

# United States–South America Ocean Grain Freight Spreads (Summary)

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This paper is a summary of: *U.S.–South America Ocean Grain Freight Spreads*, by Jay O’Neil, International Grains Program Institute (IGP), Kansas State University (KSU). The full paper is available at <http://hdl.handle.net/2097/18876>.

In recent years, the United States—the world’s leading producer and exporter of soybeans—has lost market share to Argentina and Brazil. At the farm level, the 2013 per-bushel production costs in the main producing areas of the U.S. Midwest averaged \$9.62 per bushel, compared with \$7.14 per bushel in Argentina, \$8.15 per bushel in the Brazilian State of Mato Grosso, and \$7.68 per bushel in Brazil’s Paraná. Even though U.S. production costs are higher, the total transportation costs from point of production to the destination in Asia are generally lower than for South American soybeans, allowing U.S. soybeans to compete.

Relatively small differences in seaborne transportation costs can make South America soybean exports more competitive than those of the United States, diverting trade from the United States to Brazil or Argentina, or the reverse. Ocean freight spread is the cost difference between two vessel routes to the same destination, such as the U.S. Gulf and the Pacific Northwest (PNW) versus South America to Asia (China and Japan), or the U.S. Gulf versus South America to Europe and China.<sup>1</sup>

A researcher with the International Grains Program Institute at Kansas State University found that the ocean freight rates for grain cargos from South America to Asia are often less expensive than from the U.S. Gulf because of dry-bulk vessel route patterns, lower cost port charges, higher Panama Canal tolls, and less burdensome navigation restrictions. South America shipments provide some natural competitive advantages for Brazilian and Argentinean grains and oilseeds by sailing around Cape Horn and avoiding the Panama Canal when the need exists. South American shippers can load vessels too large to fit through the Canal, gaining economies of scale and avoiding Canal fees and delays. Brazilian ports also provide less expensive berthing (dockage) costs for vessels.

<sup>1</sup> The U.S.–South American ocean freight spread competitiveness occurs in the Atlantic route (U.S. Gulf) to China and not in the U.S. Pacific Northwest (PNW) because of the Panama Canal and the Canal transit costs limitations.

Market conditions at any time may change the estimated route voyage cost. For example, the estimated vessel freight trade can be above or below these straight cost calculations. Consequently, the market will trade at whatever price level it deems appropriate. Seasonal port backlogs impact the logistical flow of commodities and shipper costs, but in a supply push market (markets where supply is abundant), these extra costs generally get passed back to the local producers rather than the shipper or commodity buyer and therefore have a smaller effect on ocean freight rate spreads. This is true whether commodities are sold free on board<sup>2</sup> (FOB) or cost and freight<sup>3</sup> (CNF).

<b>Vessel costs from U.S. Gulf versus Argentina and Brazil to Shanghai, August 2014</b>			
<b>Cargo Mean Quantity</b>	<b>U.S. Gulf</b>	<b>Argentina</b>	<b>Brazil</b>
	<b>56,000 mt<sup>1</sup></b>	<b>60,000 mt</b>	<b>66,000 mt</b>
Nautical miles (nm)	9,977	11,186	11,031
Voyage days	39	42.5	42
Panama Canal	1		
Laytime both ends	20	24	23
Total voyage duration days	60	66.5	65
Port and Canal fees	\$550,000	\$430,000	\$180,000
Percentage of total costs	16.2	13.0	6.0
Total costs	\$3,400,000	\$3,303,500	\$3,015,000
<b>Freight rate:</b>	<b>\$56.67</b>	<b>\$55.06</b>	<b>\$45.68</b>

<sup>1</sup>Metric tons

Source: O'Neil Commodity Consulting

Loading delays and vessel backups in South America are often much longer than in the United States. But these costs are charged to the charterer and not the vessel, so they do not influence the per metric ton (mt) freight rate. The cost of the resulting vessel demurrage, however, does have a significant impact on the value of the FOB cargo and the price received by South American producers. For example, "FOB Santos" shows that the Brazilian seller will pay for transporting the grain to the Port of Santos and the cost of loading the grain onto the ship, including inland haulage, customs clearance, origin documentation charges, and demurrage. Once all the grain is on board, the buyer pays for all costs beyond that point.

<sup>2</sup> FOB Origin indicates that the sale is considered complete at the seller's shipping dock, and thus the buyer is responsible for freight costs/liability.

<sup>3</sup> CNF refers to a common type of shipping agreement where the seller pays for delivering the item to the port closest to the buyer. CNF shipping terms does not include the cost of cargo insurance.

There is no readily available public data identifying the ocean freight spreads between the United States and South America. This study is based on primary data from O’Neil Commodity Consulting. Secondary data sources are USDA-AMS Transportation Services Division, Bluewater Shipping Port statistics, and the Panama Canal Authority. Some ocean transportation data is derived from reports and database materials from 2012 to 2014 which are understood to be accurate through the end of the calendar year 2013. The study does not include inland transportation costs in each competing region.

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