



Brazil Soybean Transportation

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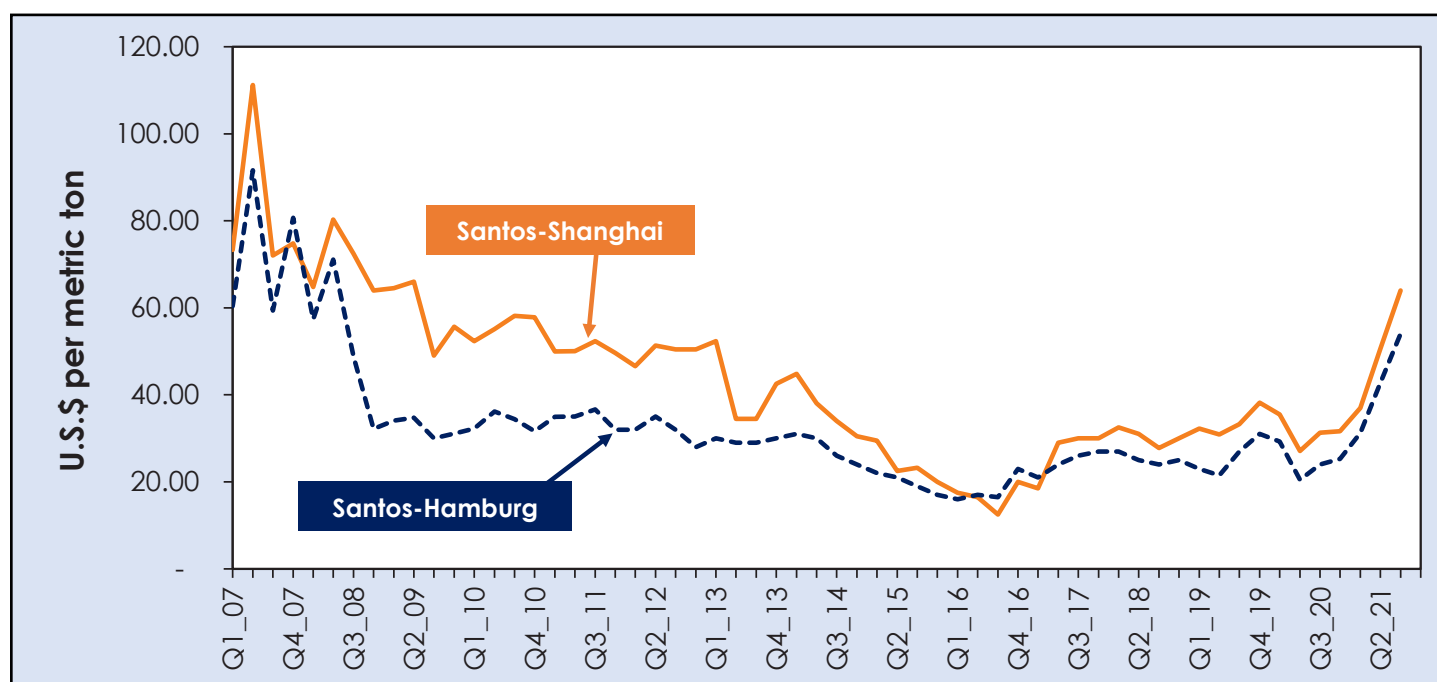
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Surge in Ocean Rates Drive Rising Transportation Costs

In third quarter 2021, the rise in Brazil's soybean transportation costs reflected a significant rise in ocean rates (fig. 1, tables 1, 1a, 2, 2a, and 9). From third quarter 2020 to third quarter 2021 (year to year), ocean rates doubled to Shanghai, China, and increased nearly 130 percent to Hamburg, Germany. This was the largest increase in ocean rates since second quarters 2007 and 2008 (fig. 1). The increase was due to strong demand for shipping bulk items, as well as tight vessel supply caused by congestion and other logistic inefficiencies ([Grain Transportation Report \(GTR\), October 14](#)). The cost of shipping a metric ton (mt) of soybeans 100 miles by truck decreased 6 percent—from \$5.48 per mt to \$5.16 per mt (table 8).

In the first 9 months of 2021, Brazil exported a total of nearly 77.5 million metric ton (mmt) of soybeans, valued at \$34.3 billion ([Comex Stat, Ministério da Economia](#)).¹ Of that total, exports to China accounted for 53.5 mmt, valued at \$23.7 billion—nearly 7 percent less than Brazil's 57.4 mmt exports to China in the first 9 months of 2020. The next highest shares of Brazil's soybean exports (in declining order) went to Spain, the

Figure 1. Ocean freight rates for Brazilian soybean shipments from Santos to Shanghai, China, and to Hamburg, Germany, 2017-21



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

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



Brazil Soybean Transportation

Netherlands, Thailand, and Turkey. The southern ports of Santos, Rio Grande, Paranaguá, and São Francisco do Sul continued to dominate the soybean trade to China, collectively accounting for 73 percent. Also, in the first 9 months of 2021, the northeastern ports of São Luís, Vitória, Salvador, and Barcarena accounted for 26 percent of soybean exports to China. The Amazon River ports of Manaus and Santarém exported a small amount to China, but exported mostly to the European Union, North America, and Africa.

Year to year, average Brazilian soybean export prices rose by 36 percent, from \$353.04 per mt to \$479.63 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 42 percent, from \$352.03/mt to \$498.87/mt year to year. Year to year, the Brazilian real strengthened about 3 percent against the U.S. dollar, from R\$5.38 per U.S. dollar to R\$5.23 per U.S. dollar ([Brazil Central Bank](#)). However, the real remained about 32 percent weaker than it was in third quarter 2019 (R\$3.97 per U.S. dollar). The continued-weak real led to higher domestic soybean prices in Brazil. On average, in reais, third-quarter 2021 farm gate prices increased nearly 38 percent, from R\$1,894.75/mt to R\$2,608.67/mt ([Companhia Nacional de Abastecimento \(CONAB\)](#)). For more information, contact Delmy L. Salin at delmy.salin@usda.gov.



Brazil Soybean Transportation

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

	2020 3rd qtr.	2021 3rd qtr.	% Change 2020-21	2020 3rd qtr.	2021 3rd qtr.	% Change 2020-21
	North MT¹ - Santos² by truck —US\$/mt—			Northwest RS¹ - Rio Grande² —US\$/mt—		
Truck	60.52	59.59	-1.5	18.84	18.32	-2.8
Ocean	31.33	64.00	104.3	32.83	64.75	97.2
Total transportation	91.85	123.59	34.6	51.67	83.07	60.8
Farm gate price ³	367.89	513.31	39.5	367.58	497.59	35.4
Landed cost	459.74	636.91	38.5	419.26	580.66	38.5
Transport % of landed cost	20.0	19.4	-2.9	12.3	14.3	16.1
	North MT¹ - Santos² by rail —US\$/mt—			North MT¹ - Paranaguá² —US\$/mt—		
Truck	21.47	19.88	-7.4	60.22	59.53	-1.1
Rail ⁴	31.02	30.09	-3.0	-	-	-
Ocean	31.33	64.00	104.3	33.08	66.00	99.5
Total transportation	83.82	113.97	36.0	93.30	125.53	34.5
Farm gate price ³	367.89	513.31	39.5	367.89	513.31	39.5
Landed cost	451.71	627.28	38.9	461.19	638.84	38.5
Transport % of landed cost	18.6	18.2	-2.1	20.2	19.6	-2.9

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 3rd qtr.	2021 3rd qtr.	% Change 2020-21	2020 3rd qtr.	2021 3rd qtr.	% Change 2020-21
	North MT¹ - Santarém² —US\$/mt—			South MA¹ - São Luís² —US\$/mt—		
Truck	41.03	37.51	-8.6	27.62	25.51	-7.7
Ocean	34.83	67.50	93.8	35.33	68.00	92.5
Total transportation	75.86	105.01	38.4	62.95	93.51	48.5
Farm gate price ³	367.89	513.31	39.5	359.63	501.47	39.4
Landed cost	443.75	618.32	39.3	422.58	594.97	40.8
Transport % of landed cost	17.1	17.0	-0.7	14.9	15.7	5.5
	Southwest PI¹ - São Luís² —US\$/mt—			North MT¹ - Barcarena² —US\$/mt—		
Truck	31.84	27.33	-14.2	30.89	29.35	-5.0
Barge ⁴	-	-	-	14.45	14.89	3.0
Ocean	35.33	68.00	92.5	36.33	70.00	92.7
Total transportation	67.17	95.33	41.9	81.67	114.24	39.9
Farm gate price ³	344.92	483.65	40.2	367.89	513.31	39.5
Landed cost	412.10	578.98	40.5	449.56	627.56	39.6
Transport % of landed cost	16.3	16.5	1.0	18.2	18.2	0.2

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.

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 3rd qtr.	2021 3rd qtr.	% Change 2020-21	2020 3rd qtr.	2021 3rd qtr.	% Change 2020-21
	North MT¹ - Santos² by truck —US\$/mt—			Northwest RS¹ - Rio Grande² —US\$/mt—		
Truck	60.52	59.59	-1.5	18.84	18.32	-2.8
Ocean	24.00	54.00	125.0	24.50	55.50	126.5
Total transportation	84.52	113.59	34.4	43.34	73.82	70.3
Farm gate price ³	367.89	513.31	39.5	367.58	497.59	35.4
Landed cost	452.41	626.91	38.6	410.93	571.41	39.1
Transport % of landed cost	18.7	18.1	-3.0	10.5	12.9	22.5
	North MT¹ - Santos² by rail —US\$/mt—			North MT¹ - Paranaguá² —US\$/mt—		
Truck	21.47	19.88	-7.4	60.22	59.53	-1.1
Rail ⁴	31.02	30.09	-3.0	-	-	-
Ocean	24.00	54.00	125.0	25.00	53.00	112.0
Total transportation	76.49	103.97	35.9	85.22	112.53	32.0
Farm gate price ³	367.89	513.31	39.5	367.89	513.31	39.5
Landed cost	444.38	617.28	38.9	453.11	625.84	38.1
Transport % of landed cost	17.2	16.8	-2.1	18.8	18.0	-4.4

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 3rd qtr.	2021 3rd qtr.	% Change 2020-21	2020 3rd qtr.	2021 3rd qtr.	% Change 2020-21
	North MT¹ - Santarém² —US\$/mt—			South MA¹ - São Luís² —US\$/mt—		
Truck	41.03	37.51	-8.6	27.62	25.51	-7.7
Ocean	20.75	50.60	143.9	25.00	58.00	132.0
Total transportation	61.78	88.11	42.6	52.62	83.51	58.7
Farm gate price ³	367.89	513.31	39.5	359.63	501.47	39.4
Landed cost	429.67	601.42	40.0	412.25	584.97	41.9
Transport % of landed cost	14.4	14.6	1.9	12.8	14.3	11.8
	Southwest PI¹ - São Luís² —US\$/mt—			North MT¹ - Barcarena² --US\$/mt--		
Truck	31.84	27.33	-14.2	30.89	29.35	-5.0
Barge ⁴	-	-	-	14.45	14.89	3.0
Ocean	25.00	58.00	132.0	20.50	49.20	140.0
Total transportation	56.84	85.33	50.1	65.84	93.44	41.9
Farm gate price ³	344.92	483.65	40.2	367.89	513.31	39.5
Landed cost	401.77	568.98	41.6	433.73	606.76	39.9
Transport % of landed cost	14.1	15.0	6.0	15.2	15.4	1.5

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.

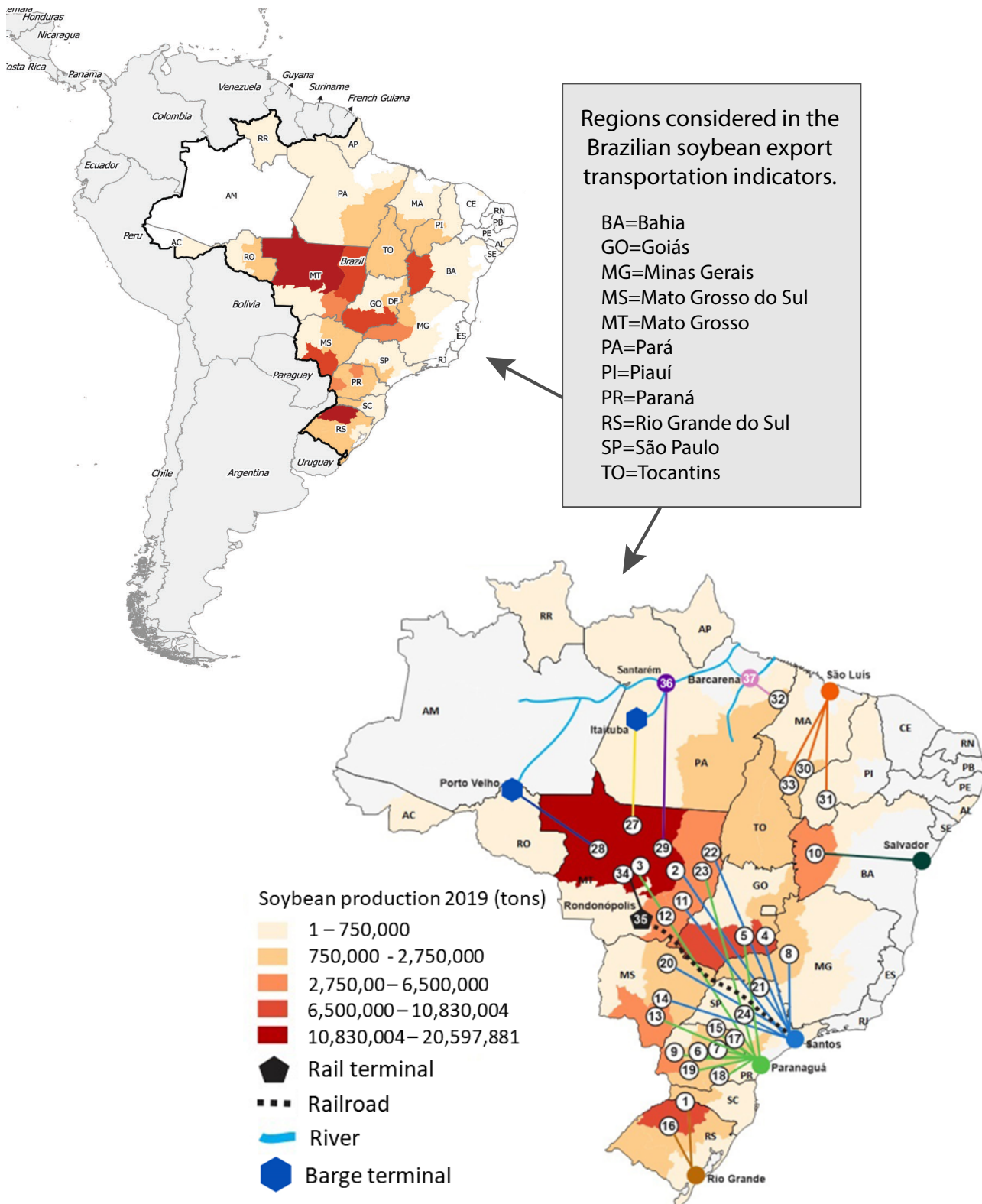
Source: University of São Paulo, Escola Superior de Agricultura "Luiz de Queiroz," Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.



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 MT ¹ - Santos ² by truck —US\$/mt—					North MT ¹ - Paranaguá ² —US\$/mt—				
Truck	60.94	66.24	59.59		62.26	58.57	65.99	59.53		61.36
Ocean	37.00	50.60	64.00		50.53	38.75	52.40	66.00		52.38
Total transportation	97.94	116.84	123.59		112.79	97.32	118.39	125.53		113.75
Farm gate price ³	463.10	495.57	513.31		490.66	463.10	495.57	513.31		490.66
Landed cost	561.04	612.41	636.91		603.45	560.42	613.96	638.84		604.41
Transport % of landed cost	17.5	19.1	19.4		18.6	17.4	19.3	19.6		18.8
	North MT ¹ - Santos ² by rail —US\$/mt—					Northwest RS ¹ - Rio Grande ² —US\$/mt—				
Truck	22.18	23.05	19.88		21.71	19.91	21.09	18.32		19.77
Rail ⁴	30.95	30.44	30.09		30.49	-	-			-
Ocean	37.00	50.60	64.00		50.53	37.25	51.00	64.75		51.00
Total transportation	90.13	104.10	113.97		102.73	57.16	72.09	83.07		70.77
Farm gate price ³	463.10	495.57	513.31		490.66	475.64	505.86	497.59		493.03
Landed cost	553.22	599.67	627.28		593.39	532.80	577.95	580.66		563.80
Transport % of landed cost	16.3	17.4	18.2		17.3	10.7	12.5	14.3		12.5

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. 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 MT ¹ - Santos ² by truck —US\$/mt—					North MT ¹ - Paranaguá ² —US\$/mt—				
Truck	60.94	66.24	59.59		62.26	58.57	65.99	59.53		61.36
Ocean	31.25	42.70	54.00		42.65	31.00	41.90	53.00		41.97
Total transportation	92.19	108.94	113.59		104.91	89.57	107.89	112.53		103.33
Farm gate price ³	463.10	495.57	513.31		490.66	463.10	495.57	513.31		490.66
Landed cost	555.29	604.51	626.91		595.57	552.67	603.46	625.84		593.99
Transport % of landed cost	16.6	18.0	18.1		17.6	16.2	17.9	18.0		17.4
	North MT ¹ - Santos ² by rail —US\$/mt—					Northwest RS ¹ - Rio Grande ² —US\$/mt—				
Truck	22.18	23.05	19.88		21.71	19.91	21.09	18.32		19.77
Rail ⁴	30.95	30.44	30.09		30.49	-	-			-
Ocean	31.25	42.70	54.00		42.65	32.00	43.80	55.50		43.77
Total transportation	84.38	96.20	103.97		94.85	51.91	64.89	73.82		63.54
Farm gate price ³	463.10	495.57	513.31		490.66	475.64	505.86	497.59		493.03
Landed cost	547.47	591.77	617.28		585.51	527.55	570.75	571.41		556.57
Transport % of landed cost	15.4	16.3	16.8		16.2	9.8	11.4	12.9		11.4

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 MT ¹ - Santarém ² —US\$/mt—					South MA ¹ - São Luís ² —US\$/mt—				
Truck	40.01	42.08	37.51		39.86	25.06	28.77	25.51		26.44
Ocean	40.54	55.60	67.50		54.55	41.00	55.60	68.00		54.87
Total transportation	80.55	97.68	105.01		94.41	66.06	84.37	93.51		81.31
Farm gate price ³	463.10	495.57	513.31		490.66	466.73	503.18	501.47		490.46
Landed cost	543.64	593.25	618.32		585.07	532.79	587.55	594.97		571.77
Transport % of landed cost	14.8	16.5	17.0		16.1	12.4	14.4	15.7		14.2
	Southwest PI ¹ - São Luís ² —US\$/mt—					North MT ¹ - Barcarena ² —US\$/mt—				
Truck	29.27	34.77	27.33		30.46	34.86	38.44	29.35		34.22
Barge ⁴	-	-	-		-	16.37	15.79	14.89		15.68
Ocean	41.00	55.60	68.00		54.87	42.00	58.20	70.00		56.73
Total transportation	70.27	90.37	95.33		85.32	93.23	112.44	114.24		106.64
Farm gate price ³	484.07	489.79	483.65		485.84	463.10	495.57	513.31		490.66
Landed cost	554.34	580.17	578.98		571.16	556.33	608.01	627.56		597.30
Transport % of landed cost	12.7	15.6	16.5		14.9	16.8	18.5	18.2		17.8

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 MT ¹ - Santarém ² —US\$/mt—					South MA ¹ - São Luís ² —US\$/mt—				
Truck	40.01	42.08	37.51		39.86	25.06	28.77	25.51		26.44
Ocean	28.65	40.00	50.60		39.75	33.25	45.90	58.00		45.72
Total transportation	68.66	82.08	88.11		79.61	58.31	74.67	83.51		72.16
Farm gate price ³	463.10	495.57	513.31		490.66	466.73	503.18	501.47		490.46
Landed cost	531.75	577.65	601.42		570.27	525.04	577.85	584.97		562.62
Transport % of landed cost	12.9	14.2	14.6		13.9	11.1	12.9	14.3		12.8
	Southwest PI ¹ - São Luís ² —US\$/mt—					North MT ¹ - Barcarena ² --US\$/mt-				
Truck	29.27	34.77	27.33		30.46	34.86	38.44	29.35		34.22
Barge ⁴	-	-	-		-	16.37	15.79	14.89		15.68
Ocean	33.25	45.90	58.00		45.72	28.10	38.90	49.20		38.73
Total transportation	62.52	80.67	85.33		76.17	79.33	93.14	93.44		88.64
Farm gate price ³	484.07	489.79	483.65		485.84	463.10	495.57	513.31		490.66
Landed cost	546.59	570.47	568.98		562.01	542.43	588.71	606.76		579.30
Transport % of landed cost	11.4	14.1	15.0		13.5	14.6	15.8	15.4		15.3

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	6.36		6.87
2	North MT (Sorriso)	Santos	1,190	3.3	5.12	5.57	5.01		5.23
3	North MT (Sorriso)	Paranaguá	1,262	3.1	4.64	5.23	4.72		4.86
4	South GO (Rio Verde)	Santos	587	4.9	4.96	5.11	4.54		4.87
5	South GO (Rio Verde)	Paranaguá	726	3.9	5.07	5.33	4.77		5.06
6	North Central PR (Londrina)	Paranaguá	268	2.8	7.17	7.15	6.08		6.80
7	Western Central PR (Mamborê)	Paranaguá	311	2.2	6.63	6.27	5.48		6.12
8	Triangle MG (Uberaba)	Santos	339	3.0	6.86	6.94	6.03		6.61
9	West PR (Assis Chateaubriand)	Paranaguá	377	1.7	6.08	5.93	5.23		5.75
10	West Extreme BA (São Desidério)	Salvador	535	5.9	5.28	5.69	5.17		5.38
11	Southeast MT (Primavera do Leste)	Santos	901	2.5	4.69	5.27	4.43		4.79
12	Southeast MT (Primavera do Leste)	Paranaguá	975	2.3	4.58	5.08	4.43		4.70
13	Southwest MS (Maracaju)	Paranaguá	612	3.0	5.68	5.51	4.92		5.37
14	Southwest MS (Maracaju)	Santos	652	2.8	5.47	5.60	4.86		5.31
15	West PR (Assis Chateaubriand)	Santos	550	1.2	5.35	5.54	4.92		5.27
16	East GO (Cristalina)	Santos	585	1.9	5.72	6.00	5.34		5.69
17	North PR (Cornélio Procópio)	Paranaguá	306	1.7	5.84	5.81	4.86		5.50
18	Eastern Central PR (Castro)	Paranaguá	130	2.0	8.74	9.00	7.52		8.42
19	South Central PR (Guarapuava)	Paranaguá	204	2.3	8.46	8.45	7.25		8.05
20	North Central MS (São Gabriel do Oeste)	Santos	720	2.4	4.61	4.79	4.26		4.55
21	Ribeirão Preto SP (Guairá)	Santos	314	0.0	5.42	5.69	4.76		5.29
22	Northeast MT (Canarana)	Santos	950	3.6	4.78	5.34	4.55		4.89
23	East MS (Chapadão do Sul)	Santos	607	0.0	4.64	4.79	4.22		4.55

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	4.54		4.60
25	Western Central RS (Tupanciretã)	Rio Grande	273	2.7	5.42	6.62	5.98		6.01
26	Southwest PR(Chopinzinho)	Paranaguá	291	1.5	6.83	7.32	6.37		6.84
27	North MT (Sorriso)	Itaituba	672	5.8	5.19	5.72	4.37		5.09
28	North MT (Sorriso)	Porto Velho	632	6.2	4.55	4.94	4.39		4.62
29	North MT (Sorriso)	Santarém	876	4.4	4.57	4.80	4.28		4.55
30	South MA (Balsas)	São Luís	482	2.2	5.20	5.97	5.30		5.49
31	Southwest PI (Bom Jesus)	São Luís	606	2.5	4.83	5.74	4.51		5.03
32	Southeast PA (Paragominas)	Barcarena	249	1.6	6.61	6.46	5.36		6.15
33	East TO (Campos Lindos)	São Luís	842	1.4	4.51	4.75	4.24		4.50
	Weighted average		587	100.0	5.60	5.94	5.16		5.57
34	North MT (Sorriso)	Rondonópolis (Rail terminal)	382		5.81	6.04	5.20		5.68
35	Rondonópolis MT (Rail terminal) ⁶	Santos	1,019		3.04	2.99	2.95		2.99
36	Itaituba PA (Barge terminal) ⁷	Santarém	224		5.97	4.49	3.51		4.65
37	Itaituba PA (Barge terminal) ⁷	Barcarena	738		2.22	2.14	2.02		2.13

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	Jul-21	5.09	-13.4	87.70
Aug-17	9.85	12.7	169.76	Aug-21	5.09	0.1	87.81
Sep-17	8.97	-9.0	154.55	Sep-21	5.31	4.2	91.53
Oct-17	8.64	-3.6	148.93				
Nov-17	8.36	-3.2	144.11				
Dec-17	7.23	-13.5	124.63				

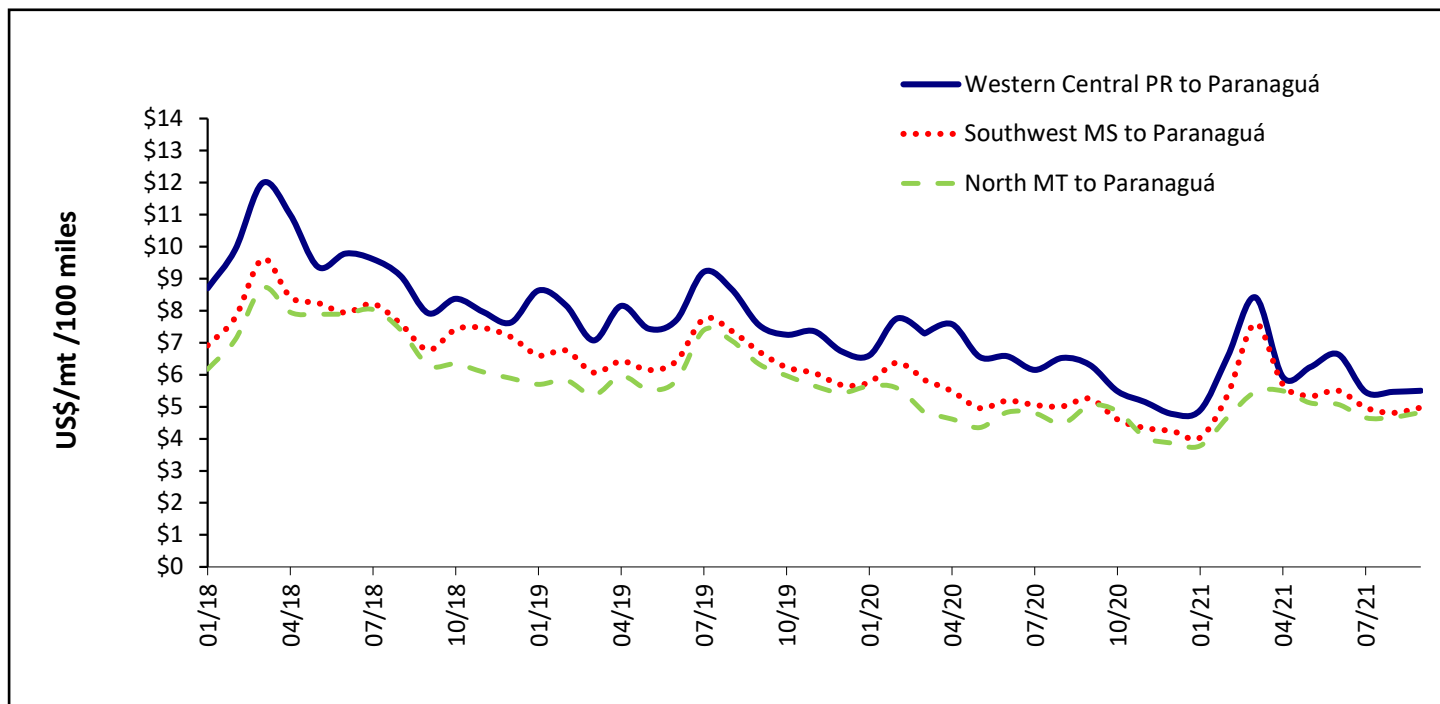
*Weighted average is calculated from production-based shares to weigh high-volume routes more heavily than low-volume routes. The share associated with each route is used to define the weight of a given route's freight price in the composition of the monthly weighted export truck freight index.

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



Brazil Soybean Transportation

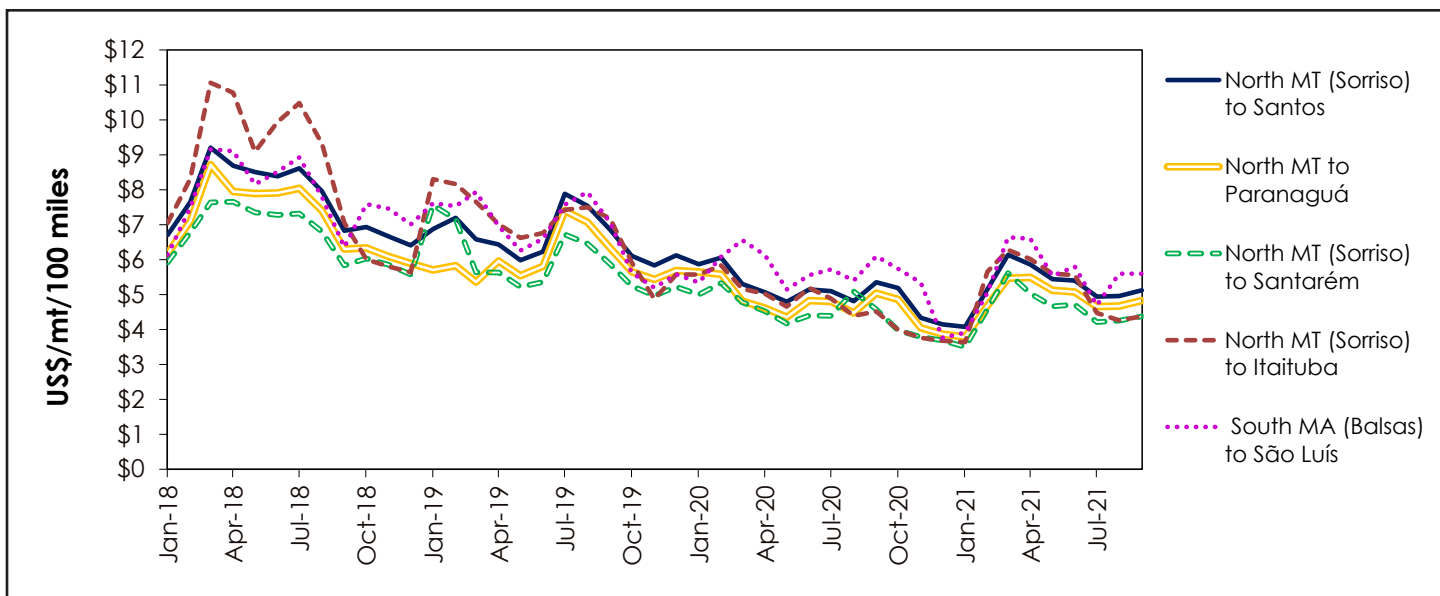
Figure 3. Truck rates for selected southern Brazilian soybean export transportation routes, 2018-21



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



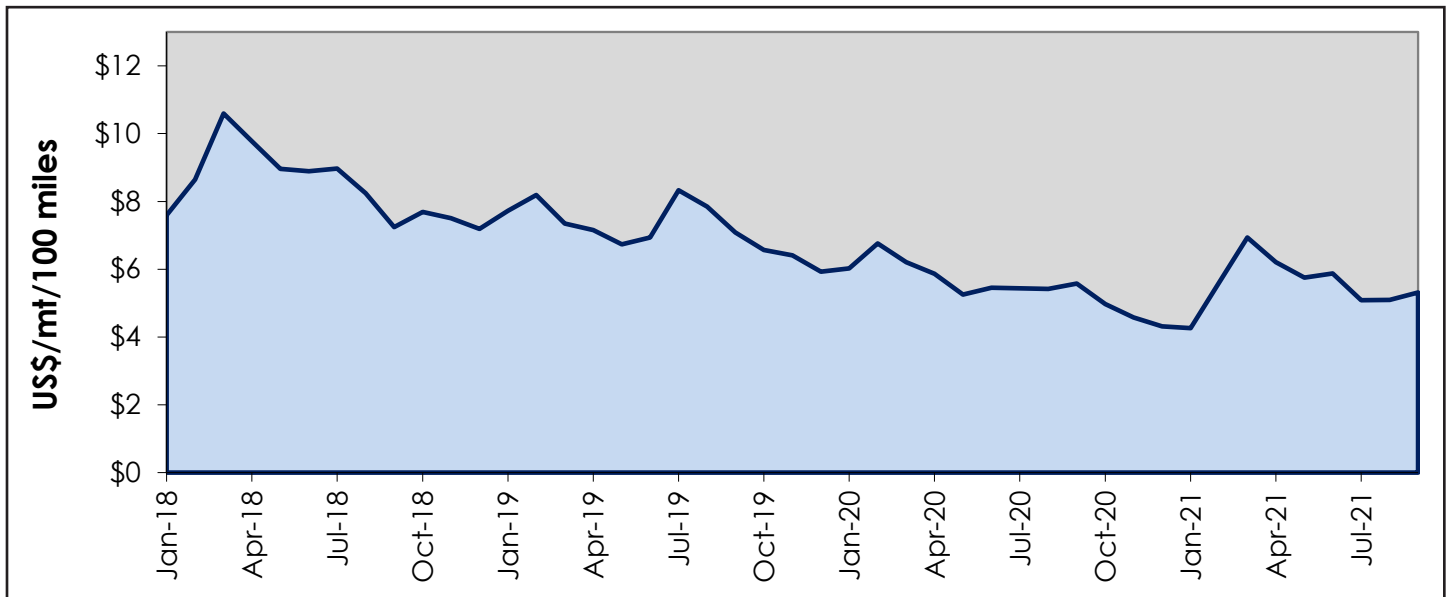
Note: mt = metric ton. MT= Mato Grosso and MA = Maranhão.

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	54.00	
Paranaguá	Germany (Hamburg)	31.00	41.90	53.00	
Rio Grande	Germany (Hamburg)	32.00	43.80	55.50	
Santarém	Germany (Hamburg)	28.65	40.00	50.60	
São Luís	Germany (Hamburg)	33.25	45.90	58.00	
Barcarena	Germany (Hamburg)	28.10	38.90	49.20	
Santos	China (Shanghai)	37.00	50.60	64.00	
Paranagua	China (Shanghai)	38.75	52.40	66.00	
Rio Grande	China (Shanghai)	37.25	51.00	64.75	
Santarém	China (Shanghai)	40.54	55.60	67.50	
São Luís	China (Shanghai)	41.00	56.60	68.00	
Barcarena	China (Shanghai)	42.00	58.20	70.00	

*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.



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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