nov-20	4.58	-7.9	78.95
Dec-16	5.47	9.4	94.32	Dec-20	4.32	-5.8	74.39
Jan-17	7.32	33.8	126.20	Jan-21	4.26	-1.3	73.39
Feb-17	9.85	34.6	169.85	Feb-21	5.60	31.5	96.50
Mar-17	10.38	5.3	178.90	Mar-21	6.93	23.8	119.49
Apr-17	9.52	-8.3	164.05	Apr-21	6.20	-10.5	106.96
May-17	8.75	-8.0	150.90	May-21	5.76	-7.2	99.22
Jun-17	8.18	-6.5	141.04	Jun-21	5.87	2.0	101.22
Jul-17	8.74	6.8	150.66				
Aug-17	9.85	12.7	169.76				
Sep-17	8.97	-9.0	154.55				
Oct-17	8.64	-3.6	148.93				
Nov-17	8.36	-3.2	144.11				
Dec-17	7.23	-13.5	124.63				

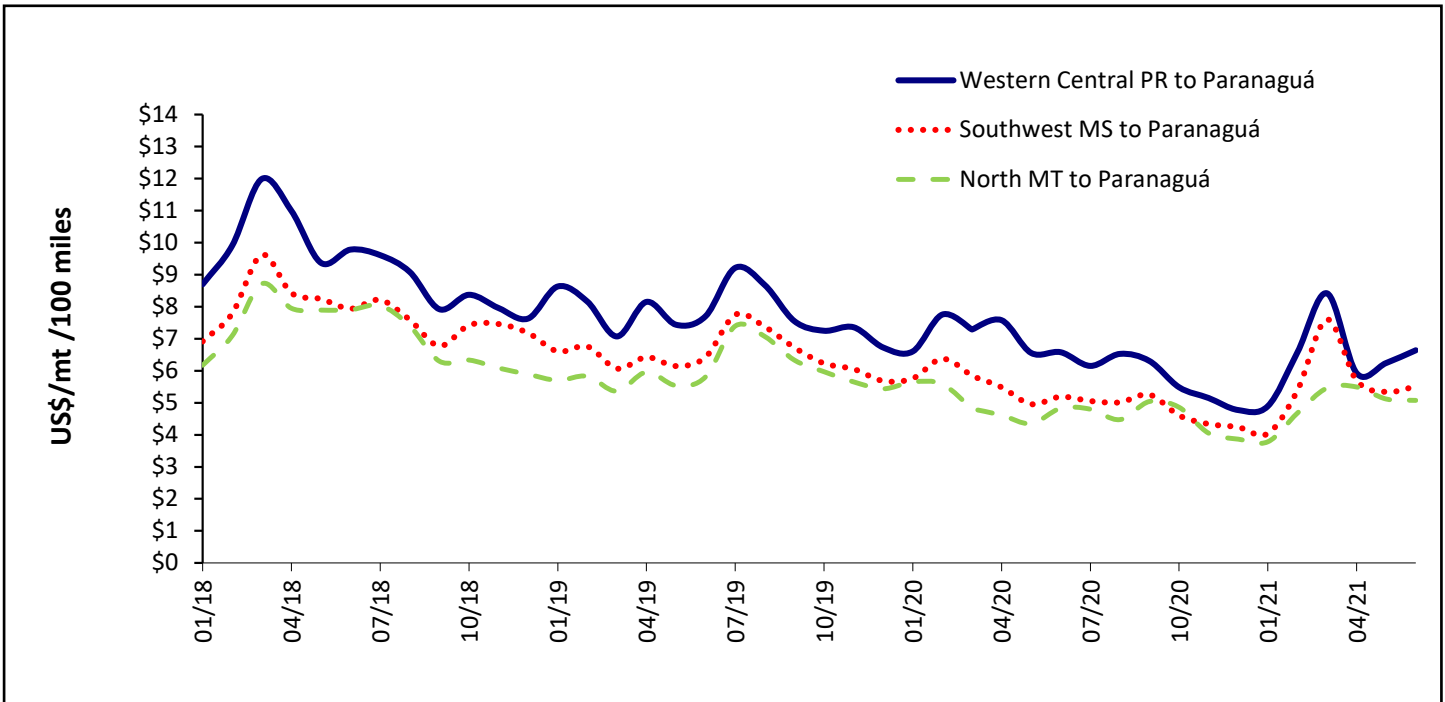
*Weighted average is calculated from production-based shares to weight high-volume routes more heavily than low-volume routes. The share associated with each route is used to define the weight of a given route's freight price in the composition of the monthly weighted export truck freight index.

Source: University of São Paulo, Escola Superior de Agricultura "Luiz de Queiroz," Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.



Brazil Soybean Transportation

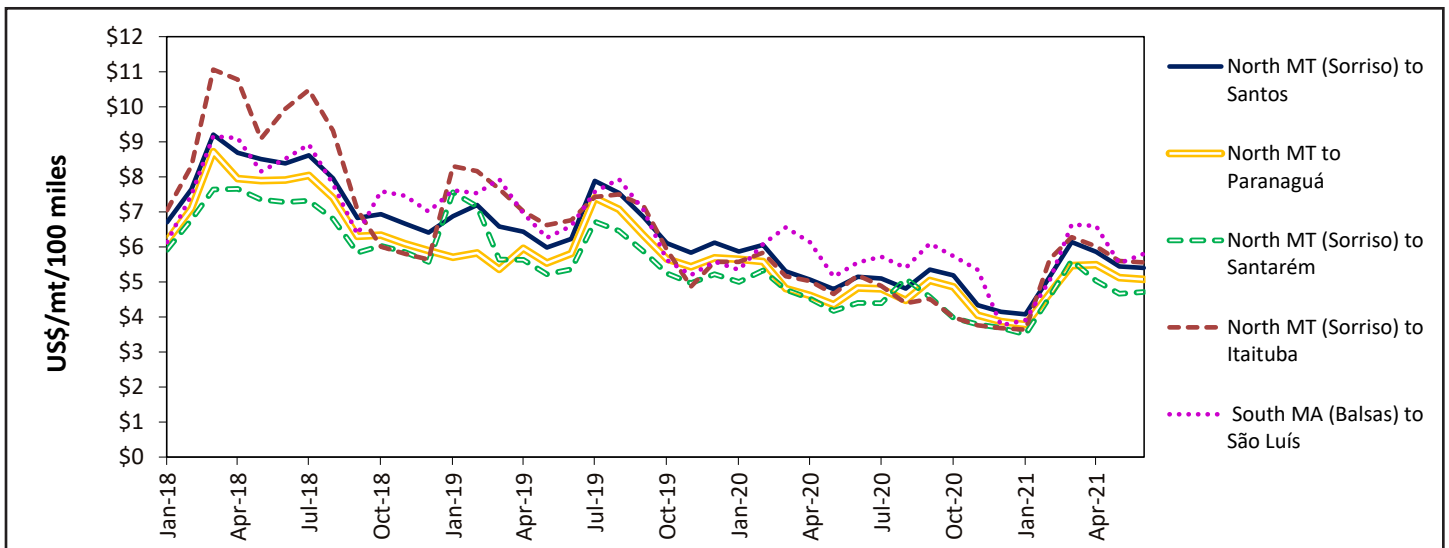
Figure 3. Truck rates for selected southern Brazilian soybean export transportation routes, 2018-21



Note: mt = metric ton. PR = Paraná, MT= Mato Grosso, and MS = Mato Grosso do Sul.

Source: University of São Paulo, Escola Superior de Agricultura "Luiz de Queiroz," Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.

Figure 4. Truck rates for selected north, south, and northeastern Brazilian soybean export transportation routes, 2018-21



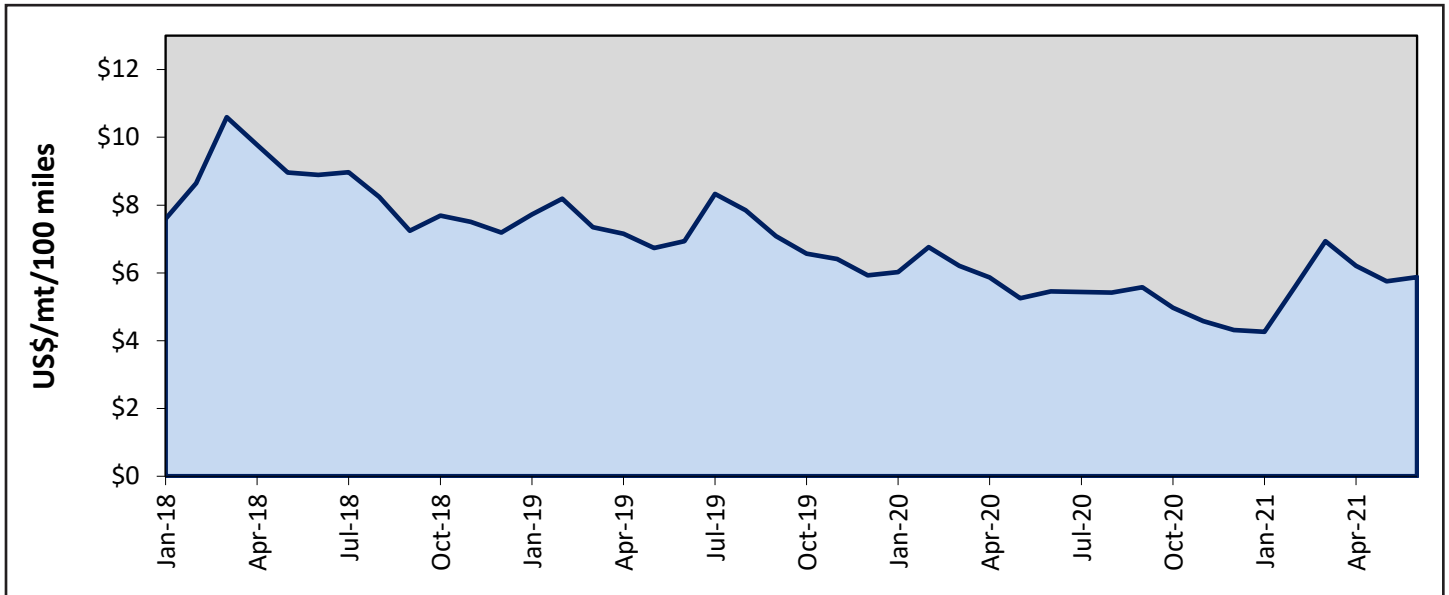
Note: mt = metric ton. MT= Mato Grosso and MA = Maranhão.

Source: University of São Paulo, Escola Superior de Agricultura "Luiz de Queiroz," Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.



Brazil Soybean Transportation

Figure 5. Brazilian soybean export truck transportation weighted average prices, 2018-21



Note: mt = metric ton.

Source: University of São Paulo, Escola Superior de Agricultura "Luiz de Queiroz," Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.



Brazil Soybean Transportation

Table 9. Quarterly ocean freight rates for shipping soybeans from selected Brazilian ports to Germany and China (US\$/metric ton)*

Port	Destination	1st qtr. 2016	2nd qtr. 2016	3rd qtr. 2016	4th qtr. 2016
Santos	Germany (Hamburg)	16.00	17.00	16.50	23.00
Paranaguá	Germany (Hamburg)	16.00	17.00	16.50	24.00
Rio Grande	Germany (Hamburg)	16.00	17.00	16.50	23.00
Santarém	Germany (Hamburg)	11.03	14.13	15.00	19.80
São Luís	Germany (Hamburg)	8.25	11.00	11.80	15.80
Barcarena	Germany (Hamburg)	9.60	12.45	13.20	17.35
Santos	China (Shanghai)	17.50	16.50	12.50	20.00
Paranagua	China (Shanghai)	18.00	18.50	14.50	21.50
Rio Grande	China (Shanghai)	18.50	17.00	13.00	20.50
Santarém	China (Shanghai)	22.00	21.00	19.40	23.75
São Luís	China (Shanghai)	20.00	18.40	17.50	22.00
Barcarena	China (Shanghai)	22.50	21.50	20.00	23.75
Port	Destination	1st qtr. 2017	2nd qtr. 2017	3rd qtr. 2017	4th qtr. 2017
Santos	Germany (Hamburg)	21.00	24.00	26.00	27.00
Paranaguá	Germany (Hamburg)	22.00	25.00	27.00	28.00
Rio Grande	Germany (Hamburg)	22.00	25.00	27.00	28.00
Santarém	Germany (Hamburg)	21.00	23.60	25.00	26.00
São Luís	Germany (Hamburg)	17.60	20.00	21.20	22.00
Barcarena	Germany (Hamburg)	18.00	20.60	21.80	22.70
Santos	China (Shanghai)	18.50	29.00	30.00	30.00
Paranagua	China (Shanghai)	20.50	30.50	31.00	31.50
Rio Grande	China (Shanghai)	18.00	29.50	31.00	30.70
Santarém	China (Shanghai)	24.00	33.50	31.00	34.50
São Luís	China (Shanghai)	23.50	30.25	31.00	33.50
Barcarena	China (Shanghai)	24.00	33.50	31.00	34.50
Port	Destination	1st qtr. 2018	2nd qtr. 2018	3rd qtr. 2018	4th qtr. 2018
Santos	Germany (Hamburg)	27.00	25.00	24.00	25.00
Paranaguá	Germany (Hamburg)	28.00	26.00	25.00	26.00
Rio Grande	Germany (Hamburg)	28.00	26.00	25.00	26.00
Santarém	Germany (Hamburg)	25.00	22.90	22.50	23.00
São Luís	Germany (Hamburg)	21.00	19.10	18.50	19.00
Barcarena	Germany (Hamburg)	23.00	20.90	20.20	20.00
Santos	China (Shanghai)	32.50	31.00	27.75	30.00
Paranagua	China (Shanghai)	32.00	32.00	28.75	31.00
Rio Grande	China (Shanghai)	33.00	31.50	28.25	31.50
Santarém	China (Shanghai)	38.50	35.50	31.25	34.00
São Luís	China (Shanghai)	37.00	34.80	30.75	33.00
Barcarena	China (Shanghai)	37.50	33.80	32.25	35.00

*The rates correspond to the average actual values negotiated between shippers and carriers and qtr. = weighted according to the magnitude of the shipped volume.

Note: qtr. = quarter.

Source: University of São Paulo, Escola Superior de Agricultura "Luiz de Queiroz," Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.

-continued on page 18-



Brazil Soybean Transportation

Table 9. Quarterly ocean freight rates for shipping soybeans from selected Brazilian ports to Germany and China (US\$/metric ton)*

Port	Destination	1st qtr. 2019	2nd qtr. 2019	3rd qtr. 2019	4th qtr. 2019
Santos	Germany (Hamburg)	23.00	21.50	27.00	31.00
Paranaguá	Germany (Hamburg)	23.00	21.25	27.00	30.75
Rio Grande	Germany (Hamburg)	23.00	21.25	27.00	31.25
Santarém	Germany (Hamburg)	21.00	20.25	25.92	26.50
São Luís	Germany (Hamburg)	18.00	17.10	22.77	23.50
Barcarena	Germany (Hamburg)	19.00	17.85	23.52	24.25
Santos	China (Shanghai)	32.25	30.92	33.25	38.17
Paranagua	China (Shanghai)	33.75	31.42	34.75	39.50
Rio Grande	China (Shanghai)	31.58	30.25	34.25	39.67
Santarém	China (Shanghai)	32.25	30.58	38.25	39.17
São Luís	China (Shanghai)	31.00	30.58	38.25	39.42
Barcarena	China (Shanghai)	32.25	29.92	38.25	39.42
Port	Destination	1st qtr. 2020	2nd qtr. 2020	3rd qtr. 2020	4th qtr. 2020
Santos	Germany (Hamburg)	29.25	20.50	24.00	25.25
Paranaguá	Germany (Hamburg)	30.00	21.50	25.00	25.35
Rio Grande	Germany (Hamburg)	29.50	20.75	24.50	25.75
Santarém	Germany (Hamburg)	25.00	16.00	20.75	22.00
São Luís	Germany (Hamburg)	22.25	17.50	25.00	26.30
Barcarena	Germany (Hamburg)	24.00	15.00	20.50	21.75
Santos	China (Shanghai)	35.50	27.08	31.33	31.67
Paranagua	China (Shanghai)	37.25	28.83	33.08	33.42
Rio Grande	China (Shanghai)	37.00	28.58	32.83	33.17
Santarém	China (Shanghai)	36.50	28.08	34.83	35.21
São Luís	China (Shanghai)	36.75	28.33	35.33	35.67
Barcarena	China (Shanghai)	38.50	28.33	36.33	36.67
Port	Destination	1st qtr. 2021	2nd qtr. 2021	3rd qtr. 2021	4th qtr. 2021
Santos	Germany (Hamburg)	31.25	42.70		
Paranaguá	Germany (Hamburg)	31.00	41.90		
Rio Grande	Germany (Hamburg)	32.00	43.80		
Santarém	Germany (Hamburg)	28.65	45.90		
São Luís	Germany (Hamburg)	33.25	40.00		
Barcarena	Germany (Hamburg)	28.10	38.90		
Santos	China (Shanghai)	37.00	50.60		
Paranagua	China (Shanghai)	38.75	52.40		
Rio Grande	China (Shanghai)	37.25	51.00		
Santarém	China (Shanghai)	50.54	56.60		
São Luís	China (Shanghai)	41.00	55.60		
Barcarena	China (Shanghai)	42.00	58.20		

*The rates correspond to the average actual values negotiated between shippers and carriers and qtr. = weighted according to the magnitude of the shipped volume.

Note: qtr. = quarter.

Source: University of São Paulo, Escola Superior de Agricultura "Luiz de Queiroz," Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.



Brazil Soybean Transportation

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Data Sets (XLS files):

- [Figure 3. Truck rates for selected southern Brazilian soybean export transportation routes, 2018-21](#)
- [Figure 4. Truck rates for selected north, south, and northeastern Brazilian soybean export transportation routes, 2018-21](#)
- [Figure 5. Brazilian soybean export truck transportation weighted average prices, 2018-21](#)
- [Table 1. Quarterly costs of transporting Brazilian soybeans from the southern ports to Shanghai, China](#)
- [Table 1a. Quarterly costs of transporting Brazilian soybeans from the northern and northeastern ports to Shanghai, China](#)
- [Table 2. Quarterly costs of transporting Brazilian soybeans from the southern ports to Hamburg, Germany](#)
- [Table 2a. Quarterly costs of transporting Brazilian soybeans from the northern and northeastern ports to Hamburg, Germany](#)
- [Table 3. Quarterly costs of transporting Brazilian soybeans from the southern ports to Shanghai, China](#)
- [Table 4. Quarterly costs of transporting Brazilian soybeans from the southern ports to Hamburg, Germany](#)
- [Table 5. Quarterly costs of transporting Brazilian soybeans from the northern and northeastern ports to Shanghai, China](#)
- [Table 6. Quarterly costs of transporting Brazilian soybeans from the northern and northeastern ports to Hamburg, Germany](#)
- [Table 7. Quarterly truck rates for selected Brazilian soybean export transportation routes, 2021](#)
- [Table 8. Monthly Brazilian soybean export truck transportation cost index](#)
- [Table 9. Quarterly ocean freight rates for shipping soybeans from selected Brazilian ports to Germany and China \(US\\$/metric ton\)](#)

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