

Upheaval in China's Corn Market: Will China expand its Tariff Rate Quota for Corn?

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CHINA'S RECENT corn price and import hikes beg the question of whether it will expand its corn tariff rate quota (TRQ) to meet growing demand. While China's corn price increased by about 30% from \$6.59/bushel in January 2020 to \$8.41/bushel in August 2020 (MARAC 2020), China's corn imports also reached a record 5.59 million metric tons (MMT) as of August 2020 (GACC 2020). In addition, USDA weekly sales reports show China ordered 2.11 MMTs of corn sales for the 2019/20 marketing year and an additional 9.24 MMTs for the 2020/21 marketing year as of September 10, 2020. USDA daily export notices also show that China ordered 350,000 and 140,000 metric tons of corn on September 14 and 22, respectively (USDA 2020a). If we assume that China will import as much corn from non-US countries from September to December 2020 as it did from September to December 2019, and that the United States exports the 9.24 MMT in booked sales to China in 2020, then China's total corn imports will reach 15.7 MMT in 2020.

In addition, on May 28, 2020, China began its annual corn auction from its state stockpile, and, as of the end of August, has almost sold all of the 58 MMTs of corn it put up for sale from the state reserve. The futures, trade, and auction markets are sending a clear signal that China's corn supply is falling short of its demand, which is quite different from 2016, when China's government adopted a series of policies to destock its more-than 200 MMTs of

corn inventory (Wu and Zhang 2016).

In this article, we first review China's various de-inventorying efforts since 2016 that led to the recent corn price hikes and then discuss uncertainties in China's ethanol market driven by corn supply shortages. We also discuss the possibility of China expanding or even lifting its corn TRQ to meet growing demand.

China's recent corn price hikes

Figure 1 shows China's corn harvested area, production, consumption, and stocks from 2000 to 2019. China's harvested area gradually increased from 23 million hectares in 2000 to a record 44.9 million hectares in 2015; and, ending inventory also increased from 35 MMT in 2005 to 223 MMT in 2016. In 2008, China started a corn stockpiling program, in which the government purchased corn from farmers at a price higher than the market level. This

explains the growth in harvested area and inventory prior to 2016.¹ The main purpose of the stockpiling program was to protect farmers' income after China joined the WTO in 2001. However, while the stockpiling program incentivized corn production and increased corn inventory, the growing financial burden and inventory costs drove China to reduce the stockpiling purchase price in 2015 and, ultimately, end the program on March 27, 2016. In its place China adopted a regional corn price subsidy policy to subsidize farmers based on the planted acreage (Wu and Zhang 2016).

To further destock corn inventory, in 2016, China proposed a supply-side reform to reduce corn planted acreage by 3.33 million hectares and increase soybean planted acreage by 2.67 million hectares from 2016 to 2020. It accomplished this by reducing corn subsidies and increasing soybean subsidies. As a result, corn planted

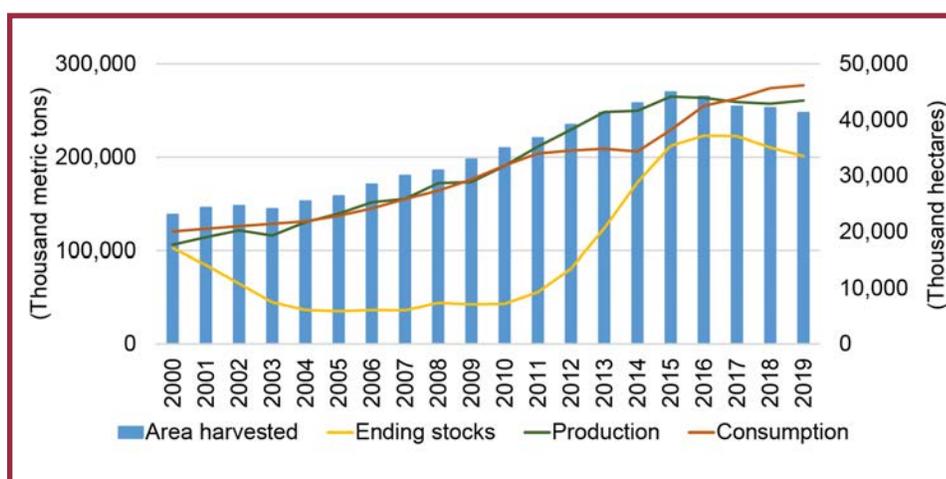


Figure 1. China corn production, consumption, and stock, 2000–2019.

Source: USDA-FAS Market and Trade Data.

¹ China started a stockpiling programs for rice in 2005, wheat in 2006, and for corn, soybeans, and cotton in 2008. The soybean and cotton stockpiling programs ended in 2014.

area has dwindled and corn production has remained flat since 2016. On the demand side, China subsidized corn transportation for processing plants in the south,² and promoted the use of ethanol fuel, which uses corn as a primary feedstock. As a result, China's corn consumption exceeded production for the first time in 2016 and the gap

has widened since, eventually reaching 16 MMT in 2019.

Figure 2 shows that, since 2017, China's growing corn prices are reflective of the widening gap between demand and supply. While the stockpiling program supported high corn prices from 2007 to 2015, prices gradually reduced when the program

ended in 2015, with a gradual rebound since 2017 when corn consumption exceeded production. In addition, the gap between US and China corn prices has also grown over time, providing a lot of room for US corn exports to China (He et al. 2020).

China's uncertain ethanol market

China's ethanol production uses corn as the primary feedstock, and corn availability determines the ethanol industry's prospects to a large extent.³ China's ethanol production increased from 1.6 billion liters in 2006 to 4.3 billion liters in 2019, and the corn used in ethanol production increased from 3.2 MMT to 8.9 MMT from 2006 to 2019 (see figure 3). In September 2017, China announced a national mandate to use ethanol for 10% of its gasoline-type fuels by 2020 (Li et al. 2017); however, this mandate was suspended in December 2019 due to a lack of corn supplies, the trade war, and limited ethanol production capacity.

There are four ethanol-producing plants that could begin production in 2020 in addition to the 15 plants previously approved, increasing China's ethanol production capacity from 5.38 billion liters in 2019 to 6.58 billion liters in 2020 (USDA 2020b). In addition, three cellulosic fuel ethanol projects with a total 558 million liter capacity are seeking investors in Jilin province (USDA 2020b).

To support ethanol demand, China gradually increased ethanol imports from 2010 to 2016, mainly from the United States. However, China increased the tariff on denatured ethanol to 30% on all trading partners in January 2017, up from the 5% tariff before 2017. In addition, China increased the tariff on

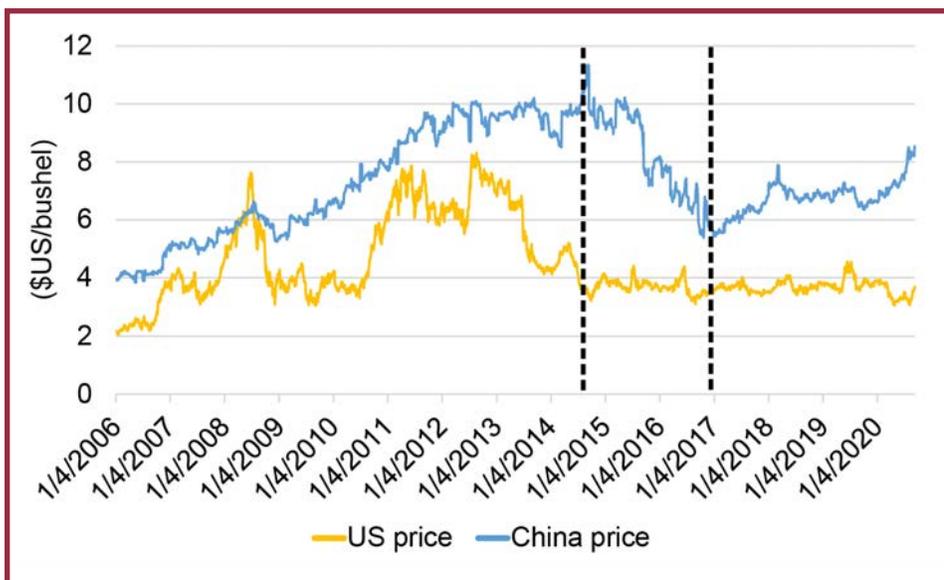


Figure 2. Daily China and US corn price, January 2006–September 2020.

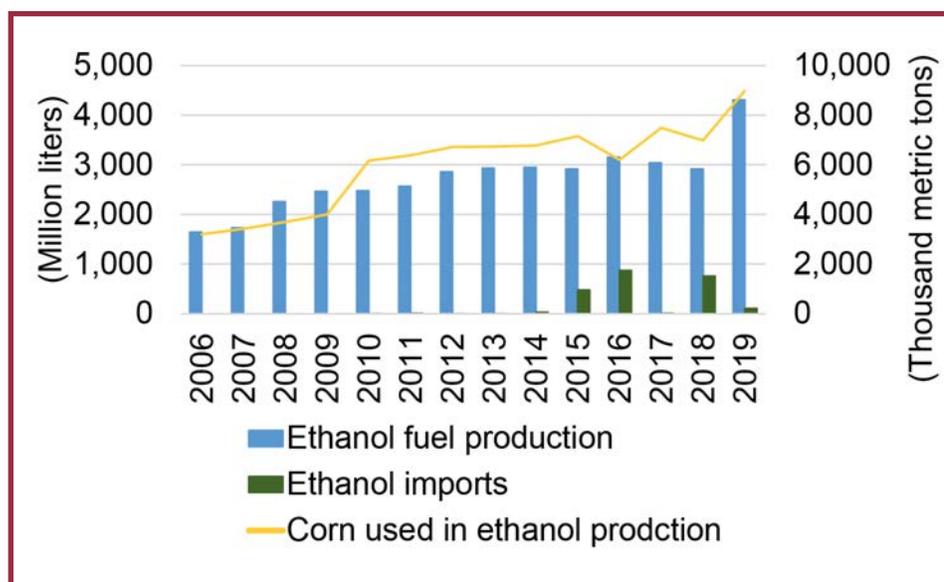


Figure 3. China's ethanol production and corn used in ethanol production, 2006–2019.

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² The major corn producing areas are in the north while the major corn consuming areas are in the south.

³ In 2019, corn accounted for more than 80% of the feedstock of ethanol production (other feedstocks are wheat, sugarcane, and cassava).

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US ethanol to 45% on April 2, 2018, then increased the tariff to 70% on July 6, 2018. Beginning in March 2020, China started allowing ethanol buyers to seek Section 301 countermeasure exemptions for one year, effectively reducing China's tariff on US ethanol to 45%. China resumed its US ethanol imports in 2020 and has imported 312,796 liters of US ethanol as of July 2020.

As of now, surging corn prices, the high tariffs China imposes on ethanol imports, and the difficulty in expanding ethanol production capacity makes the prospects for China's ethanol fuel industry quite uncertain. Given the surplus of ethanol in the United States and the inability of China's ethanol industry to expand, this would clearly be a good time for the United States and China to agree to reduce tariffs on imported ethanol.

Record corn imports and the possibility of expanding corn TRQ

With growing corn prices, China's corn imports reached a record 5.59 MMT as of August 2020 (GACC 2020). The large corn demand is driven by efforts to rebuild its hog industry, which was hit by African swine fever in 2018. Other than corn, China's imports of corn substitutes, including barley, sorghum, and oats, are also increasing, as shown in figure 4. This reflects China's efforts to use corn substitutes as feeds for meat production.

As noted, China's total corn imports could reach 15.7 MMT in 2020/21 marketing year. Therefore, China is very likely to exceed its corn TRQ of 7.2 MMT for the very first time since the corn TRQ system came into effect

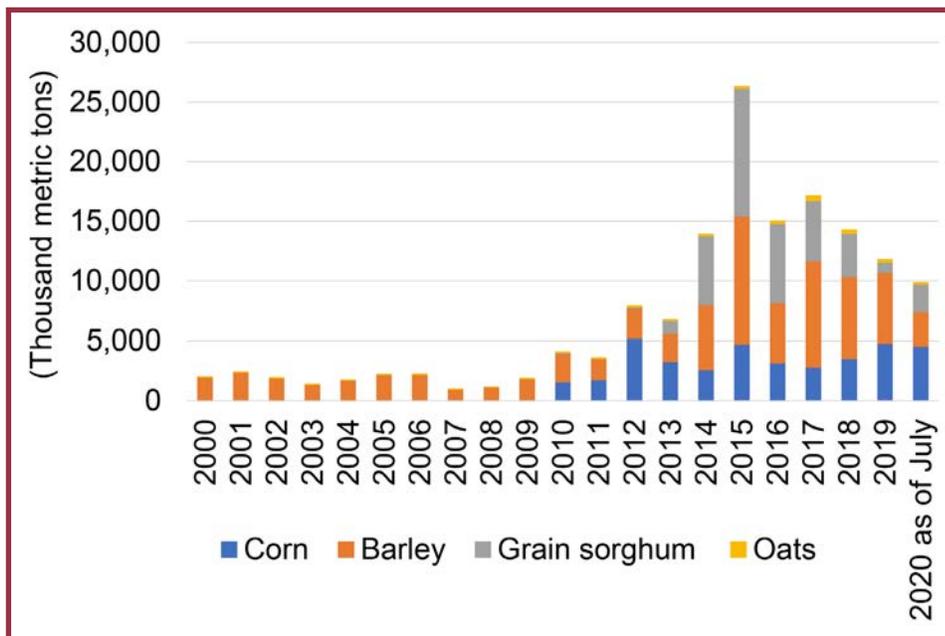


Figure 4. China's corn, barley, sorghum, and oats imports, 2000–2020.

in 1996. Sources indicate that China is considering granting an additional 5 MMT of quota for 2020 (Agricensus 2020).

The fact that China will likely exceed its corn TRQ has significant implications for China's further agricultural trade liberalization. The United States launched a trade dispute against China on its grain tariff rate quota in 2016.⁴ In April 2020, the WTO dispute panel, in which Australia, Brazil, India, and the EU reserved their rights, concluded that China's administration of grain TRQs violated its obligation to administer them on a "transparent, predictable, and fair basis" (Nebehay 2020). The Office of the United States Trade Representative reported that it would continue to press China to comply with its WTO obligations. However, to date, China refuses to lift the TRQ for 2020, even though private importers have ordered more corn for delivery than the quota would allow.

China's recent corn price hikes are caused by de-inventory efforts

that started in 2016. China ended its stockpiling program that purchases corn from farmers at a price above the market level, which reduced planted acreage from 44.9 to 41.2 million hectares between 2016 and 2019. However, China's corn demand has been rising, mainly due to ethanol production expansion, subsidies to corn processing industries, and the growing feed demand from hog production.

To meet the growing demand, China imported record corn and corn substitutes, and its corn imports will easily exceed the TRQ of 7.2 MMT this year. Given WTO's decision on the trade dispute filed by the United States against China's grain tariff rate quota in 2019, both the market and political pressure for China to expand its corn TRQ is strong. Whether China's corn would follow the trade liberalization path of soybeans, for which the TRQ was lifted in 2014, is an important question worth further attention.

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⁴ Wheat, rice, corn, and soybeans are the four major crops in China. China opened the soybean market in 2004 and used TRQ for wheat, rice, and corn to protect its grain self-sufficiency.

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References

Agricensus. 2020. "China Mulls 5mm MT Corn Import Quota after Hawaii Meeting: Sources." June 19, 2020. Available at <https://www.agricensus.com/Article/China-mulls-5m-mt-corn-import-quota-after-hawaii-meeting-sources-12265.html>.

He, X., D.J. Hayes, and W. Zhang. 2020. "China's Agricultural Imports under the Phase One Deal: Is Success Possible?" CARD Policy Brief 20-PB 29. Center for Agricultural and Rural Development, Iowa State University.

General Administration of Customs of China (GACC). 2020. Monthly Statistics of Main Imported Products. Data retrieved from <http://www.customs.gov.cn/customs/302249/302274/302277/index.html>.

Li, M., W. Zhang, D. Hayes, R. Arthur, Y. Yang, and X. Wang. 2017. "China's New Nationwide E10 Ethanol Mandate and its Global Implications." Agricultural Policy Review, Fall 2017. Center for Agricultural and Rural Development, Iowa State University.

Ministry of Agricultural and Rural Affairs of China. (MARAC). 2020. Price of Agricultural Products. Data retrieved from <http://zdscxx.moa.gov.cn:8080/nyb/pc/frequency.jsp>.

Nebehay, S. 2020. "U.S. wins WTO ruling against China grain import quotas." Reuters, April 18, 2020. Available at <https://www.reuters.com/article/us-usa-trade-china-agriculture/u-s-wins-wto-ruling-against-china-grain-import-quotas-idUSKCN1RU1PM>.

United States Department of Agriculture (USDA). 2020a. U.S. Export Sales. Data

retrieved from <https://apps.fas.usda.gov/export-sales/esrd1.html>.

United States Department of Agriculture (USDA). 2020b. China Biofuels Annual. Available at <https://bit.ly/36kIC2F>.

Wu, Q., and W. Zhang. 2016. "Of Maize and Markets: China's New Corn Policy." Agricultural Policy Review, Fall 2016. Center for Agricultural and Rural Development, Iowa State University.

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ISU Researchers to Investigate Ag Supply Chain Resiliency

CARD economists Keri Jacobs, John Crespi, Chad Hart, Dermot Hayes, and Lee Schulz, with Iowa State Associate Professor of Supply Chain Management Bobby Martens, have received a USDA grant that will allow them to study how the COVID-19 pandemic has impacted the US food supply chain with the goal of finding short- and long-term solutions to increase resiliency against future disruptions. To help understand how and why COVID-19 disrupted the

agricultural supply chain the ways it did, and to help prevent similar things from happening in the future, Jacobs will lead the study "Agricultural Supply Chain Disruptions: Costs and Mitigation Strategies to Enhance Resiliency of Ag Supply Chains," which aims to enhance the resiliency of the beef, pork, dairy, and egg supply chains in the Midwest. The project was recently awarded a two-year, \$458,000 National Institute of Food and Agriculture COVID-19 Rapid Response Program grant.

"We will, among other things, explore

potential risk-mitigating strategies that firms in the beef, pork, egg, and dairy supply chains can use to reduce the impact of the current pandemic or future similar disruptions," Jacobs said. "Fundamentally, this disruption made it very apparent where we can benefit from better information, and that is what our project aims to do—generate more informed and synthesized market information to aid supply chains."

You can read more about the grant at

<https://bit.ly/3n5E71Y>.

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