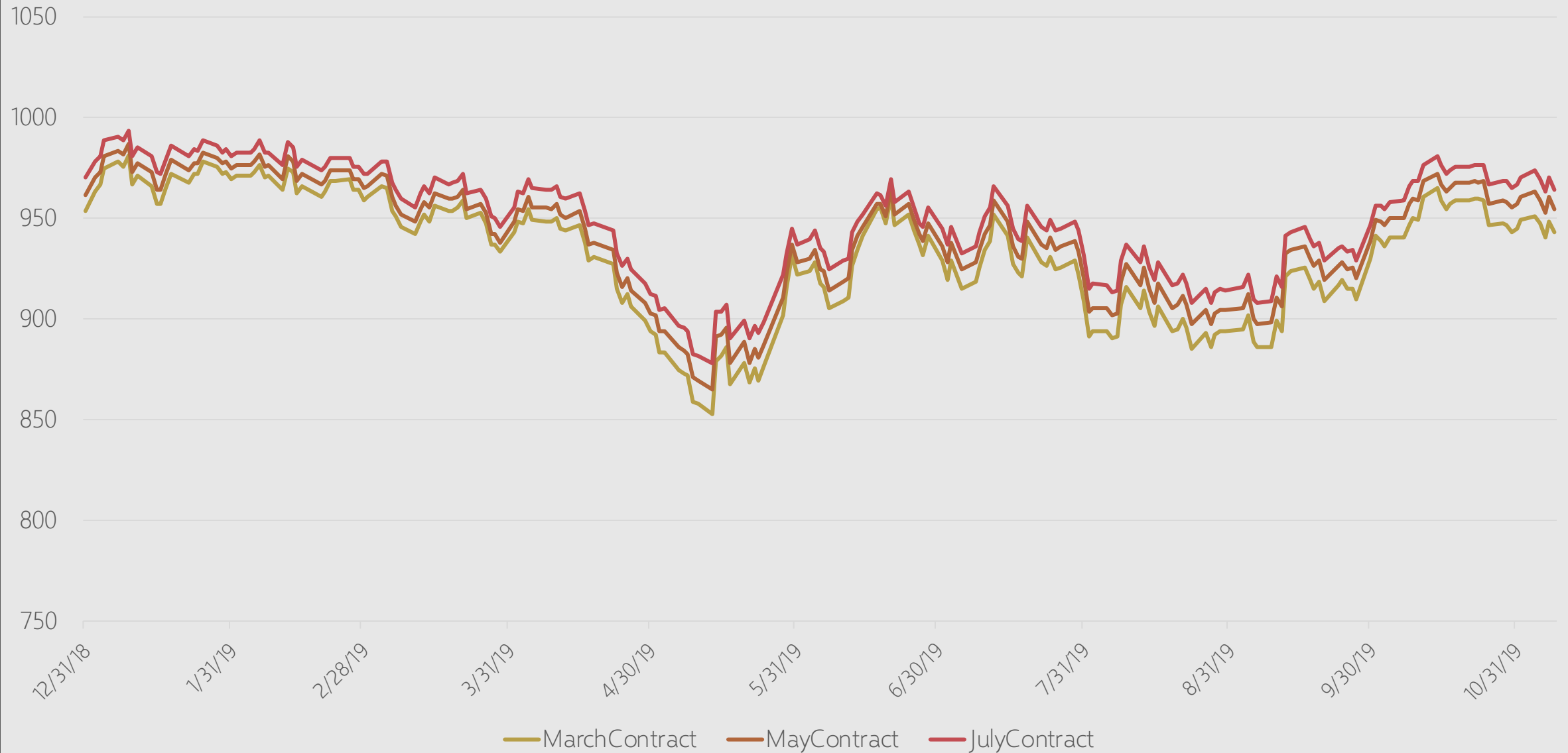




Minnesota Data Analytics, Winona State University

Marshal Will, Aaron Foster, Mikolaj
Wieczorek, Masha M. Stephen

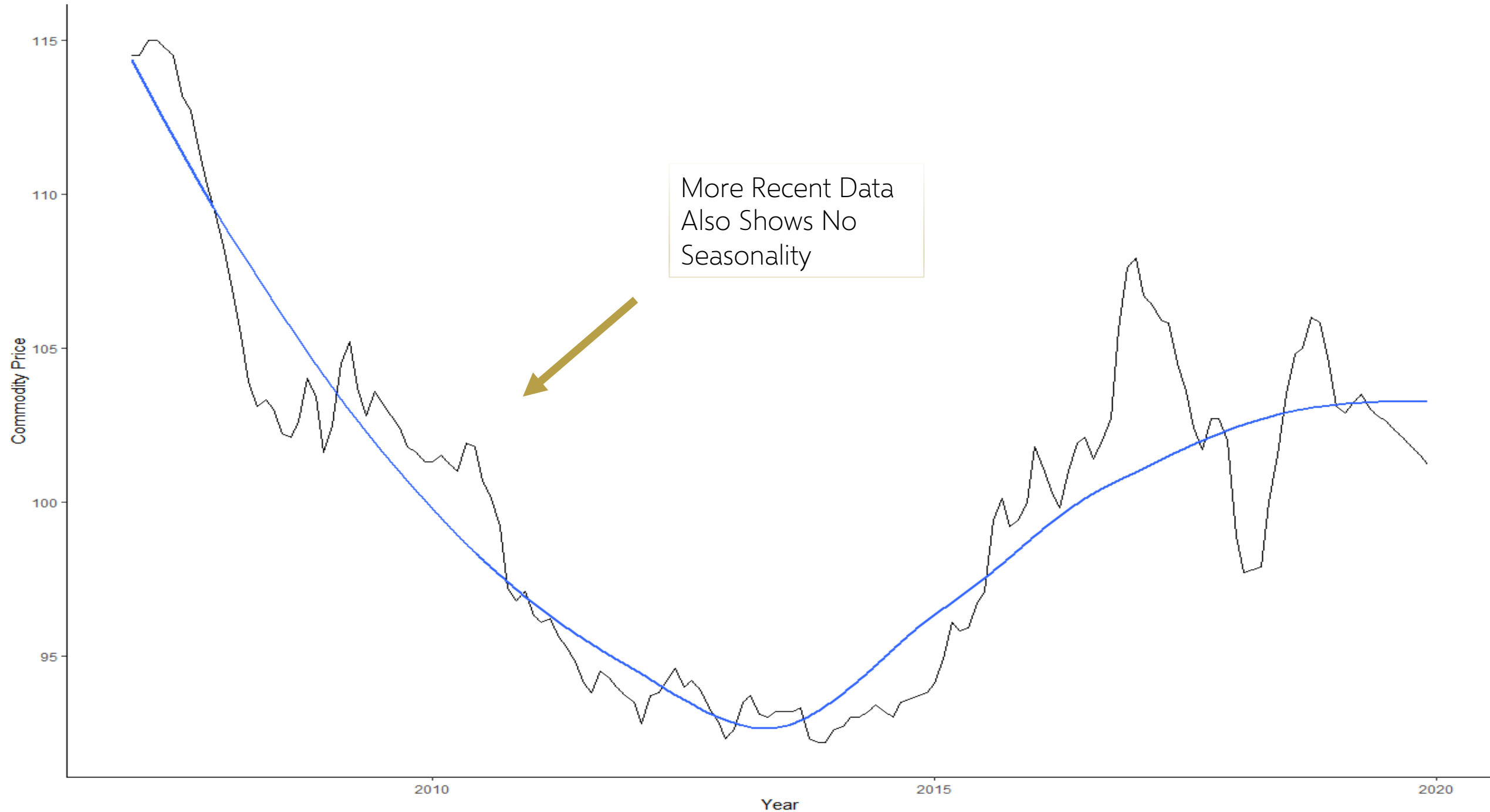
Historical Prices for Future Contracts



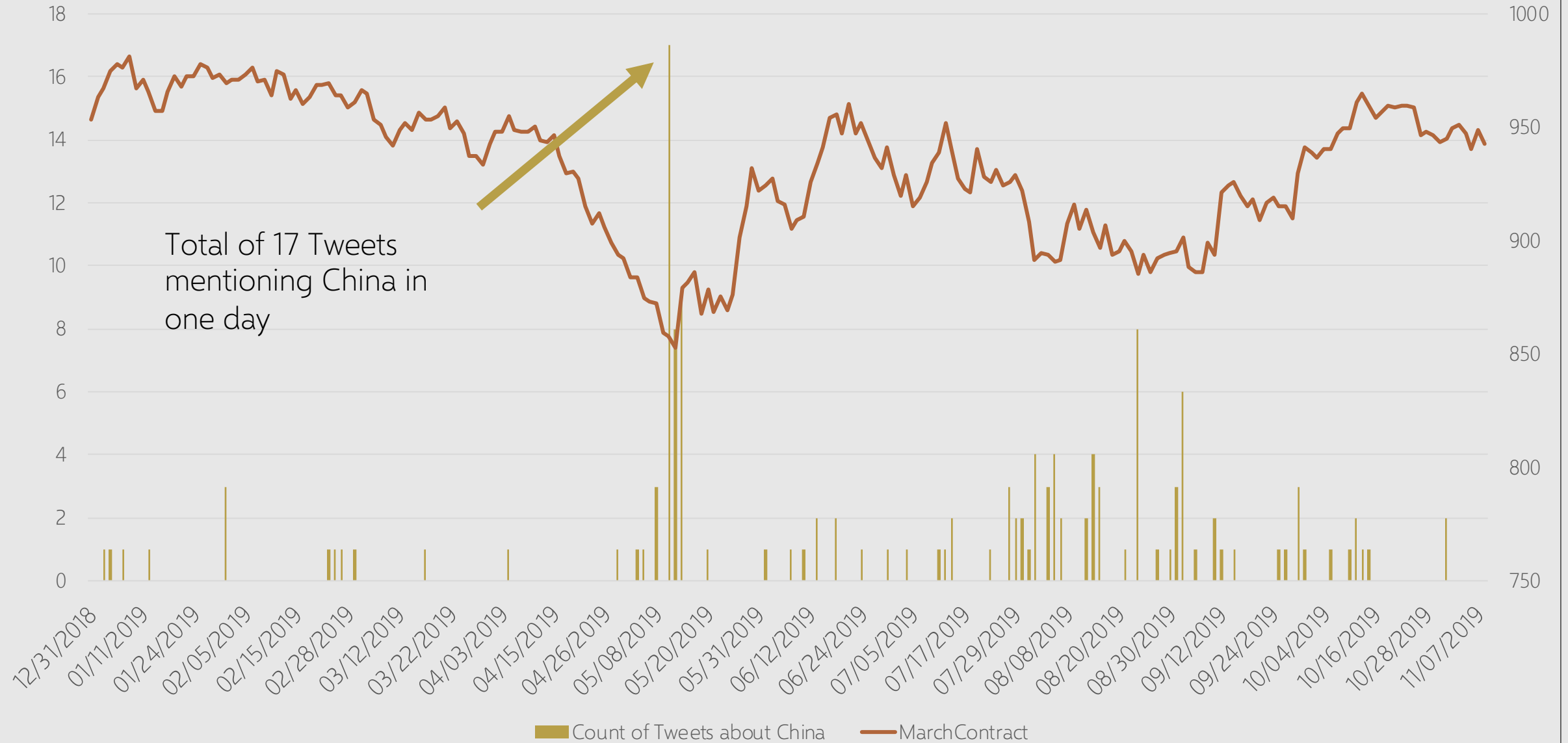
Commodity Price of Soybeans from 1970 to 2019



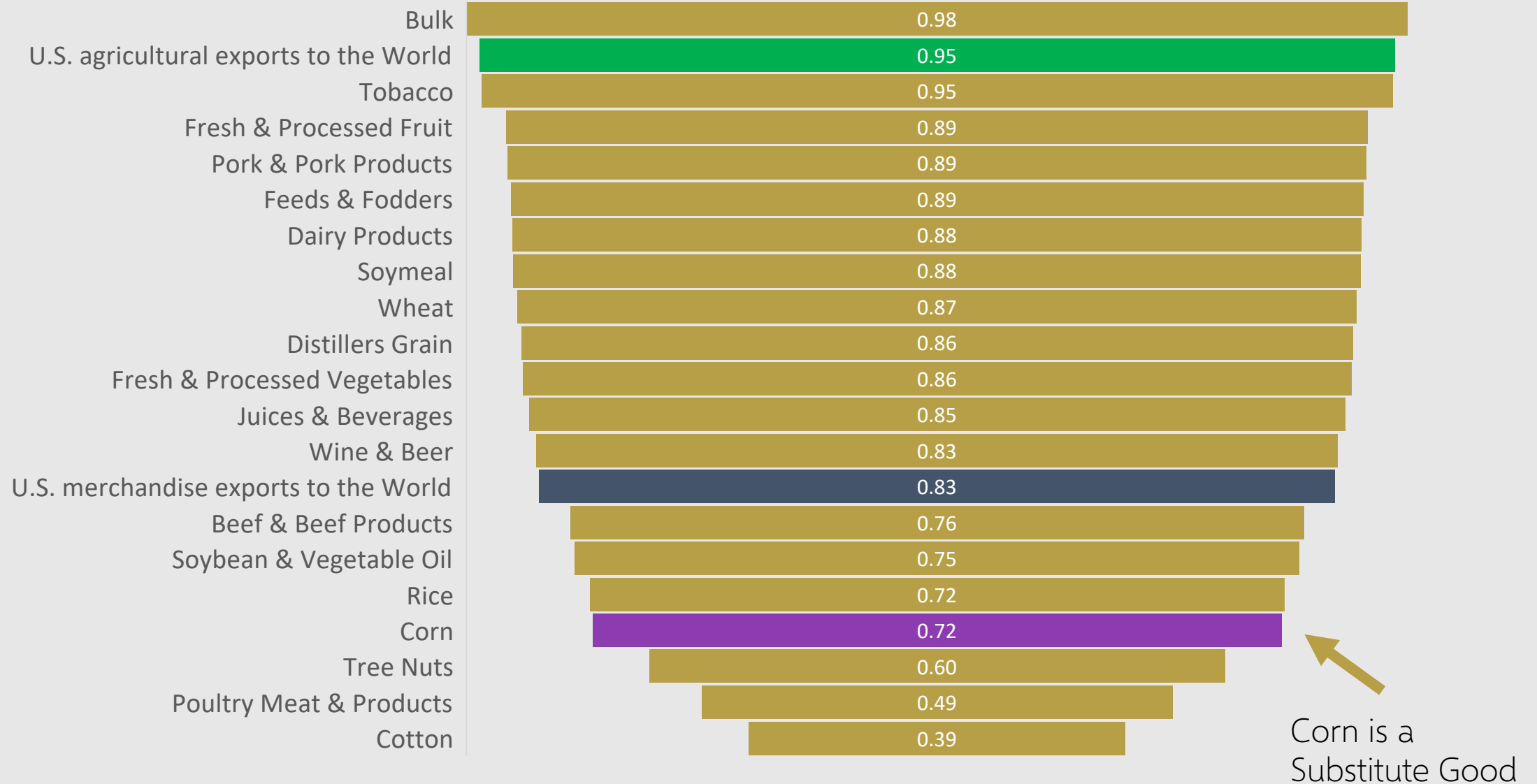
Commodity Price of Soybeans from 2007 to 2019



Price of Contract with a Count of Times Trump Mentions China

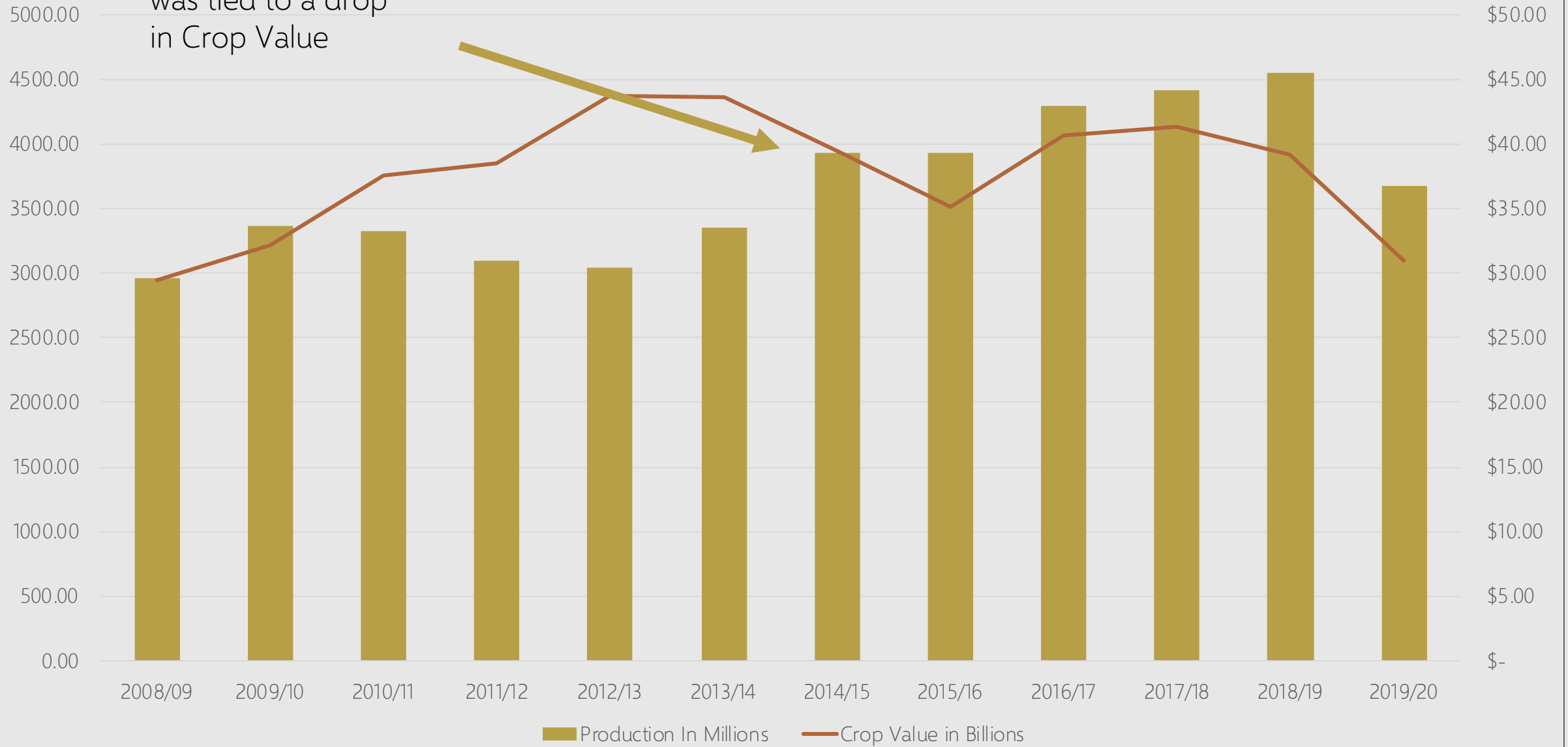


Correlation of Soybeans with other Commodities Starting in 2017

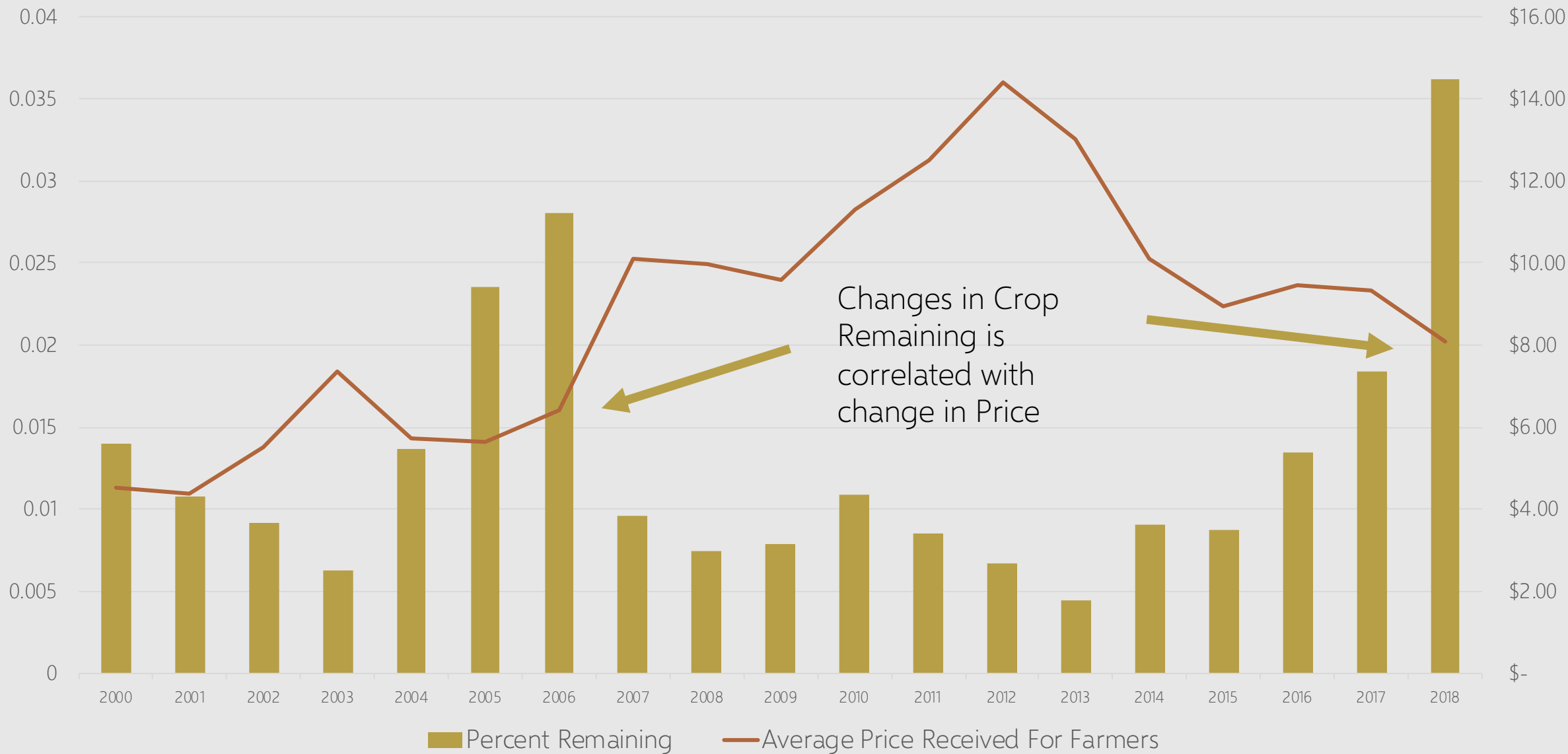


Crop Production Versus Total Price

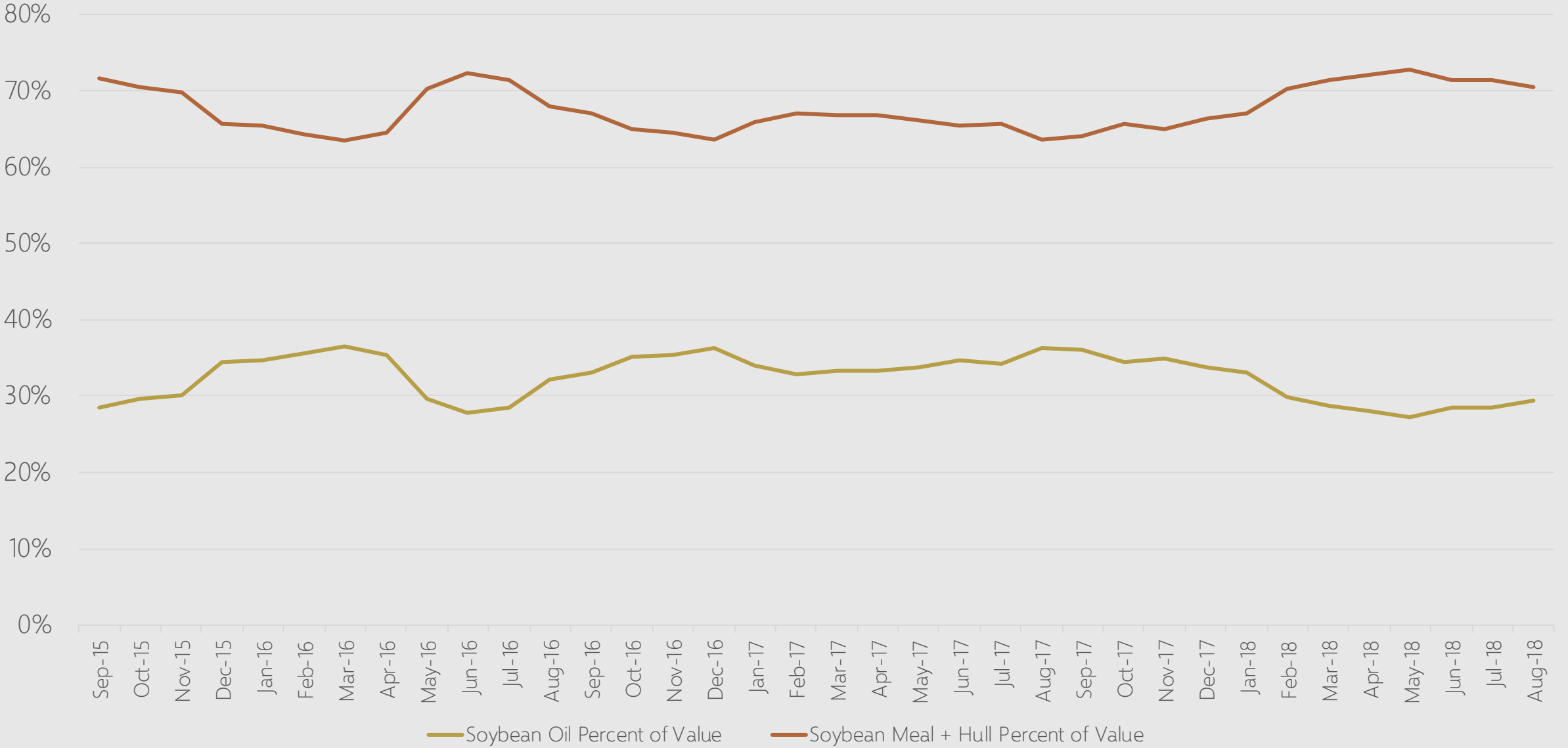
More Production
was tied to a drop
in Crop Value



Percentage of Soybeans Remaining vs. Average Price Farmers Paid

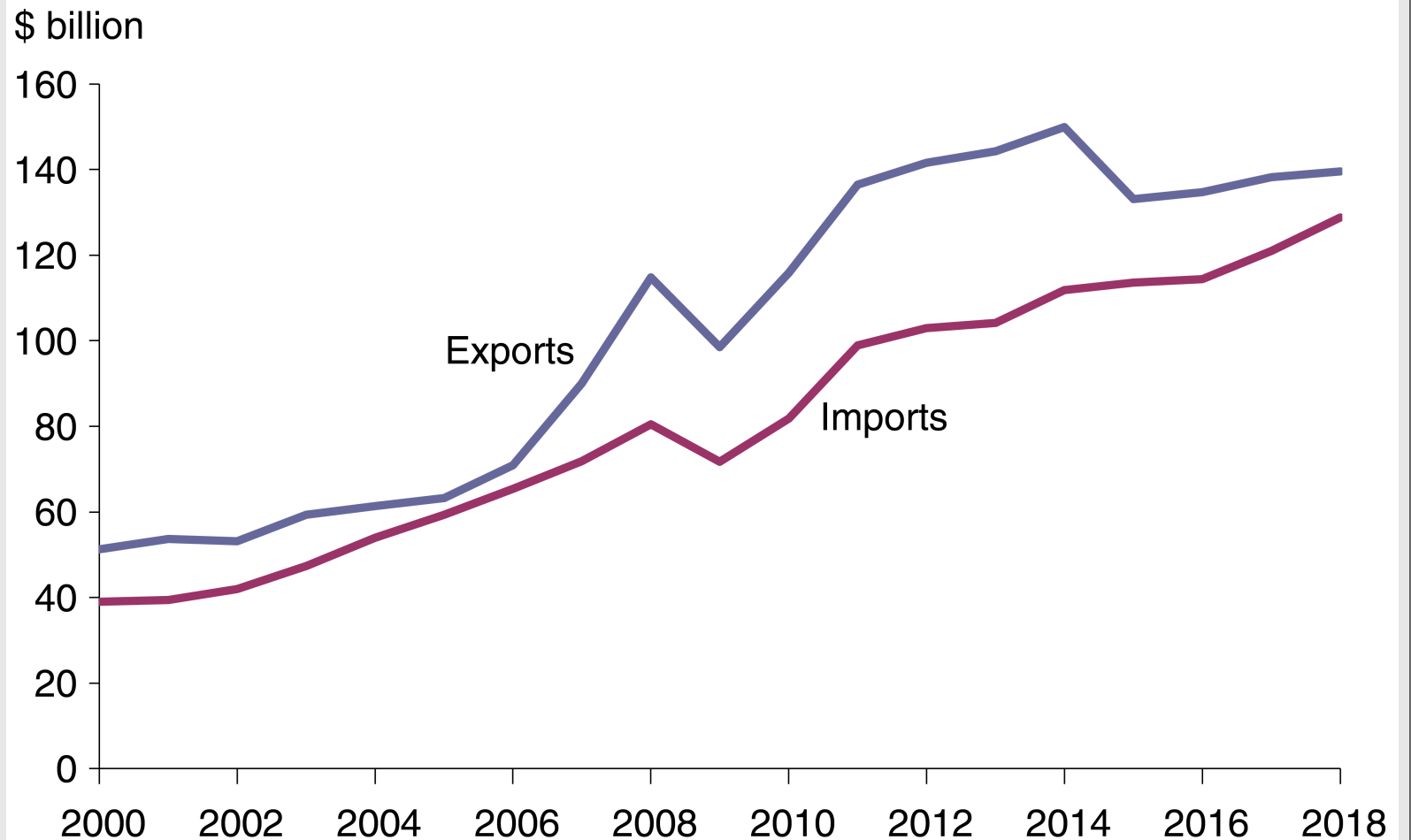


Percentage of Product Value Generated from Soybeans



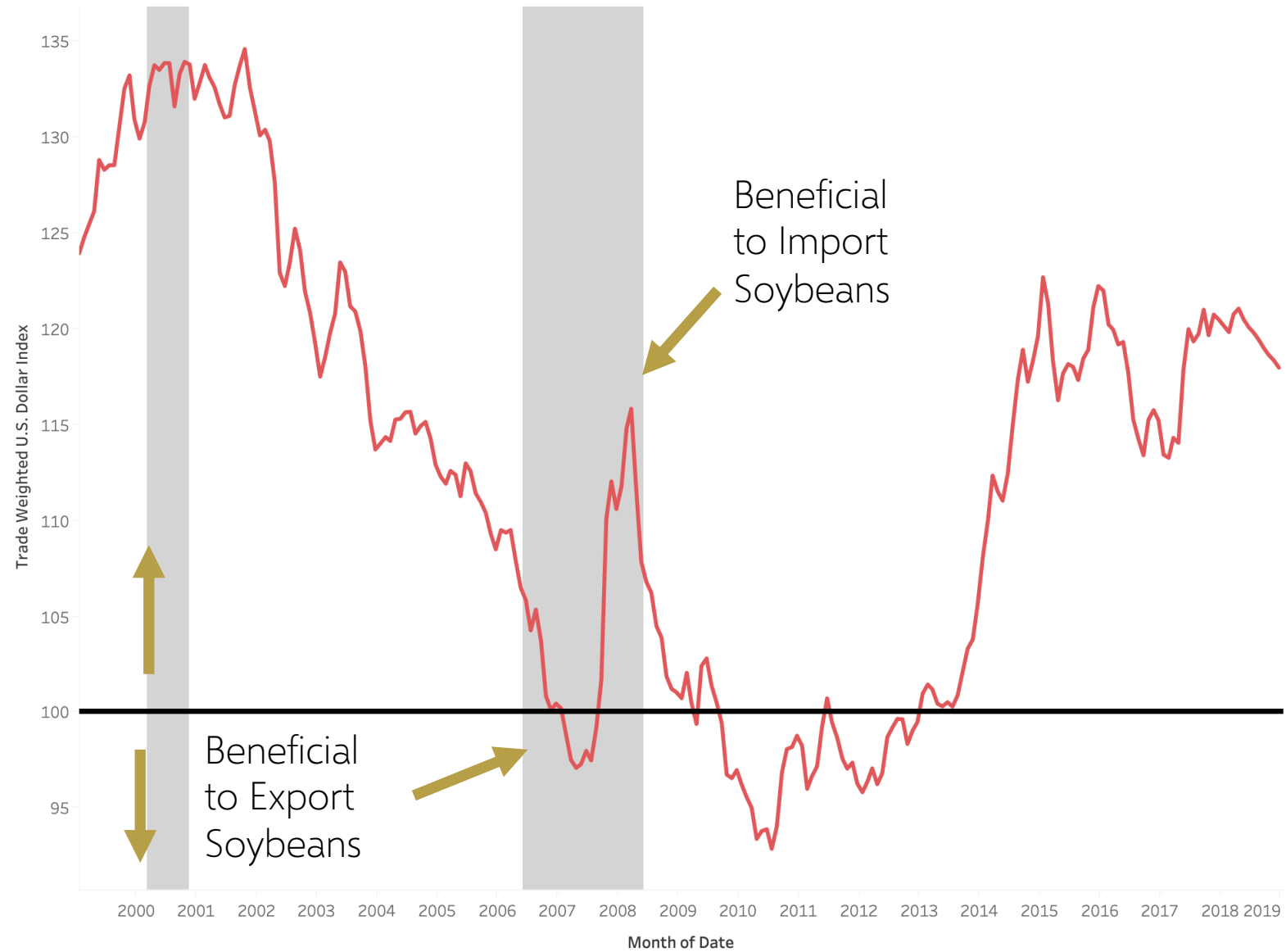
- According to USDA, U.S. agricultural imports are to increase to \$129.0 billion, \$1.5 billion above the total value of imports in fiscal year 2018
- U.S. agricultural exports are to decrease to \$137.0 billion, mostly due to decreases in soybeans and corn exports

U.S. agricultural trade, 2000-18

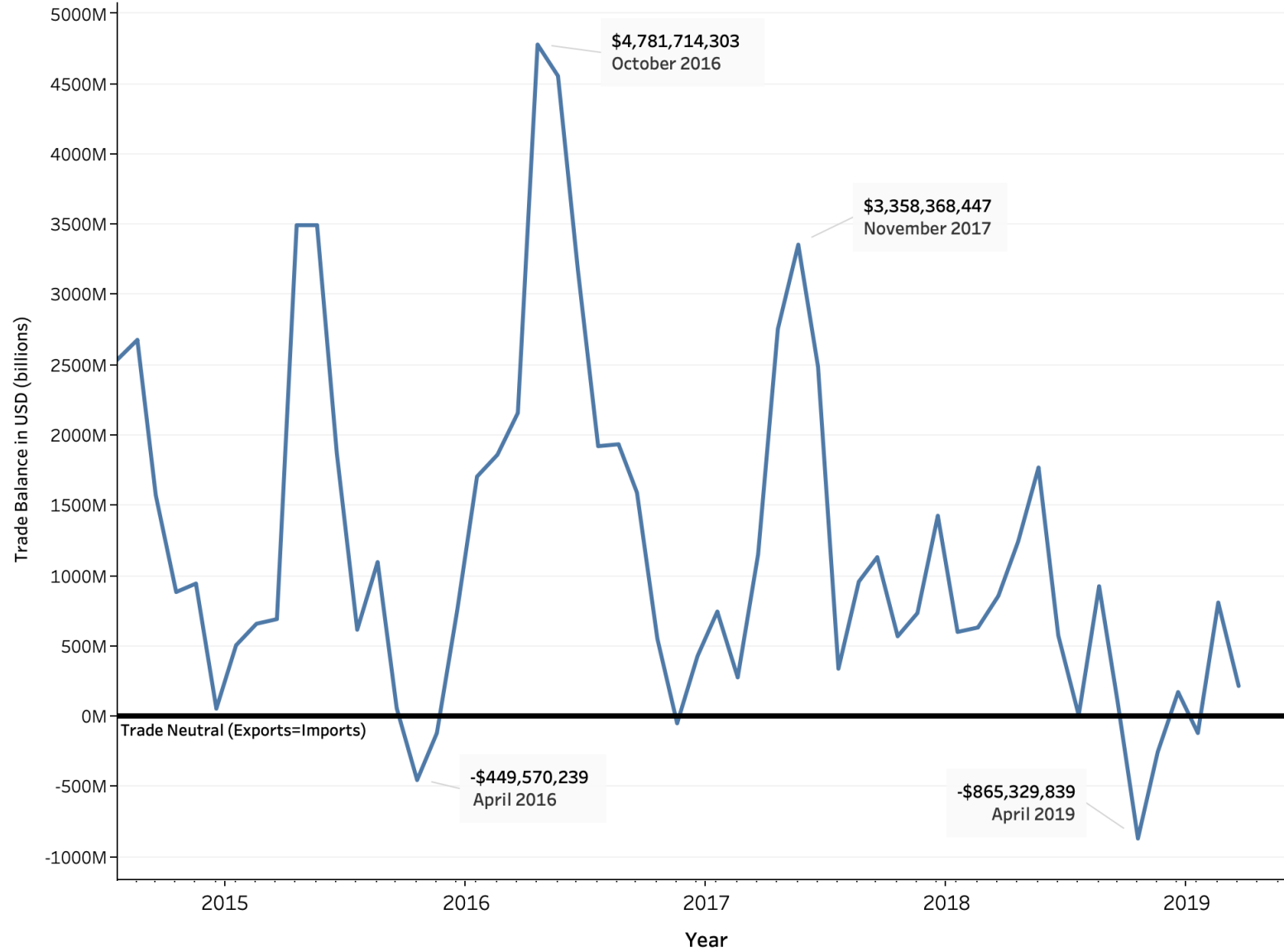


Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, Foreign Trade Database.

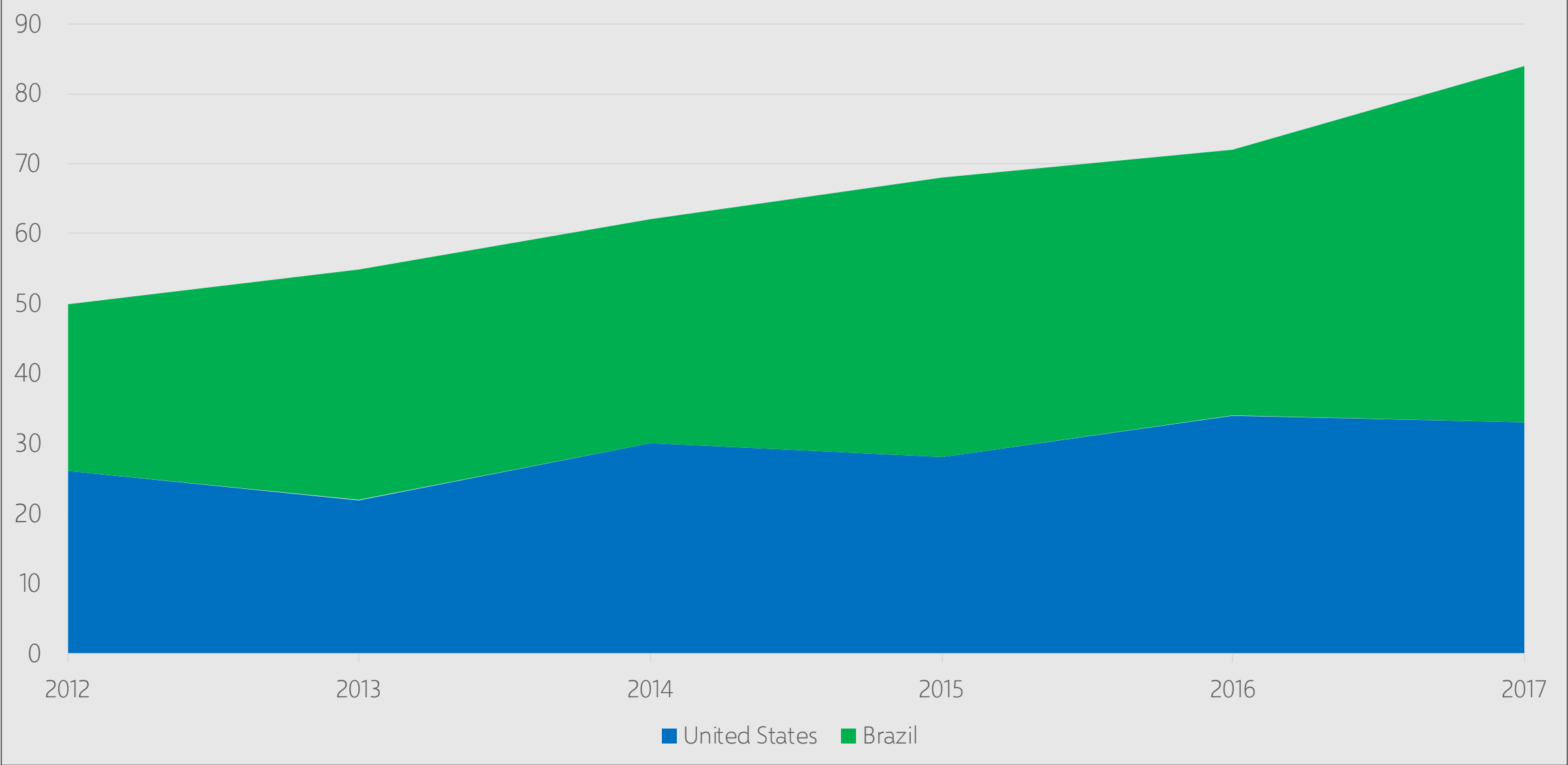
Trade Weigthed USD Index (2000-2019)



U.S. Agricultural Trade Balance (2015-2019)

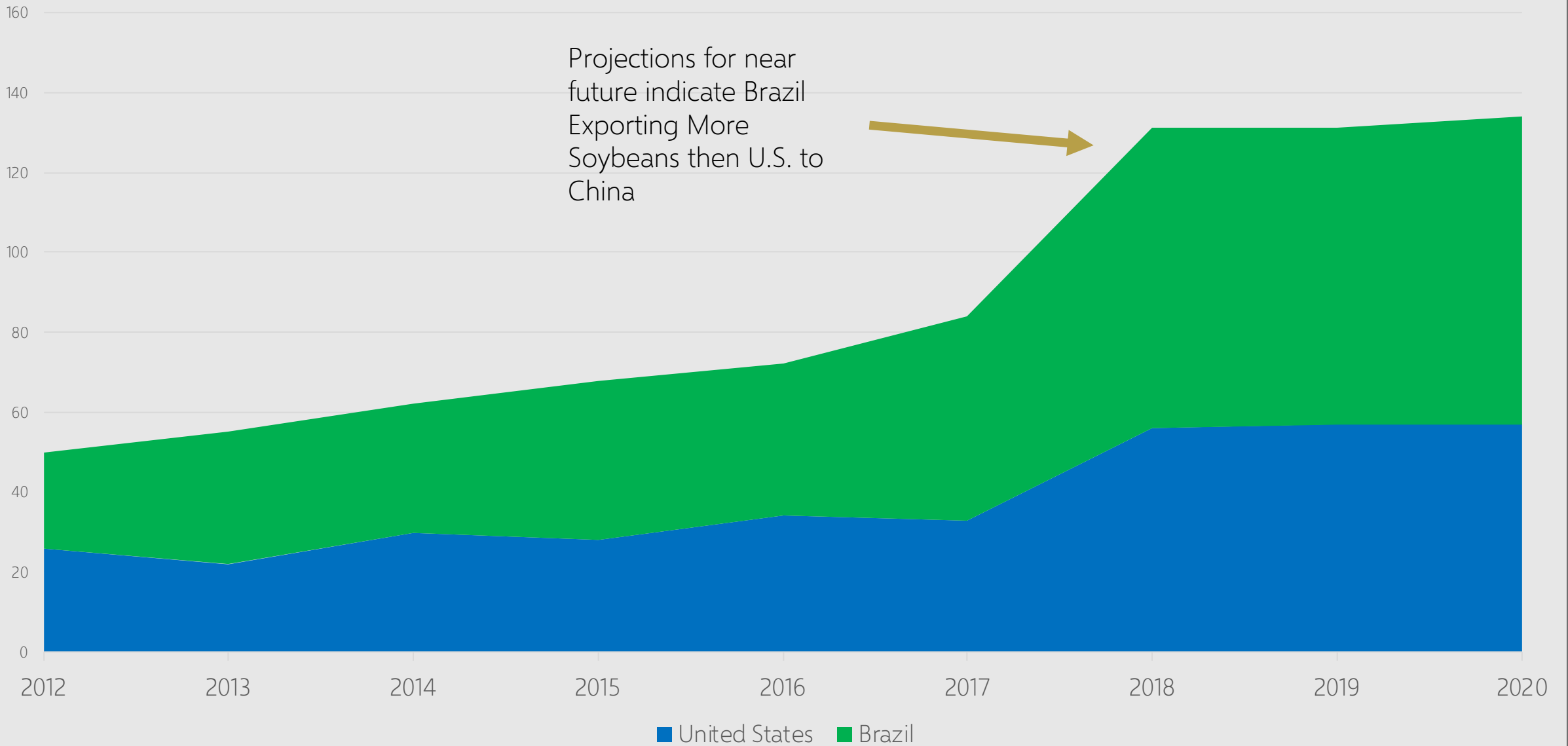


Exports of Soybeans to China Starting in 2012



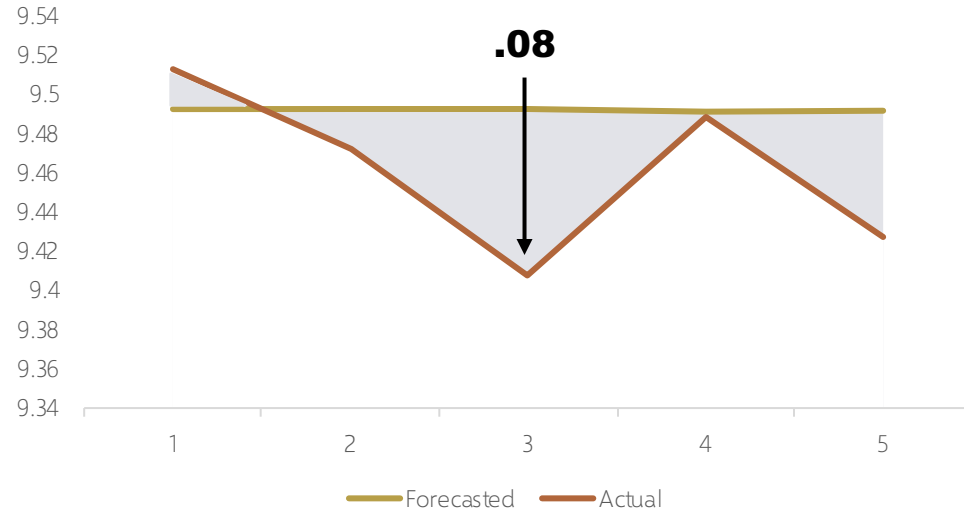
Exports of Soybeans to China Starting 2012 with Projections

Projections for near
future indicate Brazil
Exporting More
Soybeans then U.S. to
China

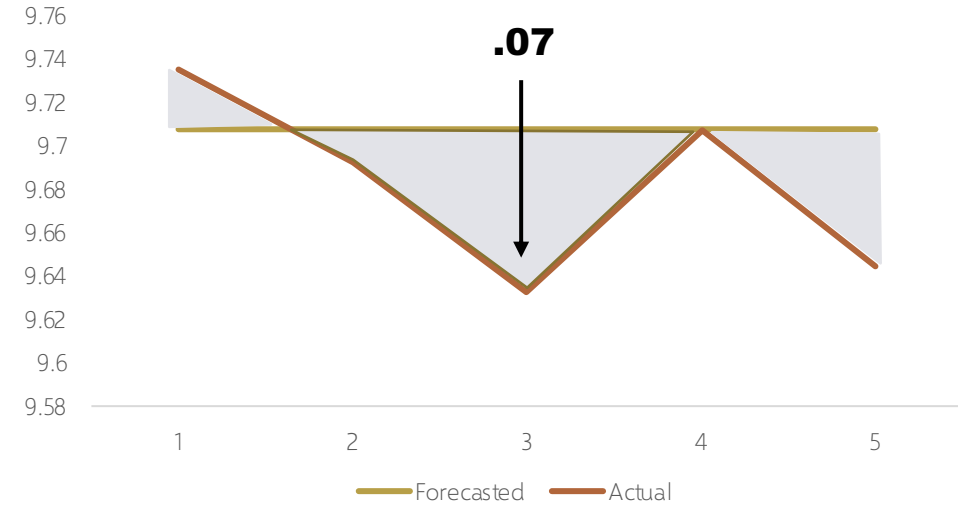


Arima (1,0,0) Auto Regressive Model

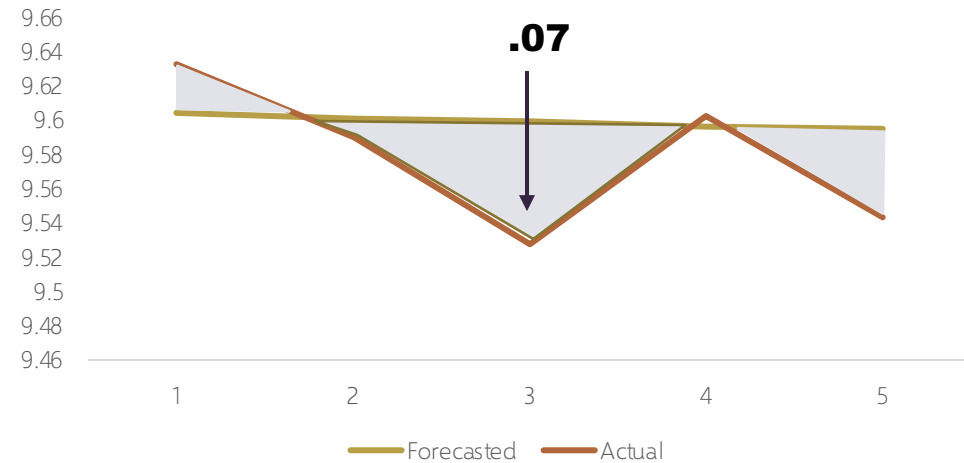
March Future Contract Forecast



July Future Contract Forecast



May Future Contract Forecast



Future Contract	Average Error	MAPE
March	\$ 0.0384	0.407%
May	\$ 0.0338	0.354%
July	\$ 0.0360	0.373%

Recommendations

- If you are a farmer, then you should buy a futures contract **now** for selling because they will earn a higher amount for selling their product.
- If you are a manufacture you should **wait** because the price is expected to decrease more.
- If you currently hold a Soybean contract and you're a farmer you should hold, because price is on a downward trend.

Citations

- O'Donoghue, Erik, et al. "USDA Agricultural Projections to 2028." *USDA ERS*, USDA, Mar. 2019, <https://www.ers.usda.gov/publications/pub-details/?pubid=92599>.
- Elmer, Keegan. "Brazil Swoops on US Soybean as China Trade War Punctures Prices." *South China Morning Post*, SCMP Publisher, 20 July 2018, <https://www.scmp.com/news/china/diplomacy-defence/article/2156195/soybean-giant-brazil-swoops-us-crop-china-trade-war>.
- Eikon, Thomas Reidman
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