

Brazil Soybean Transportation

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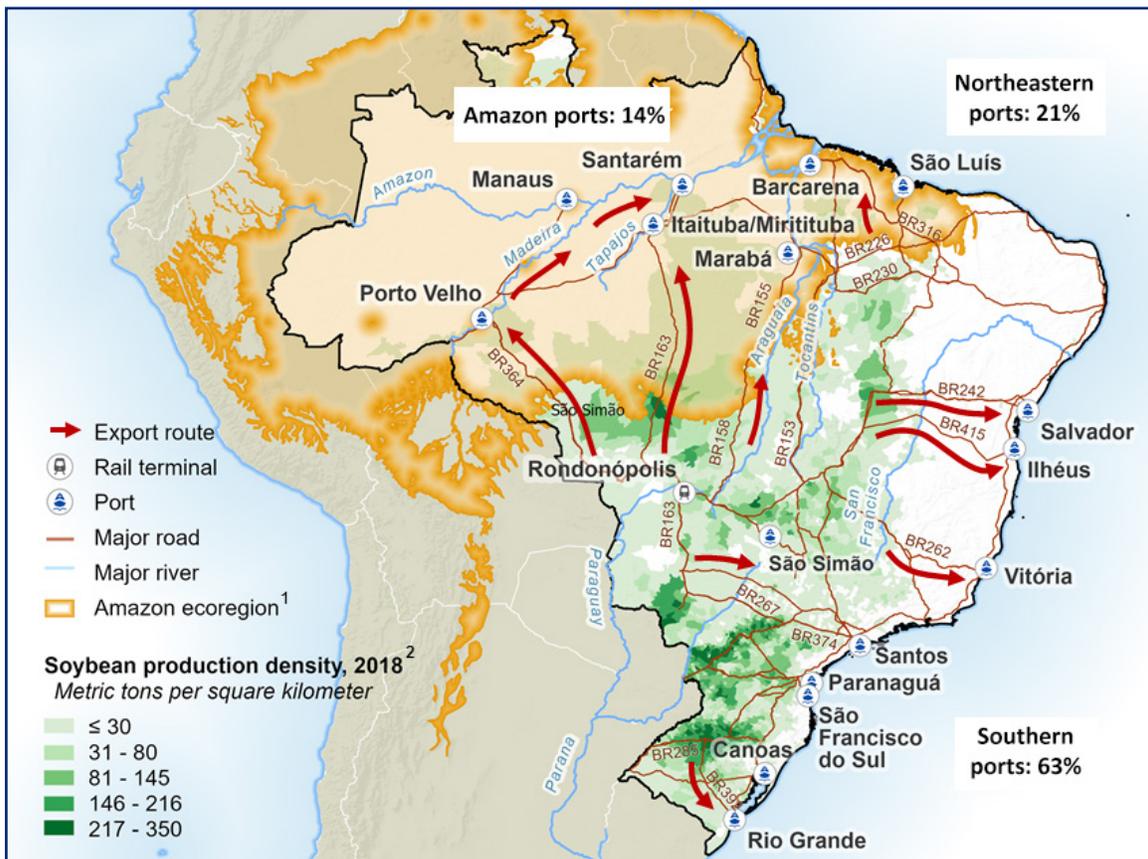


First Quarter 2020 (July, August, September)
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Weakened Currency Spurs Record Exports, Variable Transportation Costs, and Higher Domestic Prices

From first quarter 2019 to first quarter 2020 (year to year), the Brazilian real depreciated nearly 19 percent against the U.S. dollar, from R\$3.77 per U.S. dollar to R\$4.47 per U.S. dollar ([Brazil Central Bank](#)). As of April 30, 2020, year-to-date exports reached a record of 33.7 million metric tons (mmt) valued at \$11.5 billion, about 34 percent more than at this time last year ([Comex Stat](#), [Ministério da Indústria, Comércio Exterior e Serviços \(MDIC\)](#)). Year to year, the cost of shipping a metric ton (mt) of soybeans 100 miles by truck decreased 18 percent from \$7.75 per mt to \$6.63 per mt (table 8). This reduction reflects the weakening of the Brazilian real (R\$) against the U.S. dollar.

Figure 1. Southern ports exported 63 percent of Brazilian soybeans, January-April 2020



1 World Wildlife Fund.

2 Brazilian Institute of Geography and Statistics—Produção Agrícola Municipal.

Source: USDA/Agricultural Marketing Service and USDA/Foreign Agricultural Service.



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However, truck rates measured in reais (R\$) varied by region from their estimates in U.S. dollars largely because of improvements in transportation infrastructure. In particular, the completion of BR 163 (the major route connecting Sorriso, North Mato Grosso, to Itaituba, Pará) significantly contributed to the variance in regional rates. Finishing the project expedited deliveries of soybean exports via the river ports of Barcarena (2.8 mmt), Santarém (2.1 mmt), and Manaus (1.5 mmt). Over the last 5 years, Barcarena soybean exports nearly quadrupled, from 1.1 mmt in 2014 to 5.8 mmt in 2019. As of April 30, 2020, Barcarena was the third-largest Brazilian soybean exporting port after Santos (11.8 mmt) and Paranaguá. (5.7 mmt). All these factors combined to contribute to regional rate variances year to year. For example, truck rates from Cruz Alta, Rio Grande do Sul to Rio Grande, increased 4 percent. In contrast, truck rates from North Mato Grosso to Rondonópolis (rail terminal) decreased 2 percent and 12-18 percent to the northern inland ports of Santarém and Itaituba/Miritituba (barge terminal), respectively. Intensified competition from the northbound route decreased truck rates from Sorriso, North Mato Grosso to the southern port of Santos about 2 percent although rates from Sorriso, North Mato Grosso to Paranaguá increased 12 percent.

In contrast, ocean freight costs in 2020 increased but not by enough to offset lower truck costs. For first quarter 2020, ocean rates declined overall, but remained higher than first-quarter 2019 levels.³ On average, ocean rates from the southern Brazilian ports increased nearly 13 percent to Shanghai, China, year to year, compared to an increase of 29 percent to Hamburg, Germany (tables 1, 1a, and 9). In first quarter 2020, the ocean freight spread was \$3/mt for the routes from the northeastern port of Barcarena (\$38.50/mt) and the port of Santos (\$35.50) to Shanghai (table 9).⁴ The ocean freight spread was \$1.25/mt for the routes from the northeastern port of São Luís (\$36.75/mt) and the port of Santos (\$35.50) to Shanghai (table 9). In Sorriso, North MT—the largest Brazilian soybean-producing state—first quarter 2020 transportation costs represented nearly 26-27 percent of the total landed costs of shipping soybeans to Shanghai through Santos. Also, in Sorriso, transportation costs represented 22 percent of the total landed costs through the port of Santarém (tables 1 and 1a).

For the first 4 months of 2020, Santos was the largest Brazilian soybean export port, followed in descending order by Paranaguá, Barcarena, Rio Grande, São Luís, Santarém, São Francisco do Sul, and Manaus (fig. 1) ([MDIC](#)). These ports accounted for 93 percent of Brazil's total soybean exports. With the shares broken down from a north/south perspective, the southern ports of Santos, Rio Grande, Paranaguá, and São Francisco do Sul dominated the soybean trade, accounting for about 63 percent of Brazil's soybean exports. Meanwhile, the northeastern ports of São Luís, Vitória, Salvador, and Barcarena accounted for 21 percent of soybean exports. The Amazon River ports of Manaus and Santarém exported 14 percent.

Year to year, average 2020 Brazilian soybean export prices decreased 6 percent, from \$358 per mt to \$335 per mt ([MDIC](#)). The weakening of the Brazilian real against the U.S. dollar offset the slight year-to-year fall in farm gate prices, from \$299.06/mt to \$296.27/mt, when measured in U.S. dollars because soybeans are priced in U.S. dollars but paid in reais ([Companhia Nacional de Abastecimento \(CONAB\)](#)). Farm prices measured in reais increased an average of 11 percent, from R\$1,127.44/mt in 2019 to R\$1,316.94 in the first quarter of 2020 ([CONAB](#)).

From January-April 2020, soybean exports to China increased 32 percent from 18.6 mmt to 24.7 mmt (valued at \$8.4 billion) ([MDIC](#)). China received 73 percent of Brazil's total soybean exports (33.7 mmt). The next highest shares of Brazil's soybean exports went (in declining order) to the Netherlands, Spain, Turkey,

³ Ocean during first half of 2018 were unusually low because of lower Chinese iron ore imports and the collapse of a mine-waste dam in southeastern Brazil that disrupted Brazilian iron supply ([Grain Transportation Report \(GTR\)](#)).

⁴ Ocean freight spread is the cost difference between two vessel routes to the same destination.



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Thailand, Pakistan and Mexico. The southern ports of Santos, Paranaguá, Rio Grande, and São Francisco do Sul accounted for 80 percent of total soybean exports to China (fig. 1). The Northeastern ports of São Luís, Vitoria, Barcarena, and Salvador accounted for nearly 20 percent of Brazilian soybeans to China. The Northern ports of Santarém and Manaus represented less than 1 percent of exports to China. For more information, contact Delmy L. Salin at delmy.salin@ams.usda.gov.

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

	2019 1st qtr.	2020 1st qtr.	% Change 2019-20	2019 1st qtr.	2020 1st qtr.	% Change 2019-20
	North MT¹ - Santos² by truck —US\$/mt—			Northwest RS¹ - Rio Grande² —US\$/mt—		
Truck	81.92	68.33	-16.6	26.05	22.92	-12.0
Ocean	32.25	35.50	10.1	31.58	37.00	17.2
Total transportation	114.17	103.83	-9.0	57.63	59.92	4.0
Farm gate price ³	275.38	282.59	2.6	308.52	300.04	-2.7
Landed cost	389.54	386.43	-0.8	366.15	359.97	-1.7
Transport % of landed cost	29.3	26.9	-8.3	15.7	16.6	5.8
	North MT¹ - Santos² by rail —US\$/mt—			North MT¹ - Paranaguá² —US\$/mt—		
Truck	29.89	24.79	-17.1	71.05	67.48	-5.0
Rail ⁴	41.21	37.73	-8.5	-	-	-
Ocean	32.25	35.50	10.1	33.75	37.25	10.4
Total transportation	103.36	98.02	-5.2	104.80	104.73	-0.1
Farm gate price ³	275.38	282.59	2.6	275.38	282.59	2.6
Landed cost	378.73	380.61	0.5	380.18	387.32	1.9
Transport % of landed cost	27.3	25.8	-5.6	27.6	27.0	-1.9

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.



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

	2019 1st qtr.	2020 1st qtr.	% Change 2019-20	2019 1st qtr.	2020 1st qtr.	% Change 2019-20
	North MT¹ - Santarém² —US\$/mt—			South MA¹ - São Luís² —US\$/mt—		
Truck	59.40	44.10	-25.8	37.04	28.86	-22.1
Ocean	32.25	36.50	13.2	31.00	36.75	18.5
Total transportation	91.65	80.60	-12.1	68.04	65.61	-3.6
Farm gate price ³	275.38	282.59	2.6	298.43	300.23	0.6
Landed cost	367.03	363.20	-1.0	366.47	365.83	-0.2
Transport % of landed cost	25.0	22.2	-11.1	18.6	17.9	-3.4
	Southwest PI¹ - São Luís² —US\$/mt—			North MT¹ - Barcarena² —US\$/mt—		
Truck	45.24	32.49	-28.2	53.99	37.11	-31.3
Barge ⁴	-	-	-	19.66	16.42	-16.5
Ocean	31.00	36.75	18.5	32.25	38.50	19.4
Total transportation	76.24	69.24	-9.2	105.90	92.03	-13.1
Farm gate price ³	292.96	302.03	3.1	275.38	282.59	2.6
Landed cost	369.20	371.27	0.6	381.28	374.62	-1.7
Transport % of landed cost	20.7	18.6	-9.7	27.8	24.6	-11.6

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.

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



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

	2019 1st qtr.	2020 1st qtr.	% Change 2019-20	2019 1st qtr.	2020 1st qtr.	% Change 2019-20
	North MT¹ - Santos² —US\$/mt—			Northwest RS¹ - Rio Grande² —US\$/mt—		
Truck	81.92	68.33	-16.6	26.05	22.92	-12.0
Ocean	23.00	29.25	27.2	23.00	29.50	28.3
Total transportation	104.92	97.58	-7.0	49.05	52.42	6.9
Farm gate price ³	275.38	282.59	2.6	308.52	300.04	-2.7
Landed cost	380.29	380.18	0.0	357.57	352.47	-1.4
Transport % of landed cost	27.6	25.7	-7.0	13.7	14.9	8.4
	North MT¹ - Santos² —US\$/mt—			North MT¹ - Paranaguá² —US\$/mt—		
Truck	29.89	24.79	-17.1	71.05	67.48	-5.0
Rail ⁴	41.21	37.73	-8.5	-	-	-
Ocean	23.00	29.25	27.2	23.00	30.00	30.4
Total transportation	94.11	91.77	-2.5	94.05	97.48	3.6
Farm gate price ³	275.38	282.59	2.6	275.38	282.59	2.6
Landed cost	369.48	374.36	1.3	369.43	380.07	2.9
Transport % of landed cost	25.5	24.5	-3.8	25.5	25.6	0.7

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.



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

	2019 1st qtr.	2020 1st qtr.	% Change 2019-20	2019 1st qtr.	2020 1st qtr.	% Change 2019-20
	North MT¹ - Santarém² —US\$/mt—			South MA¹ - São Luís² —US\$/mt—		
Truck	59.40	44.10	-25.8	37.04	28.86	-22.1
Ocean	21.00	25.00	19.0	18.00	22.25	23.6
Total transportation	80.40	69.10	-14.1	55.04	51.11	-7.1
Farm gate price ³	275.38	282.59	2.6	298.43	300.23	0.6
Landed cost	355.78	351.70	-1.1	353.47	351.33	-0.6
Transport % of landed cost	22.6	19.6	-13.1	15.6	14.5	-6.6
	Southwest PI¹ - São Luís² —US\$/mt—			North MT¹ - Barcarena² --US\$/mt--		
Truck	45.24	32.49	-28.2	53.99	37.11	-31.3
Barge ⁴	-	-	-	19.66	16.42	-16.5
Ocean	18.00	22.25	23.6	19.00	24.00	26.3
Total transportation	63.24	54.74	-13.4	92.65	77.53	-16.3
Farm gate price ³	292.96	302.03	3.1	275.38	282.59	2.6
Landed cost	356.20	356.77	0.2	368.03	360.12	-2.1
Transport % of landed cost	17.8	15.3	-13.6	25.2	21.5	-14.5

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.

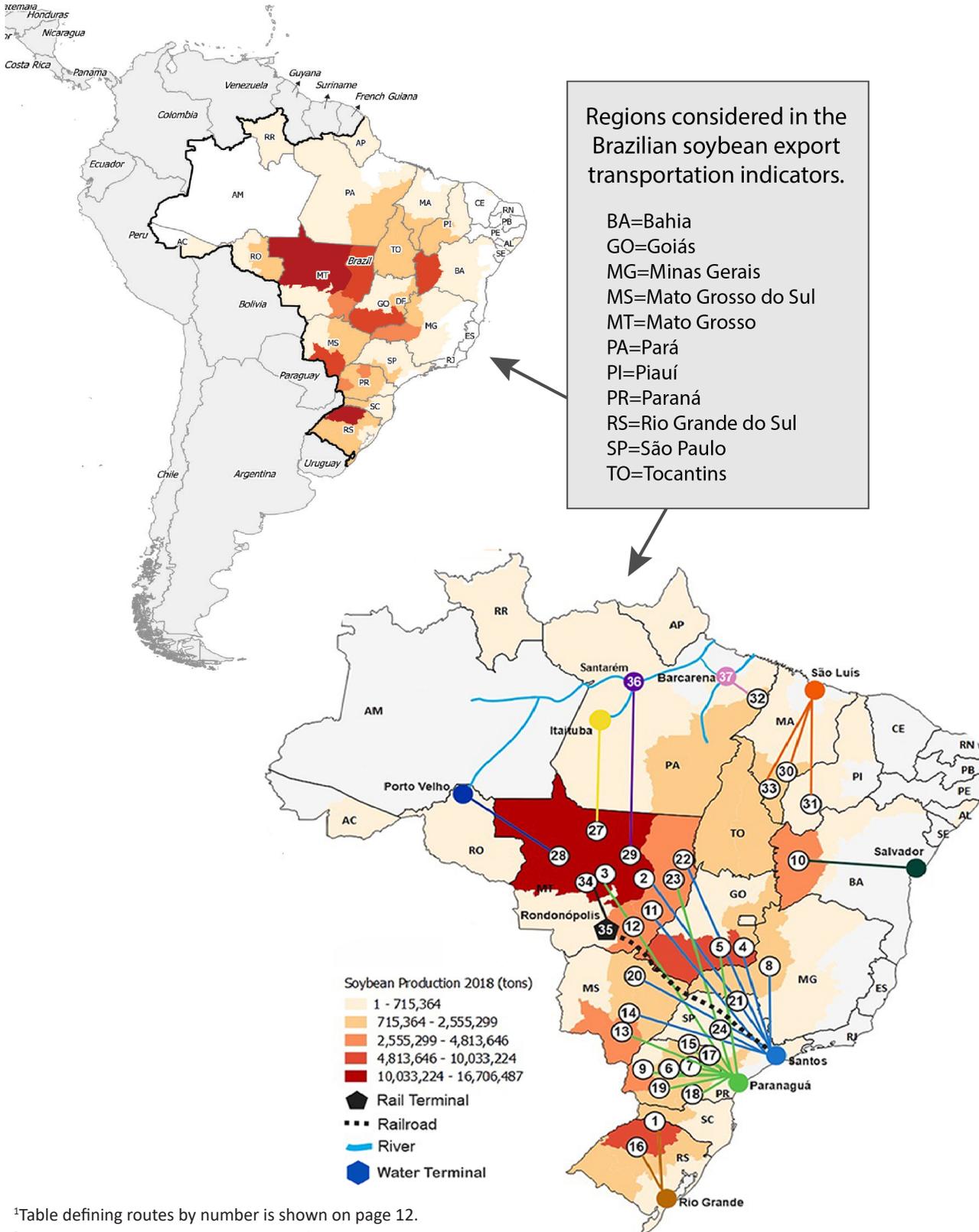
Source: University of São Paulo, Escola Superior de Agricultura "Luiz de Queiroz," Brazil (ESALQ/ USP) and USDA, Agricultural Marketing Service.



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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 81 percent of Brazilian soybean production, 2018.

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



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

	—2020—									
	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Avg.	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Avg.
	North MT ¹ - Santos ² —US\$/mt—					North MT ¹ - Paranaguá ² —US\$/mt—				
Truck	68.33				68.33	67.48				67.48
Ocean	35.50				35.50	37.25				37.25
Total transportation	103.83				103.83	104.73				104.73
Farm gate price ³	282.59				282.59	282.59				282.59
Landed cost	386.43				386.43	387.32				387.32
Transport % of landed cost	26.9				26.9	27.0				27.0
	North MT ¹ - Santos ² —US\$/mt—					Northwest RS ¹ - Rio Grande ² —US\$/mt—				
Truck	24.79				24.79	22.92				22.92
Rail ⁴	37.73				37.73	-				-
Ocean	35.50				35.50	37.00				37.00
Total transportation	98.02				98.02	59.92				59.92
Farm gate price ³	282.59				282.59	300.04				300.04
Landed cost	380.61				380.61	359.97				359.97
Transport % of landed cost	25.8				25.8	16.6				16.6

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.



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

	—2020—									
	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Avg.	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Avg.
	North MT ¹ - Santos ² —US\$/mt—					North MT ¹ - Paranaguá ² —US\$/mt—				
Truck	68.33				68.33	67.48				67.48
Ocean	29.25				29.25	30.00				30.00
Total transportation	97.58				97.58	97.48				97.48
Farm gate price ³	282.59				282.59	282.59				282.59
Landed cost	380.18				380.18	380.07				380.07
Transport % of landed cost	25.7				25.7	25.6				25.6
	North MT ¹ - Santos ² —US\$/mt—					Northwest RS ¹ - Rio Grande ² —US\$/mt—				
Truck	24.79				24.79	22.92				22.92
Rail ⁴	37.73				37.73	-				-
Ocean	29.25				29.25	29.50				29.50
Total transportation	91.77				91.77	52.42				52.42
Farm gate price ³	282.59				282.59	300.04				300.04
Landed cost	374.36				374.36	352.47				352.47
Transport % of landed cost	24.5				24.5	14.9				14.9

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.



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

	—2020—									
	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	44.10				44.10	28.86				28.86
Ocean	36.50				36.50	36.75				36.75
Total transportation	80.60				80.60	65.61				65.61
Farm gate price ³	282.59				282.59	300.23				300.23
Landed cost	363.20				363.20	365.83				365.83
Transport % of landed cost	22.2				22.2	17.9				17.9
	Southwest PI¹ - São Luís² —US\$/mt—					North MT¹ - Barcarena² —US\$/mt—				
Truck	32.49				32.49	37.11				37.11
Barge ⁴	-				-	16.42				16.42
Ocean	36.75				36.75	38.50				38.50
Total transportation	69.24				69.24	92.03				92.03
Farm gate price ³	302.03				302.03	282.59				282.59
Landed cost	371.27				371.27	374.62				374.62
Transport % of landed cost	18.6				18.6	24.6				24.6

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.



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

	—2020—									
	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	44.10				44.10	28.86				28.86
Ocean	25.00				25.00	22.25				22.25
Total transportation	69.10				69.10	51.11				51.11
Farm gate price ³	282.59				282.59	300.23				300.23
Landed cost	351.70				351.70	351.33				351.33
Transport % of landed cost	19.6				19.6	14.5				14.5
	Southwest PI¹ - São Luís² —US\$/mt—					North MT¹ - Barcarena² --US\$/mt-				
Truck	32.49				32.49	37.11				37.11
Barge ⁴	-				-	16.42				16.42
Ocean	22.25				22.25	24.00				24.00
Total transportation	54.74				54.74	77.53				77.53
Farm gate price ³	302.03				302.03	282.59				282.59
Landed cost	356.77				356.77	360.12				360.12
Transport % of landed cost	15.3				15.3	21.5				21.5

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. Avg. = average.

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



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Table 7. Quarterly truck rates for selected Brazilian soybean export transportation routes, 2020

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	11.3	7.96				7.96
2	North MT (Sorriso)	Santos	1,190	3.0	5.74				5.74
3	North MT (Sorriso)	Paranaguá	1,262	2.9	5.35				5.35
4	South GO (Rio Verde)	Santos	587	4.8	5.54				5.54
5	South GO (Rio Verde)	Paranaguá	726	3.9	5.60				5.60
6	North Central PR (Londrina)	Paranaguá	268	3.2	8.00				8.00
7	Western Central PR (Mamborê)	Paranaguá	311	2.4	7.22				7.22
8	Triangle MG (Uberaba)	Santos	339	3.0	7.66				7.66
9	West PR (Assis Chateaubriand)	Paranaguá	377	2.3	6.71				6.71
10	West Extreme BA (São Desidério)	Salvador	535	6.6	5.97				5.97
11	Southeast MT (Primavera do Leste)	Santos	901	2.4	5.26				5.26
12	Southeast MT (Primavera do Leste)	Paranaguá	975	2.2	5.05				5.05
13	Southwest MS (Maracaju)	Paranaguá	612	3.5	5.99				5.99
14	Southwest MS (Maracaju)	Santos	652	3.2	5.82				5.82
15	West PR (Assis Chateaubriand)	Santos	550	1.6	5.94				5.94
16	East GO (Cristalina)	Santos	585	1.9	6.35				6.35
17	North PR (Cornélio Procópio)	Paranaguá	306	1.8	6.46				6.46
18	Eastern Central PR (Castro)	Paranaguá	130	2.0	10.54				10.54
19	South Central PR (Guarapuava)	Paranaguá	204	2.3	9.63				9.63
20	North Central MS (São Gabriel do Oeste)	Santos	720	2.4	5.06				5.06
21	Ribeirão Preto SP (Guairá)	Santos	314	0.0	6.40				6.40
22	Northeast MT (Canarana)	Santos	950	3.3	5.55				5.55
23	East MS (Chapadão do Sul)	Santos	607	0.0	5.08				5.08
24	Northeast MT (Canarana)	Paranaguá	1,075	2.9	5.34				5.34

¹Although each origin region comprises several cities, the main city is considered as a reference to establish the freight price; na = not available

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.

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, 2020

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.
25	Western Central RS (Tupanciretã)	Rio Grande	273	2.5	7.10				7.10
26	Southwest PR(Chopinzinho)	Paranaguá	291	1.7	7.57				7.57
27	North MT (Sorriso)	Itaituba	672	5.4	5.52				5.52
28	North MT (Sorriso)	Porto Velho	632	5.7	5.22				5.22
29	North MT (Sorriso)	Santarém	876	4.1	5.03				5.03
30	South MA (Balsas)	São Luís	482	2.1	5.99				5.99
31	Southwest PI (Bom Jesus)	São Luís	606	2.6	5.36				5.36
32	Southeast PA (Paragominas)	Barcarena	249	1.5	7.17				7.17
33	East TO (Campos Lindos)	São Luís	842	1.6	5.04				5.04
	Weighted average		587	100.0	6.33				6.33
34	North MT (Sorriso)	Rondonópolis (Rail terminal)	382		6.49				6.49
35	Rondonópolis MT (Rail terminal) ⁶	Santos	1,019		3.70				3.70
36	Itaituba PA (Barge terminal) ⁷	Santarém	224		4.73				4.73
37	Itaituba PA (Barge terminal) ⁷	Barcarena	738		2.23				2.23

¹Although each origin region comprises several cities, the main city is considered as a reference to establish the freight price; na = not available

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.

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-13	10.11	3.9	174.31	Jan-17	7.32	33.8	126.20
Feb-13	10.79	6.7	185.96	Feb-17	9.85	34.6	169.85
Mar-13	11.14	3.3	192.04	Mar-17	10.38	5.3	178.90
Apr-13	10.95	-1.7	188.71	Apr-17	9.52	-8.3	164.05
May-13	10.40	-5.0	179.31	May-17	8.75	-8.0	150.90
Jun-13	9.49	-8.8	163.61	Jun-17	8.18	-6.5	141.04
Jul-13	9.65	1.7	166.41	Jul-17	8.74	6.8	150.66
Aug-13	9.80	1.5	168.95	Aug-17	9.85	12.7	169.76
Sep-13	10.21	4.2	176.02	Sep-17	8.97	-9.0	154.55
Oct-13	10.17	-0.4	175.28	Oct-17	8.64	-3.6	148.93
Nov-13	9.29	-8.6	160.18	Nov-17	8.36	-3.2	144.11
Dec-13	8.91	-4.1	153.63	Dec-17	7.23	-13.5	124.63
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				
May-16	7.28	-12.3	125.43				
Jun-16	7.16	-1.5	123.51				
Jul-16	7.46	4.2	128.64				
Aug-16	7.33	-1.7	126.41				
Sep-16	6.35	-13.3	109.53				
Oct-16	5.88	-7.5	101.35				
Nov-16	5.00	-14.9	86.21				
Dec-16	5.47	9.4	94.32				

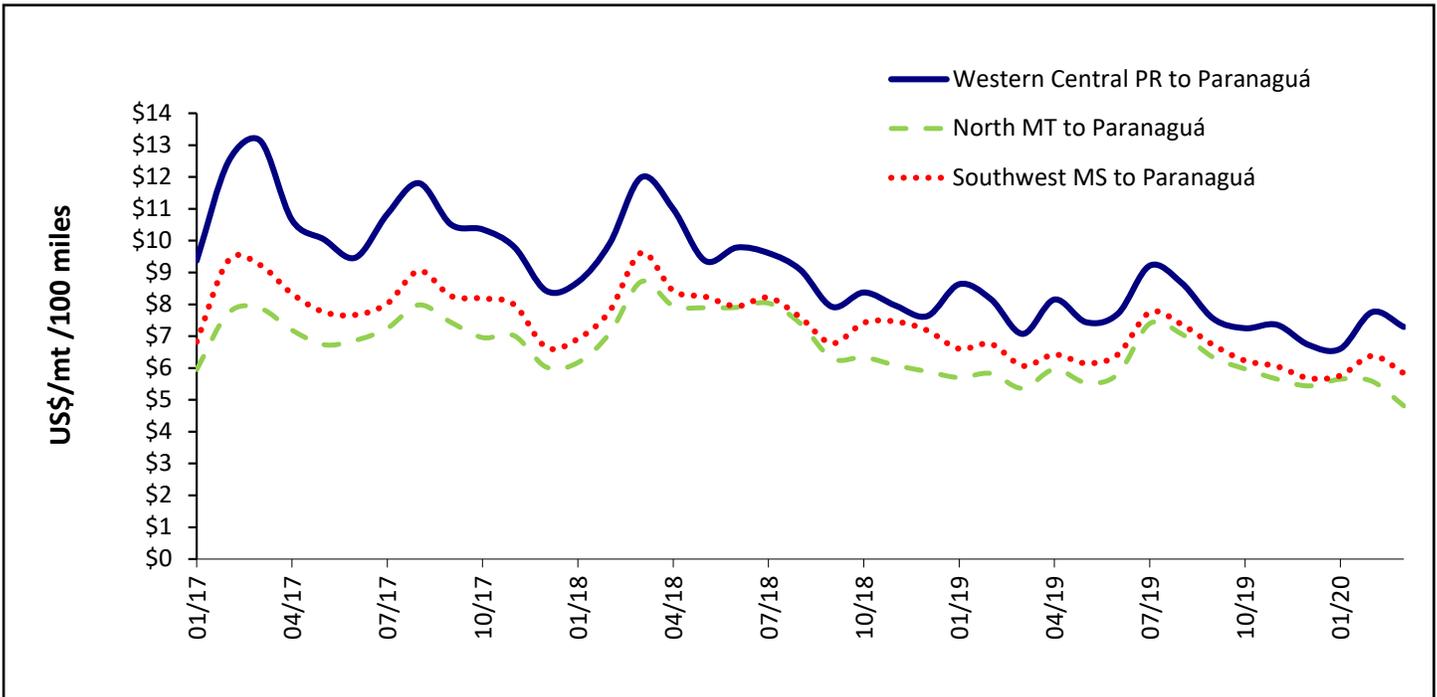
*Weighted average.

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



Brazil Soybean Transportation

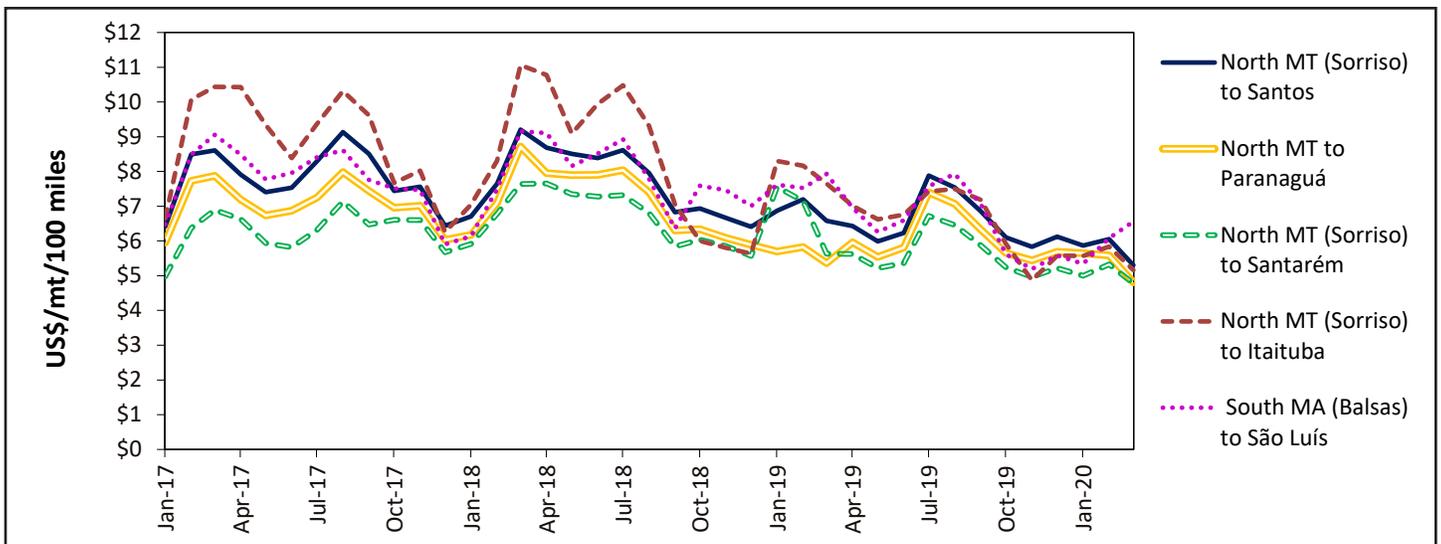
Figure 3. Truck rates for selected southern Brazilian soybean export transportation routes, 2017-20



Note: mt = metric ton.

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, 2017-20



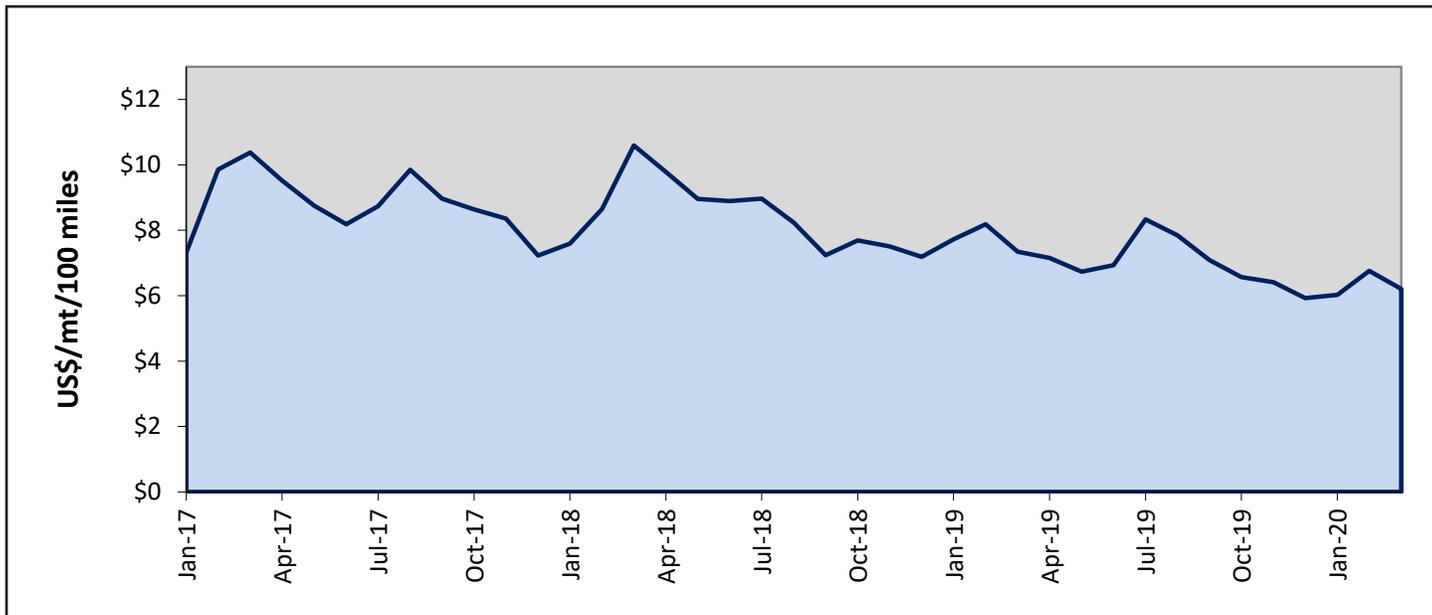
Note: mt = metric ton.

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



Brazil Soybean Transportation

Figure 5. Brazilian soybean export truck transportation weighted average prices, 2017-20



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. 2015	2nd qtr. 2015	3rd qtr. 2015	4th qtr. 2015
Santos	Germany (Hamburg)	22.00	21.00	19.00	17.00
Paranaguá	Germany (Hamburg)	22.00	21.00	19.00	17.00
Rio Grande	Germany (Hamburg)	22.00	21.00	19.00	17.00
Santarém	Germany (Hamburg)	20.00	14.50	13.50	20.00
São Luís	Germany (Hamburg)	20.00	18.25	16.38	20.50
Barcarena	Germany (Hamburg)	20.00	16.00	15.20	21.00
Santos	China (Shanghai)	29.50	22.50	23.25	20.00
Paranagua	China (Shanghai)	31.50	23.50	24.18	20.50
Rio Grande	China (Shanghai)	29.50	25.00	25.75	21.00
Santarém	China (Shanghai)	32.00	25.00	25.75	23.50
São Luís	China (Shanghai)	32.00	25.00	25.75	23.50
Barcarena	China (Shanghai)	32.00	25.00	25.75	23.50
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

*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.

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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. 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
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			
Paranaguá	Germany (Hamburg)	30.00			
Rio Grande	Germany (Hamburg)	29.50			
Santarém	Germany (Hamburg)	25.00			
São Luís	Germany (Hamburg)	22.25			
Barcarena	Germany (Hamburg)	24.00			
Santos	China (Shanghai)	35.50			
Paranagua	China (Shanghai)	37.25			
Rio Grande	China (Shanghai)	37.00			
Santarém	China (Shanghai)	36.50			
São Luís	China (Shanghai)	36.75			
Barcarena	China (Shanghai)	38.50			

*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

Contact Information:

Delmy L. Salin
Senior Economist, Project Manager
delmy.salin@usda.gov
202.720.0833

Jessica Ladd
Visual Information Specialist
jessica.ladd@usda.gov
202.720.6494

Data Sets (XLS files):

- [Figure 3. Truck rates for selected southern Brazilian soybean export transportation routes, 2017-20](#)
- [Figure 4. Truck rates for selected north, south, and northeastern Brazilian soybean export transportation routes, 2017-20](#)
- [Figure 5. Brazilian soybean export truck transportation weighted average prices, 2017-20](#)
- [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](#)
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- [Table 6. Quarterly costs of transporting Brazilian soybeans from the northern and northeastern ports to Hamburg, Germany](#)
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- [Table 9. Quarterly ocean freight rates for shipping soybeans from selected Brazilian ports to Germany and China \(US\\$/metric ton\)](#)

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