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## China's Agricultural Imports under the Phase One Deal: Is Success Possible?

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## **Executive Summary**

This version updates the November 2020 version of CARD policy brief 20-PB 29 using monthly data until December 2020, weekly data until January 21, 2021, and daily export sales notices until January 29, 2021.

We examine China's committed agricultural purchases under the phase one trade deal and whether it can fulfill those commitments. We review China's agricultural imports from the United States in 2020. We focus on corn, soybeans, cotton, sorghum, pork, beef, poultry, and ethanol. We also examine China's agricultural imports from non-US countries, compare the FOB and CIF prices of major agricultural commodities from the United States and its major competitors, and review tariffs charged on US products to understand the competitiveness of US agricultural exports to China.

US monthly export data show China imported \$27.3 billion worth of agricultural and related products from the United States in calendar year 2020, which is around 74.8% of the first-year trade deal obligation of \$36.5 billion.

US weekly export data until January 21, 2021, show that, overall, China's purchases of US corn, pork, beef, poultry, sorghum, and cotton are making good progress. Specifically, for corn, as of January 21, 2021, China had imported a record 2.11 million metric tons for the 2019/20 marketing year, 5.94 million metric tons for the 2020/21 marketing year to date, and has an outstanding 5.90 million metric tons for delivery in the 2020/21 marketing year. In addition, USDA's daily export sales report shows new corn sales to China of 1.36 million metric tons, 680,000 metric tons, 1.7 million metric tons, 2.108 million metric tons, and 596,000 metric tons on January 26, 27, 28, and 29, respectively, resulting in a minimum of 17.69 million metric tons in advanced sales for marketing year 2020/21, far exceeding the 357,500 metric tons for the 2017/18 marketing year. US weekly export data show that China has imported 16.26 million metric tons of US soybeans for the 2019/20 marketing year, 31.12 million metric tons for the 2020/21 marketing year to date, and has an outstanding 3.62 million metric tons for delivery in the 2020/21 marketing year. In addition, USDA's daily export sales report shows new soybean sales to China of 136,000, 132,000, and 132,000 metric tons on January 22, 27, and 29, respectively, resulting in a minimum 35.13 million metric tons of soybeans committed for delivery for the 2020/21 marketing year, exceeding the 27.68 million metric tons for the 2017/18 marketing year. For meat products, China imported a record 707,554 metric tons of US pork and 43,681 metric tons of US beef in the 2020 calendar year—much higher than the 56,208 metric tons of US pork and 2,089 metric tons of US beef in the full 2017 marketing year. Furthermore, China has ordered 124,444 metric tons of US pork and 33,379 metric tons of US beef for the 2021 marketing year as of January 21, 2021. The upward trend we find seems likely to continue due to China's strong demand for meat.

China's corn imports from all sources reached 11.3 million metric tons in 2020 (GACC 2020), exceeding its corn tariff rate quota for the first time. Given that China has imported 5.94 million metric tons of US corn in the current marketing year, with an outstanding 11.75 million metric tons for delivery, as of January 29, 2021, China is also on track to far exceed its tariff rate quota in 2021.

In the 2020 calendar year, China's total agricultural imports reached \$170.8 billion, a 35.7% increase from the \$125.8 billion in 2017. However, China sourced 84.8% of its agricultural imports from non-US sources in 2020, which, in part, reflects a continued diversification away from US agricultural imports before and during the trade war. Specifically, in 2020, China imported 55% of its corn from Ukraine and 64% of its soybeans from Brazil. However, China's record US corn booking in recent weeks indicates there is still a lot of room for US corn and soybean exports to China in the following months. While the United States accounted for 88% of China's sorghum imports in 2020, US meat products face strong competition from the EU, Brazil, Australia, and Argentina. In 2020, the EU accounted for 58% of China's pork imports, and Brazil, Australia, and Argentina accounted for 74% of China's beef imports.

We use linear extrapolation that accounts for seasonality and trend to predict China's total US and non-US agricultural imports based on 2017 seasonal patterns and China's most recent US agricultural purchases, which includes advanced corn and soybeans sales until January 29, 2021. Specifically, we assume that the advanced corn and soybean sales will be delivered in the first year of the trade deal. We find that China is on track to import \$35.8 billion in agricultural products from the United States in the first year of the trade deal if the ordered corn, soybeans, and ethanol are delivered on time (February 15, 2020, to February 14, 2021).

We also analyze monthly FOB and CIF prices of China's agricultural imports from the United States and its major competitors and find that the FOB prices of US corn, soybeans, and pork are comparable to that of Ukraine corn, Brazil soybeans, and EU pork. However, the CIF prices of US corn and soybeans are higher than the CIF prices of Ukraine corn and Brazil soybeans due to higher transportation costs and retaliatory tariffs that China imposed on the United States. In addition, the recent depreciation of the Brazil real coupled with the strengthening of the US dollar significantly boosted the price competitiveness of Brazil soybeans. Due to the tariff exemptions since March 2020, the gap between US corn and soybeans and Ukraine corn and Brazil soybeans have been dwindling, creating more room for China to import US corn and soybeans in the following months. In addition, since the beginning of 2020, US pork CIF prices have been lower than those of EU pork, indicating that US pork is gaining competitiveness over EU pork. However, the FOB price of US beef is much higher than that of Brazil beef, in part because US beef is grain fed.

## Introduction

On January 15, 2020, China and the United States signed the phase one trade agreement to deescalate a trade war that started in March 2018. In this policy brief, we assume the first year of the trade deal runs from February 15, 2020, to February 14, 2021, and the second year of the agreement runs from February 15, 2021, to February 14, 2022. In addition, we also provide actual statistics on China's imports for the 2020 calendar year. The agreement uses a 2017 baseline level of \$24 billion in agricultural and related products and obligates China to purchase \$36.5 billion worth of US agricultural products in the first year (\$12.5 billion more than the baseline). China's obligations increase to \$43.5 billion in the second year (\$19.5 billion more than the baseline).<sup>1</sup> Early termination of the deal due to COVID-19-related misunderstandings, a lack of data on market forces, or logistical issues that may slow early progress toward implementation would be unfortunate, as the surging Chinese imports under this deal is one of very few current reasons for optimism for US agriculture and the major driver of US commodity price surges.

On August 24, 2020, US and China representatives reviewed the six-month progress of the trade deal and agreed that enough progress was made to move the deal forward (Bloomberg 2020). The Office of the US Trade Representative released a report saying that as of October 23, 2020, China has purchased \$23 billion in agricultural products, approximately 71% of its phase one deal target (USTR 2020b). This statement drew some criticism because it counts commitments and pre-orders as actual purchases. Chad Bown at Peterson Institute of International Economics argued that the actual purchases in 2020 reached 82% (US exports) or 64% (Chinese imports) of their target (Bown 2020). However, the inflated USTR number shows that both countries are eager to push the politically significant trade deal forward. In other words, both countries realize healthy US-China agricultural trade relations are paramount, especially when other parts of bilateral relations deteriorate.

Based on the most recent USDA Foreign Agricultural Service Global Agricultural Trade System (GATS) data, in 2020, US exports of agricultural and related products to China reached \$27.3 billion (USDA 2020a), which is 74.8% of the \$36.5 billion promised in the first year of the trade deal. Based on USDA weekly sales report data prior to January 21, 2021, the US exported a record 2.11 million metric tons (MMT) of corn to China for the 2019/20 marketing year and 5.94 MMT for the 2020/21 marketing year to date, and has an outstanding 5.90 MMT for delivery in the 2020/21 marketing year. In addition, USDA's daily export sales report shows new corn sales to China of 1.36 MMT, 680,000 metric tons, 1.7 MMT, 2.108 MMT, and 596,000 metric tons on January 26, 27, 28, and 29, respectively, resulting in a minimum of 17.69 MMT in advanced sales for marketing year 2020/21. Given that China imported 11.3 MMT of corn in 2020 (GACC 2020), it is very likely that China will also expand its corn tariff rate quota to meet surging demand in the 2021 calendar year.<sup>2</sup>

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<sup>1</sup> While the phase one trade agreement does not explicitly indicate the baseline trade value in 2017, it lists the specific category of agricultural goods in Annex 6.1.

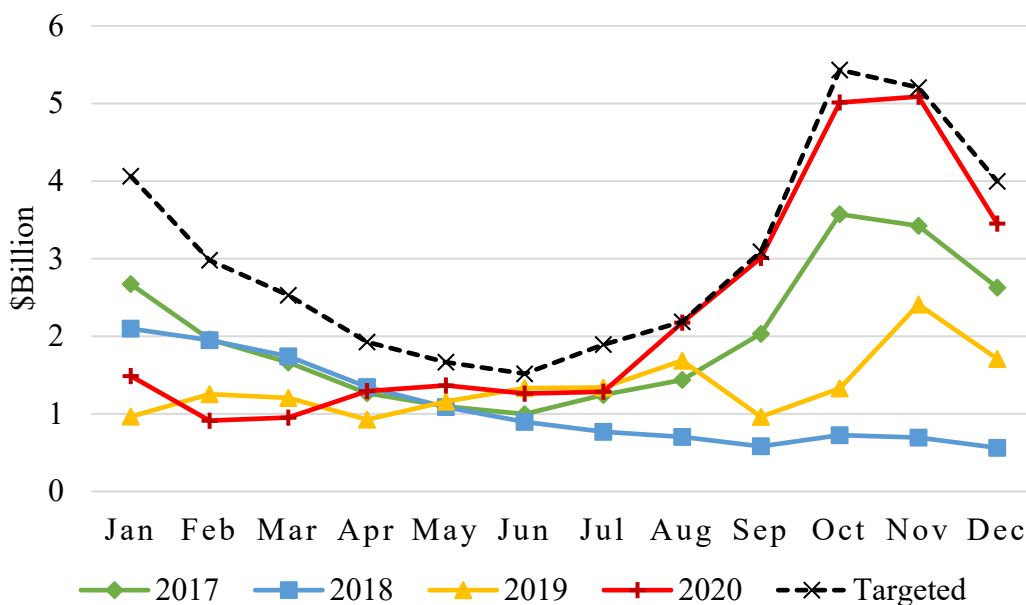
<sup>2</sup> China is also considering adding an extra five million tons of corn quota after meeting with US representatives in Hawaii in June, and China has given COFCO (China Oil and Foodstuffs Corporation) an extra two million ton quota because it used its initial 2020 quota (Agricensus 2020).

As for soybeans, weekly sales data until January 21, 2021, show China has imported 16.26 MMT of US soybeans for the 2019/20 marketing year and has imported 31.12 MMT for the 2020/21 marketing year to date, and has an outstanding 3.62 MMT for delivery in the 2020/21 marketing year. In addition, USDA’s daily export sales report shows new soybean sales to China of 136,000, 132,000, and 132,000 metric tons on January 22, 27, and 29, respectively, resulting in a minimum 35.13 MMT of soybeans committed for delivery for the 2020/21 marketing year (USDA 2020b). China’s surging demand for feed grains is partially caused by a rebuilding of its hog industry.

China’s food production has been affected by above-average rainfall and flooding in provinces along the Yangtze River (Gilberte 2020), which has helped push its total agricultural imports to \$170.8 billion in 2020, a 35.7% increase from the \$125.8 billion in 2017. In addition, while China has removed some retaliatory tariffs imposed on US agricultural products, there is still great confusion over the extent and implementation of the tariff exemptions. Therefore, in this update, we also compare the FOB and CIF prices of key agricultural commodities from the United States and its competitors to evaluate the competitiveness of US agricultural exports to China.

### US Agricultural Exports to China

Figure 1 shows monthly US exports of agricultural and related products to China from January 2017 to December 2020 (USDA 2020a). The dashed line in figure 1 represents prorated monthly US export targets using 2017 seasonality trends and the phase one target value of \$36.5 billion in 2020 (note that the first year of the trade deal is from February 15, 2020, to February 14, 2021).



**Figure 1. Monthly US agricultural and related products exports to China, 2017–2020.**

*Note:* We prorate targets (dashed line) to a monthly basis for illustrative purposes only. The trade agreement does not indicate specific monthly or quarterly targets, only year-end targets.

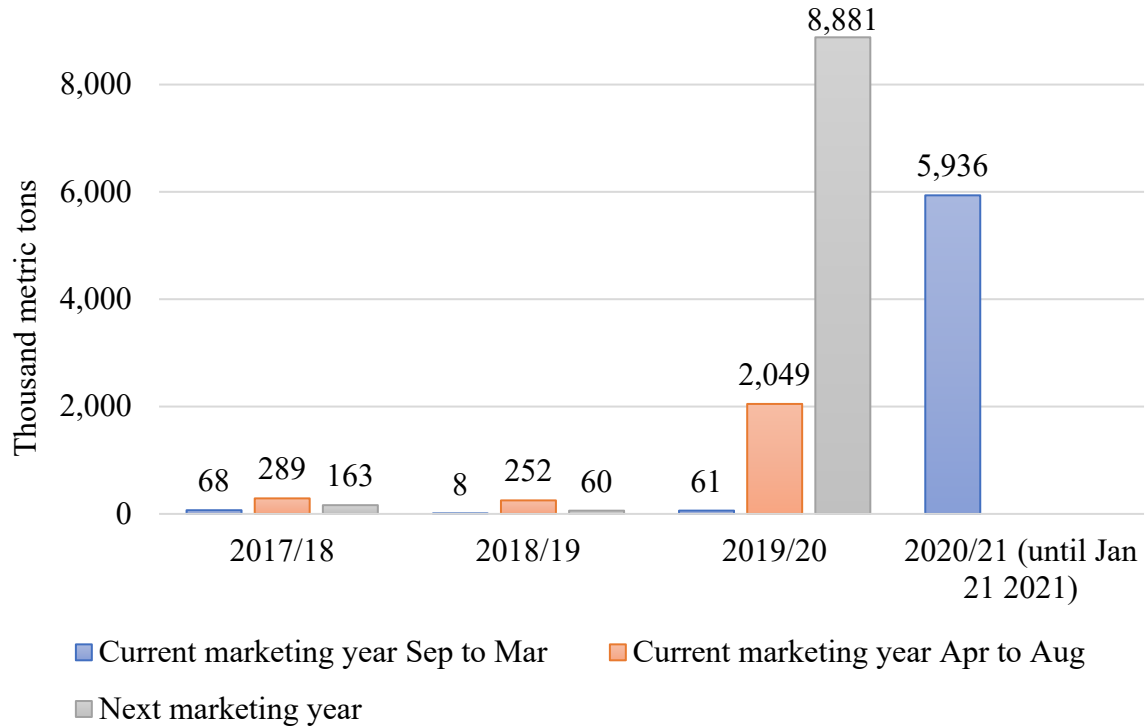
### ***US Weekly Exports of Key Agricultural Commodities to China***

The aggregate patterns illustrated in figure 1 may mask great heterogeneity across commodities. Figures 2a–2f show the patterns of US exports for corn, soybeans, cotton, sorghum, pork, and beef from the 2017/18 marketing year until January 21, 2021, the most recent week for which USDA weekly export sales data are available (USDA 2021b). For each marketing year, we present data for both the 2019/2020 marketing year and sales for the 2020/2021 marketing year. For corn, soybeans, and sorghum, we present sales separately from September to March and from April to August to show seasonality. Because the cotton marketing season starts in August and ends in July, and the United States sells most of its cotton from January to July, we separately present cotton sales from August to December and from January to July.

In the 2017/18 marketing year, China imported 357,500 metric tons of US corn, as figure 2a shows. Since June, China has significantly accelerated purchases of US corn—as of January 21, 2021, China had imported a record 2.11 MMT (\$2.01 billion) for the 2019/20 marketing year, 5.94 MMT for the 2020/21 marketing year, and ordered 5.90 MMT for delivery in the 2020/21 marketing year. In addition, USDA’s daily export sales report shows new corn sales to China of 1.36 MMT, 680,000 metric tons, 1.7 MMT, 2.108 MMT, and 596,000 metric tons on January 26, 27, 28, and 29, respectively, resulting in a minimum of 17.69 MMT in advanced sales for marketing year 2020/21,<sup>3</sup> exceeding its corn tariff rate quota (TRQ) of 7.2 MMT (He et al. 2020). The latest WASDE report released in January 2021 forecasted US corn exports at 2,550 million bushels, which would be record high if realized (USDA 2020c).

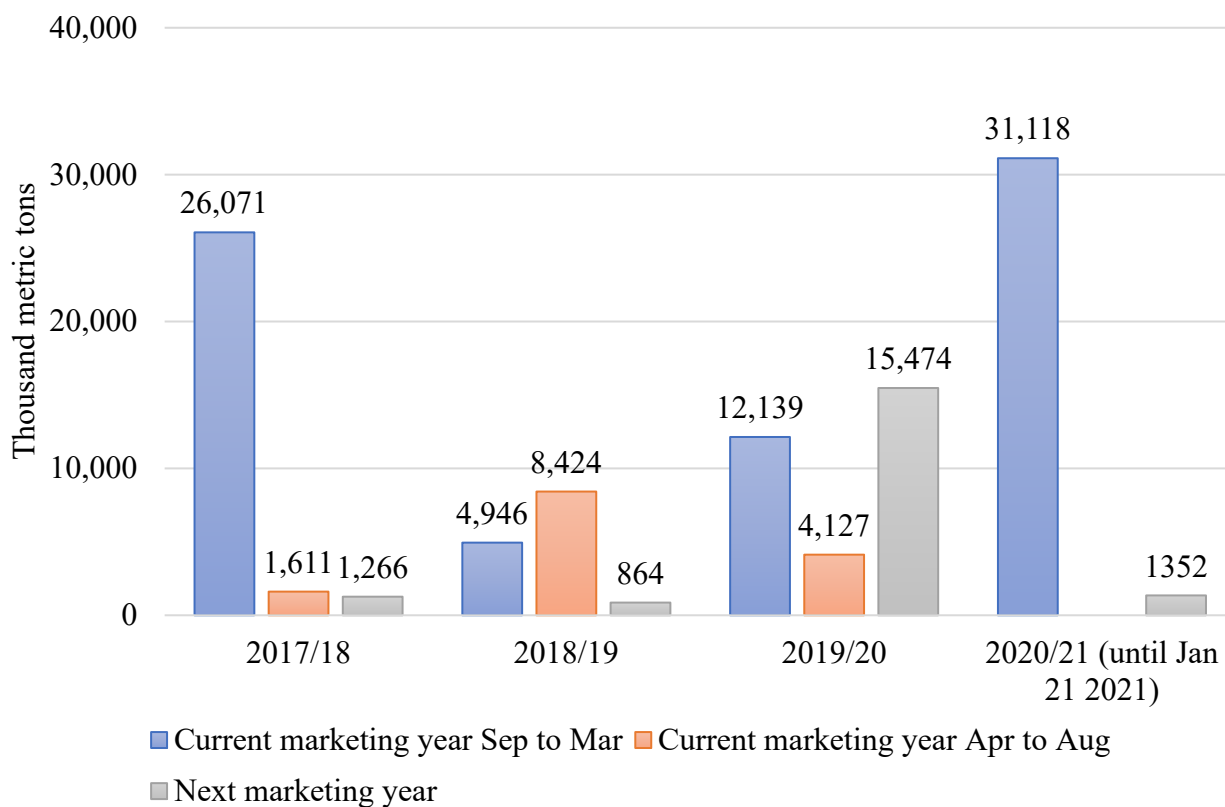
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<sup>3</sup> USDA issues both weekly and daily export sales to the public. Exporters are required to report any export sales of 100,000 tons or more made in one day to USDA. See <https://www.fas.usda.gov/newsroom/private-exporters-report-sales-activity-china-japan-and-unknown-destinations-0> for details.



**Figure 2a. USDA weekly sales data for US corn exports to China, 2017–2021.**

Figure 2b shows that, in the 2017/18 marketing year, China imported 27.6 MMT (\$10.73 billion) of US soybeans, with 94% imported from September to March. In the 2019/20 marketing year, China imported 16.27 MMT of US soybeans. In the 2020/21 marketing year, prior to January 21 2021, China imported 31.12 MMT of US soybeans, which has exceeded its US purchases in the 2017/18 marketing year. In addition, prior to January 21 2021, China pre-booked 3.62 MMT of soybeans for delivery in the 2020/21 marketing year, and USDA’s daily export sales report shows new soybean sales to China of 136,000, 132,000, and 132,000 metric tons on January 22, 27, and 29, respectively, resulting in a minimum 35.13 MMT of soybean sales for marketing year 2020/21.

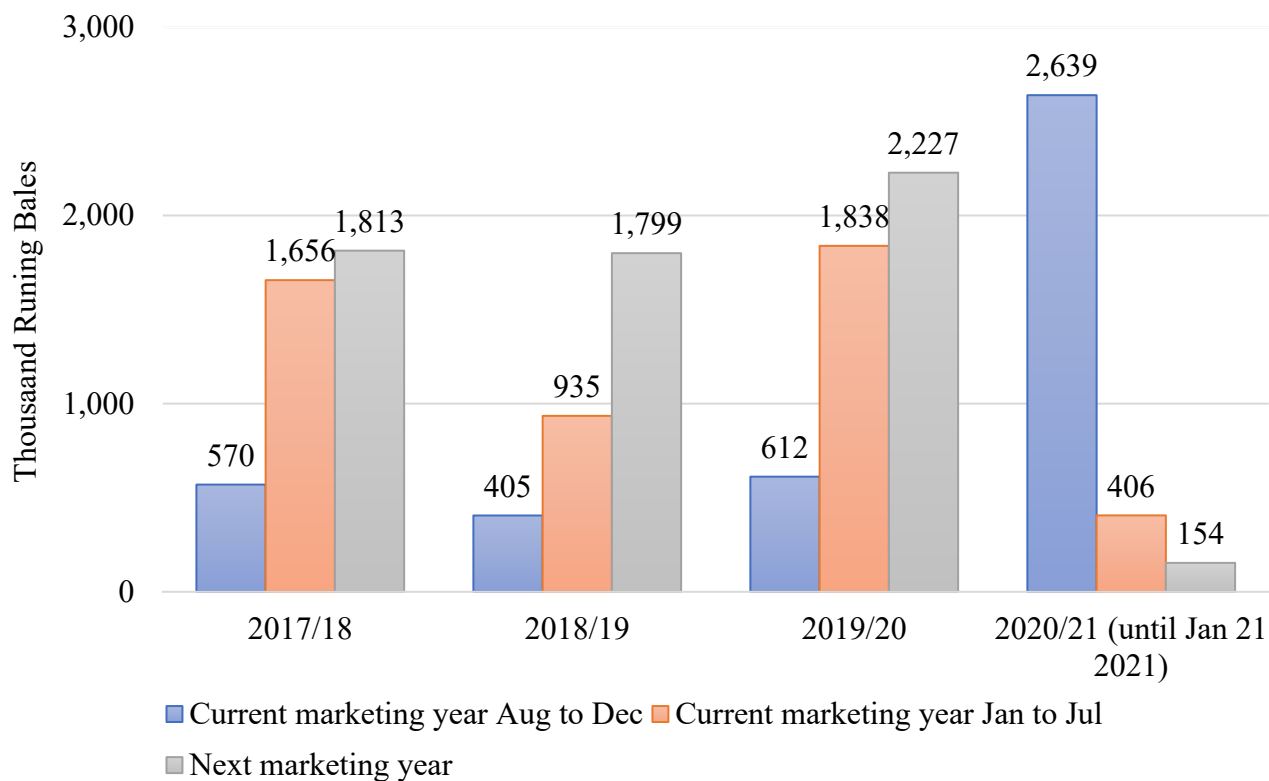


**Figure 2b. USDA weekly sales data for US soybean exports to China, 2017–2021.**

China imported 2.2 million running bales of cotton (\$1.03 billion) in the 2017/18 marketing year, with 75% imported from January to July, as shown in figure 2c. In the 2019/20 marketing year ending July 31, 2020, China imported 2.4 million running bales of US cotton, exceeding 2017 levels. In addition, China also ordered a record 4.33 million running bales of cotton for delivery for the 2020/21 marketing year and has imported 3.05 million running bales through

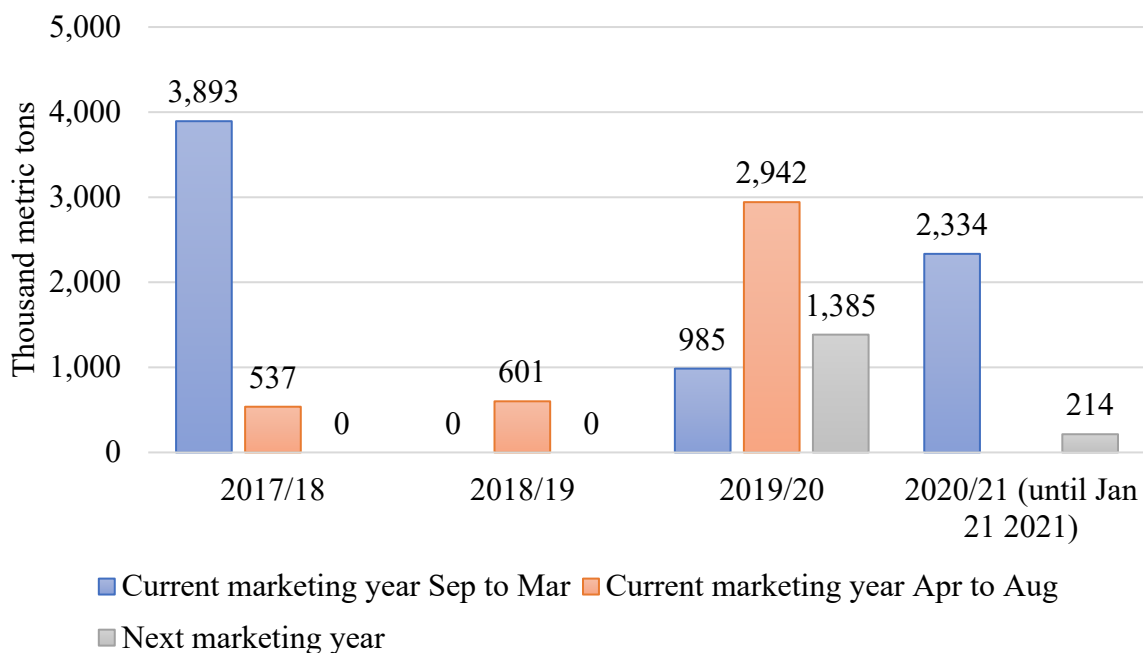


January 21, 2021, sending strong signals that China intends to buy large amounts of US cotton.



**Figure 2c. USDA weekly sales data for US cotton exports to China, 2017–2021.**

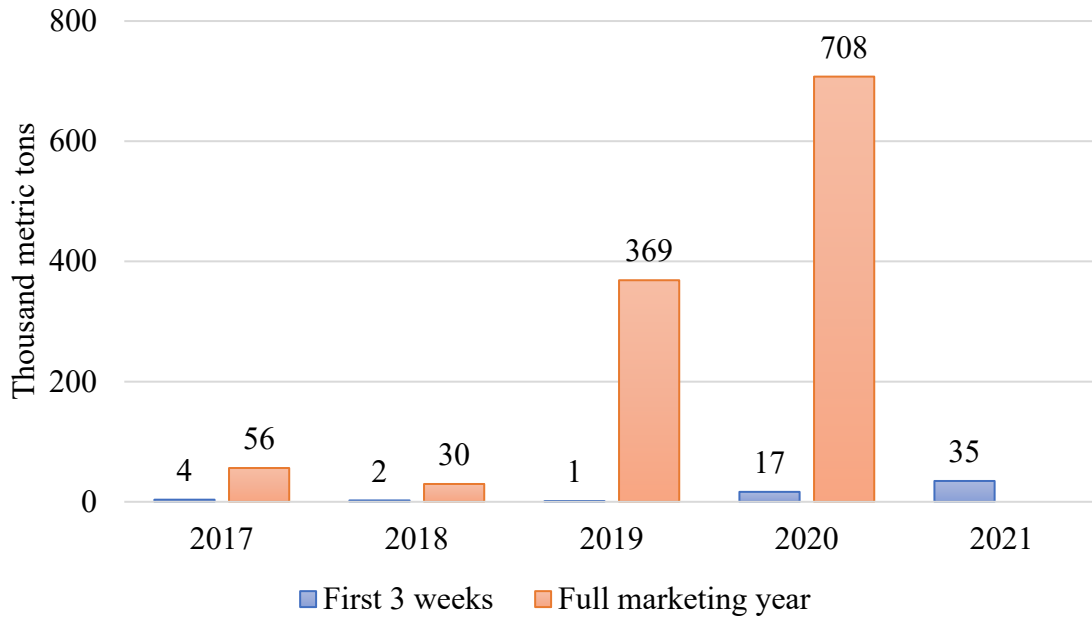
As for sorghum, in the 2019/20 marketing year, China imported 3.93 MMT (\$799 million) of US sorghum, slightly less than its imports of 4.43 MMT for the 2017/2018 marketing year, as shown in figure 2d. However, China has purchased 2.22 MMT of US sorghum for the 2020/21 market year as of January 21, 2021, and has ordered another 2.33 MMT of sorghum for delivery for the 2020/21 marketing year, indicating a strong demand for US sorghum.



**Figure 2d. USDA weekly sales data for US sorghum exports to China, 2017–2021.**

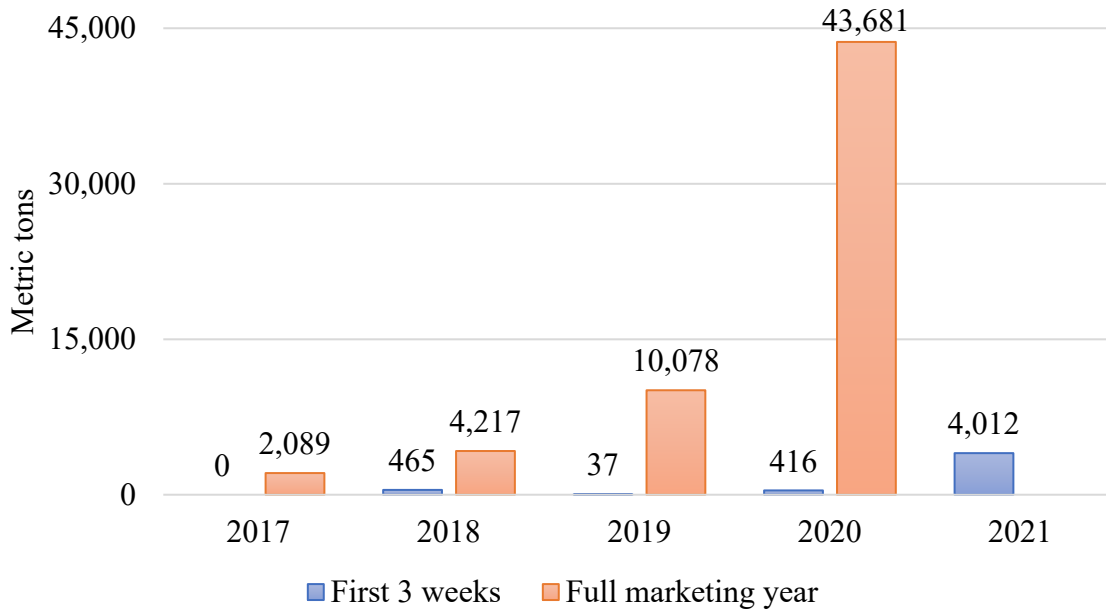
The marketing year for US beef and pork is the same as a calendar year, which differs from the crop calendar. Thus, we present US pork and beef exports as both the first three weeks and the full 2017–2020 marketing year and as sales until January 21 for the 2021 calendar year to illustrate US pork and beef exports to China this year.

Figure 2e shows that China imported a record 707,554 metric tons (\$2.29 billion) of US pork in the 2020 calendar year, which is much higher than the 105,000 metric tons (\$662 million) it imported in the full 2017 marketing year. China has also imported 34,652 metric tons of US pork in the first three weeks of 2021, partially due to the African swine fever (ASF) outbreak that began in August 2018 (Carrquiry et al. 2019; 2020). China’s pork imports will likely to reach a record high this year.



**Figure 2e. USDA weekly sales data for US pork exports to China, 2017–2021.**

Figure 2f shows that China imported a record 43,691 metric tons (\$259 million) of US beef, which is much higher than the 2,089 metric tons (\$30.3 million) imported in 2017. The upward trend we find in the first three weeks in 2021 seems likely to continue due to China’s strong demand for meat; and thus, the United States will export record amounts of beef to China this year in 2021 as well.



**Figure 2f. USDA weekly sales data for US beef exports to China, 2017–2021.**

### **China's Agricultural Imports from US and non-US Sources**

It is possible that China will meet its phase one commitments by lowering imports from non-US sources. Therefore, we examine patterns in China's US and non-US agricultural imports using monthly General Administration of Customs of China (GACC) data from January 2017 to December 2020 (GACC 2020).

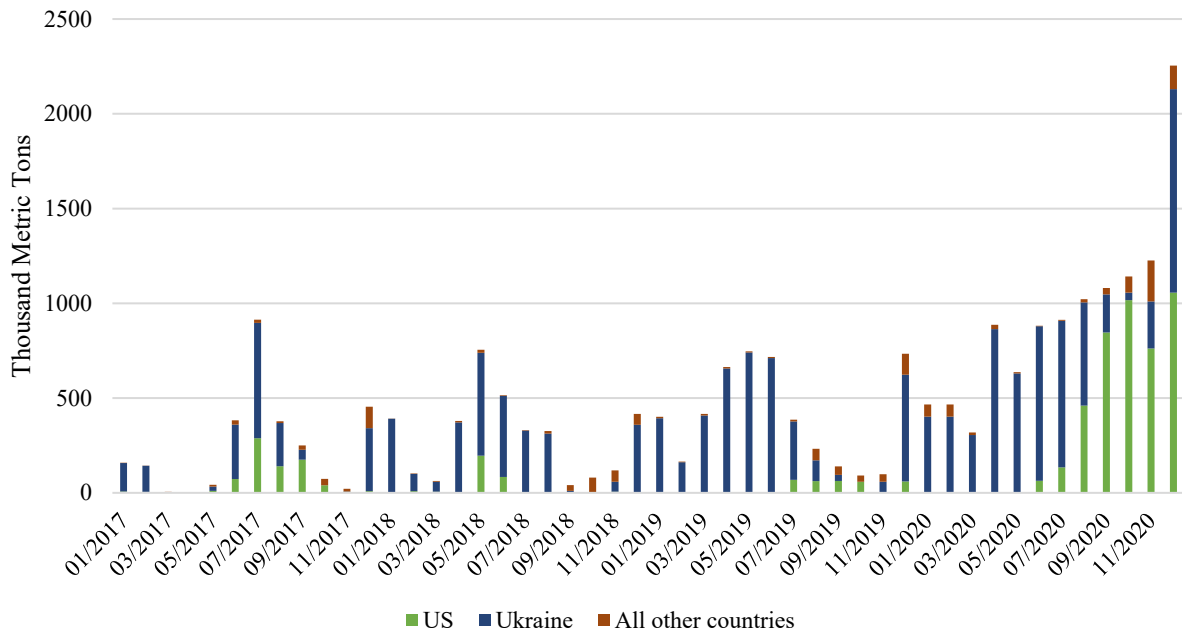
#### *China's Monthly US and non-US Imports*

Figures 3a–3h show the quantity of China's imports of corn, soybeans, cotton, sorghum, pork, beef, poultry, and ethanol from the United States, the major competing exporting countries for each commodity, and all other countries.

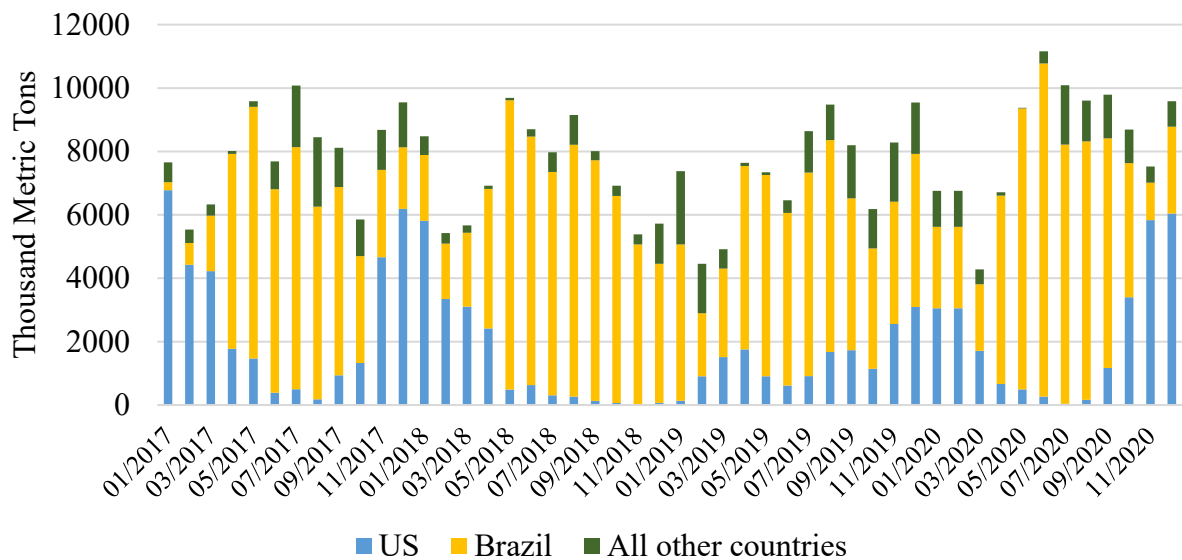
Figures 3a and 3b clearly show that China imports large quantities of corn from Ukraine and large amounts of soybeans from Brazil.<sup>4</sup> Since the beginning of the 2018 trade war, Brazil's share of China's soybean imports increased from 52.8% in 2017 to 75.7% in 2018, and then decreased to 64.8% in 2019. This is even more significant when considering that China only produces 15%–20% of its soybean needs domestically. In 2020, China imported 64% of its soybeans from Brazil. Brazil became a COVID-19 hotspot in May, yet its soybean exports to China remain strong. Many US market analysts worry about the prospect of the phase one deal as Brazil's monthly soybean exports reached record levels in June 2020. In addition, the depreciation of the Brazil real against the US dollar since June could continue to encourage Brazil agricultural exports and reduce the competitiveness of US agricultural products (Gu and Patton 2020). However, as the new marketing year started in September, China shifted mainly to US sources for soybeans, as evidenced by the large quantities of soybean bookings for delivery in 2020/21 marketing year shown in figure 2b.

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<sup>4</sup> China began importing corn from Ukraine after it rejected loads of US corn in November 2013. The rejections were related to the presence of Viptera and later Duracade in the US corn system. China has since approved the use of both Viptera and Duracade. Thus, the United States should recapture corn market share from Ukraine in the 2020/21 crop year.



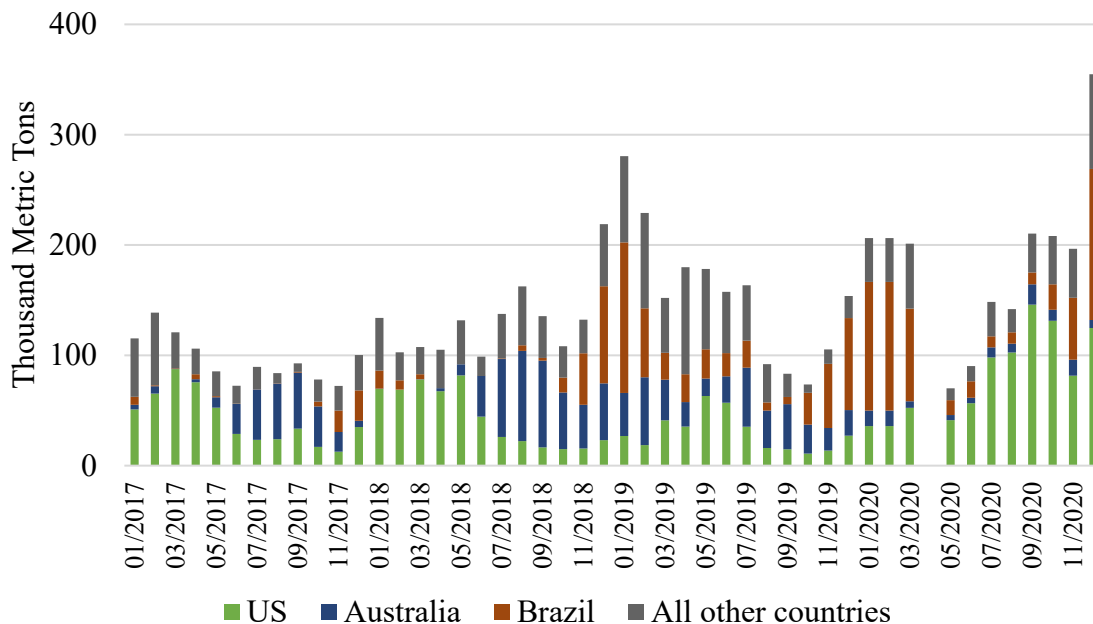
**Figure 3a. China’s corn imports from the United States, Ukraine, and all other countries, 2017–2020.**



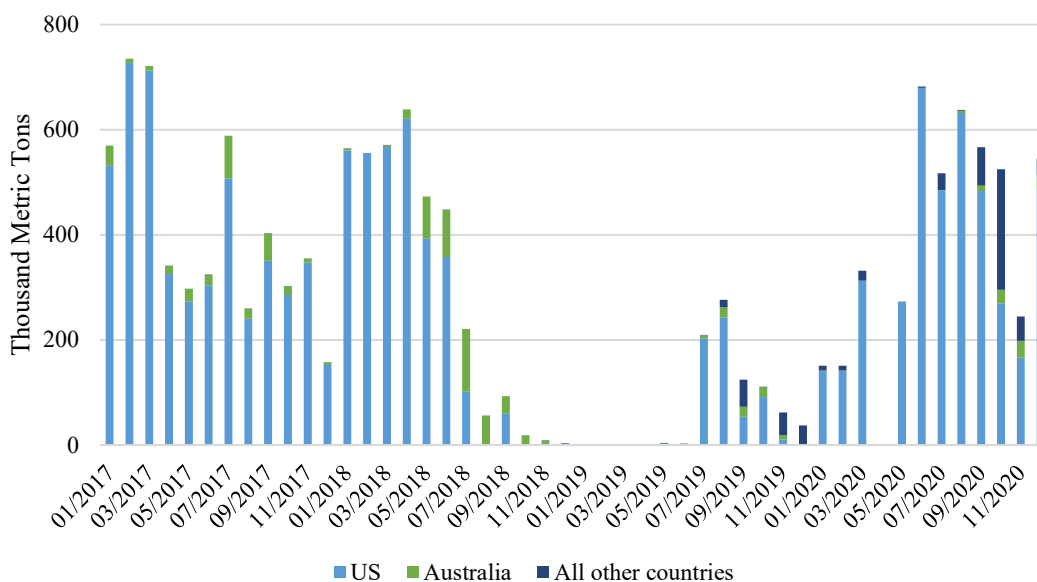
**Figure 3b. China’s soybean imports from the United States, Brazil, and all other countries, 2017–2020.**

Figures 3c and 3d show that, in 2020, China is importing US cotton and sorghum at a lower level than in the first quarter of 2017; however, the pace accelerated since the second quarter. In

addition, China has been purchasing a growing share of its cotton and sorghum from the United States. US cotton supplies are much cheaper than Australia's, a rival producer, which indicates that China is willing to purchase US agricultural products only when they are cheaper (Almeida and Hirtzer 2020).

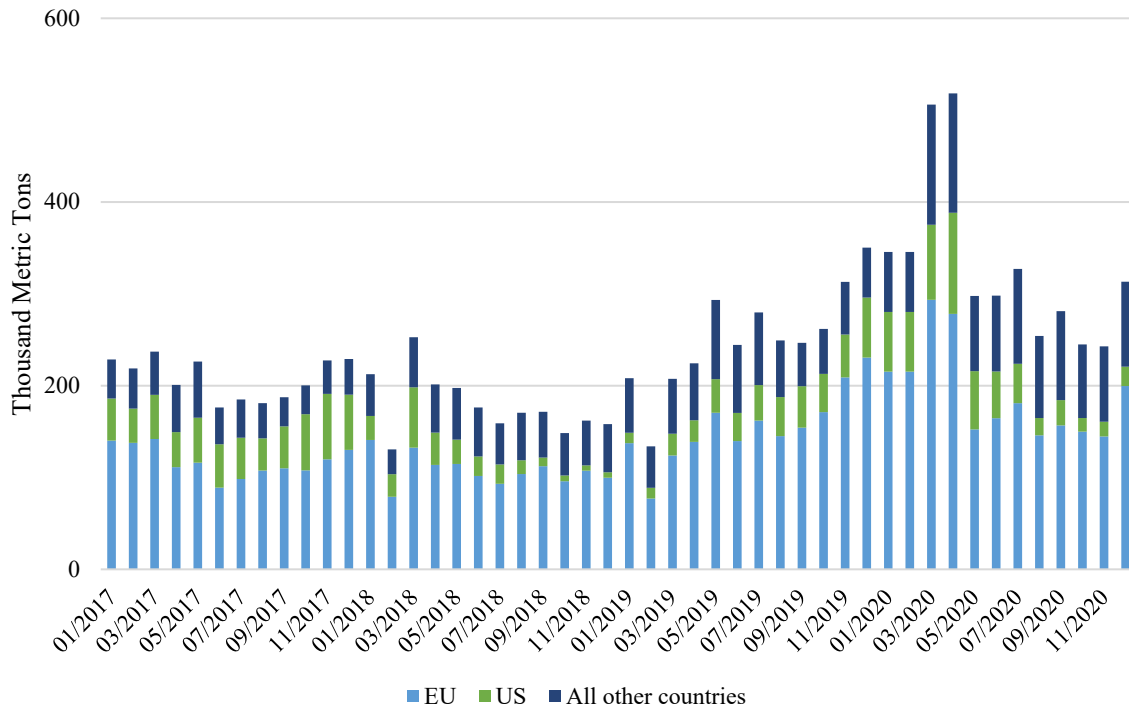


**Figure 3c. China's cotton imports from the United States, Australia, Brazil, and all other countries, 2017–2020.**

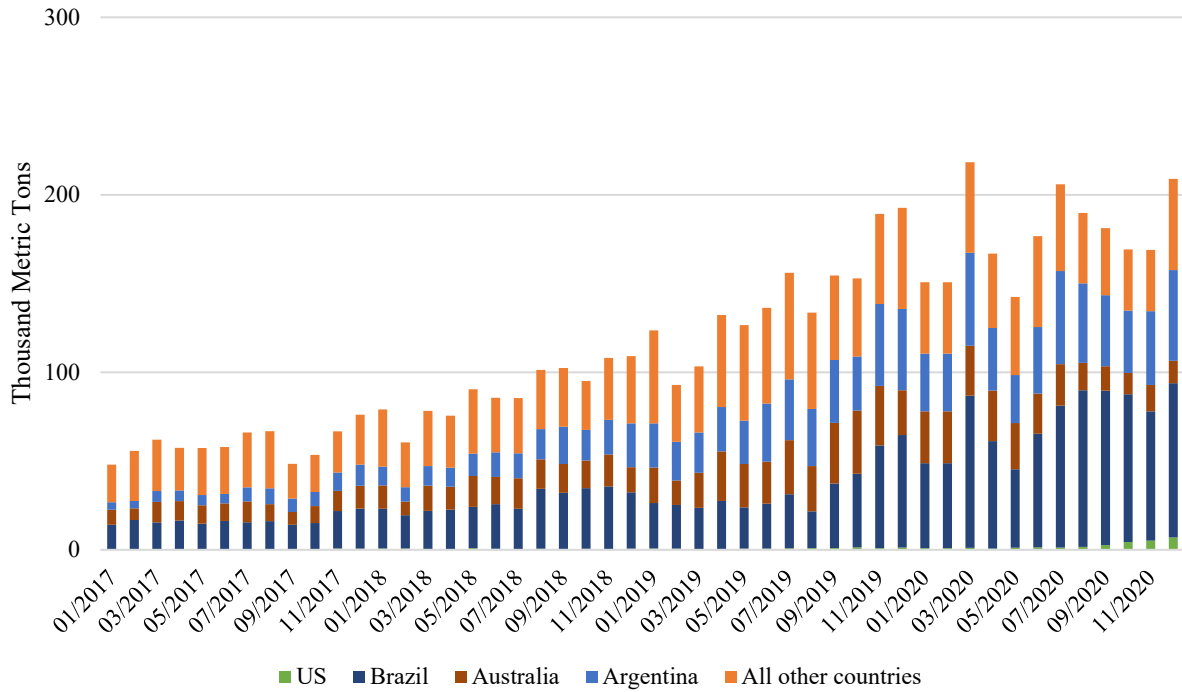


**Figure 3d. China's sorghum imports from the United States, Australia, and all other countries, 2017–2020.**

Figures 3e and 3f show China’s increasing import demand for pork and beef and the potential for the United States to export record volumes of meat products to China in 2021, partially due to the ASF outbreak (Xiong and Zhang 2020). However, in 2020, the EU accounted for 58% of China’s pork imports while Brazil, Australia, and Argentina accounted for 74% of China’s beef imports. The United States only accounted for 14.5% of China’s pork imports and a negligible amount of its beef imports.

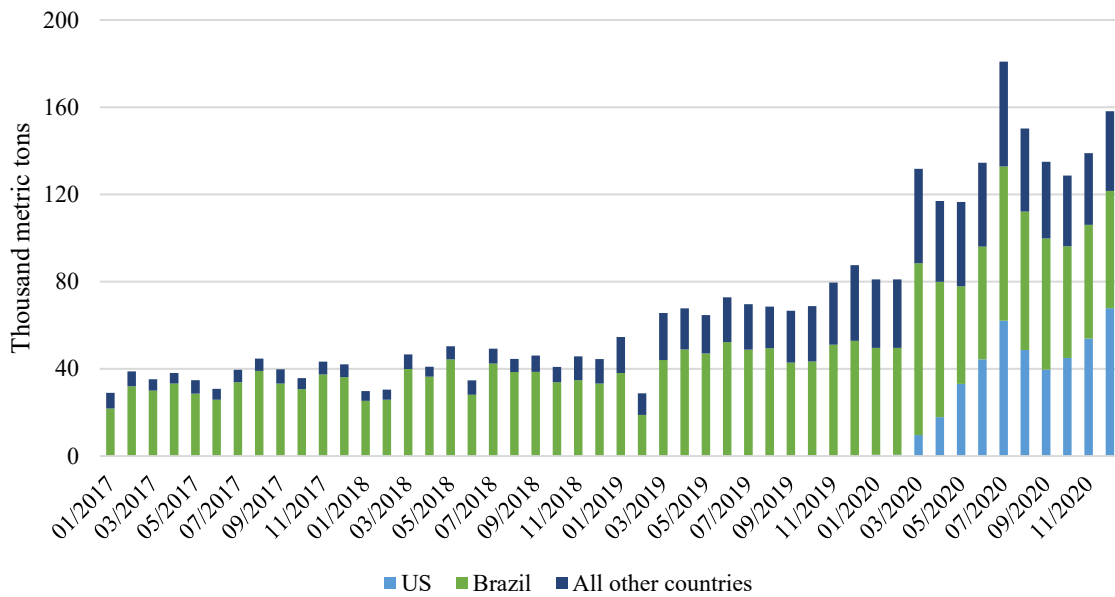


**Figure 3e. China’s pork imports from the United States, the EU, and all other countries, 2017–2020.**



**Figure 3f. China’s beef imports from the United States, Brazil, Australia, and all other countries, 2017–2020.**

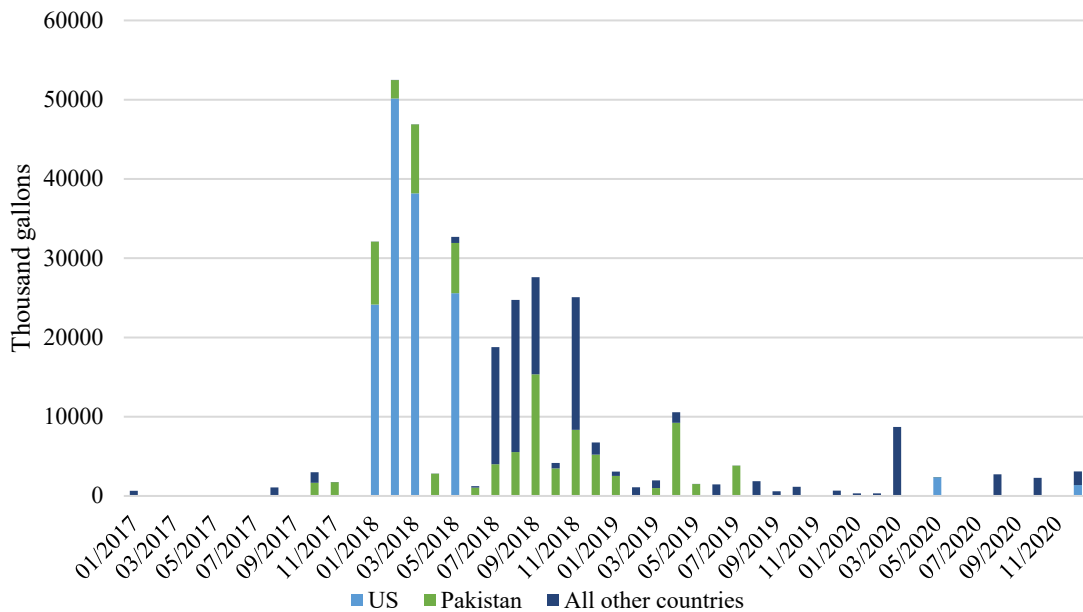
Figure 3g shows that China’s imports of US poultry have increased since the beginning of 2020. The United States exports of poultry products started to increase since March 2020, which reduced the share of poultry imported from Brazil.



**Figure 3g. China’s poultry imports from the United States, Brazil, and all other countries, 2017–2020.**



As for ethanol, China imported large quantities in 2018; however, it imported little ethanol in 2017 and 2019. China resumed ethanol imports in the first half of 2020; however, it shifted to imports from non-US countries, mainly Pakistan, in 2019. While China imposed a 5% tariff on denatured ethanol before 2017, it increased the tariff to 30% on all trading partners in January 2017. In addition, China increased the tariff on 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%.<sup>5</sup> China resumed its US ethanol imports in May 2020; however, its US ethanol imports still remained quite limited in 2020 (see figure 3h).



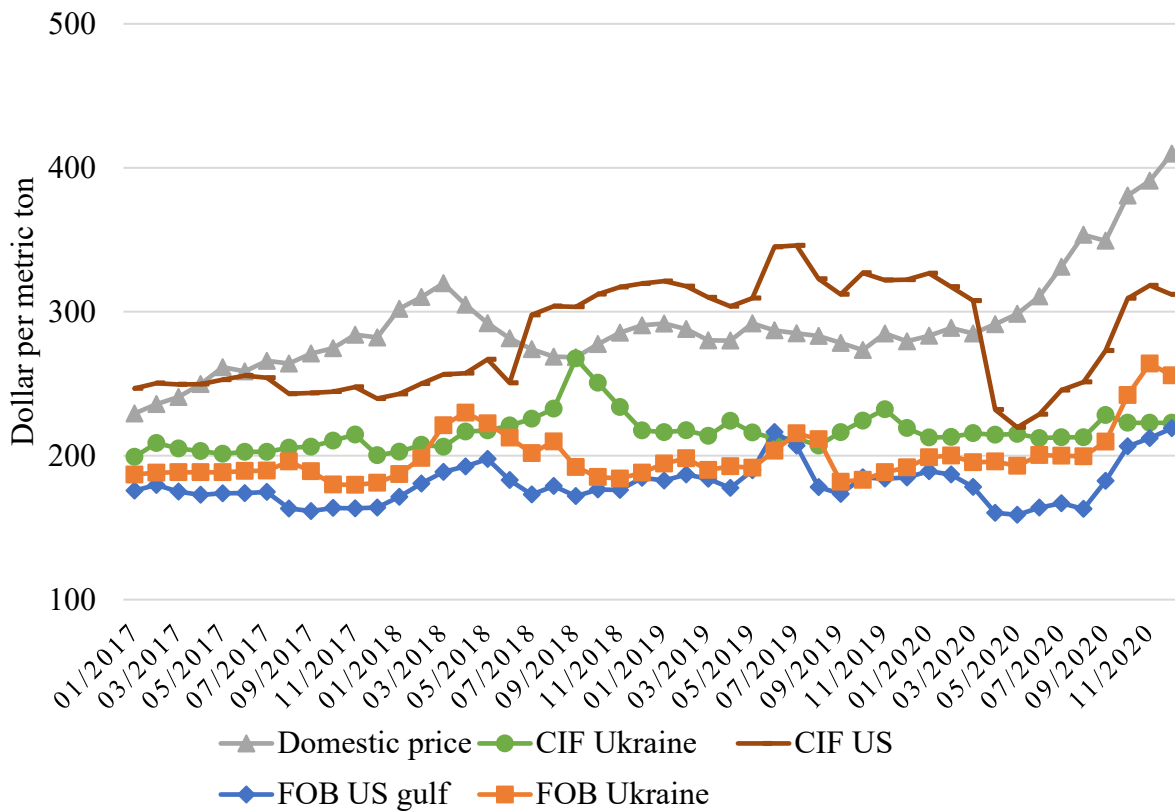
**Figure 3h. China’s ethanol imports from the United States, Pakistan, and all other countries, 2017–2020.**

*US Agricultural Competitiveness with Other Major Exporting Countries*

To illustrate the competitiveness of US agricultural products with those of other major competing countries, we compare the domestic, FOB, and CIF prices for corn, soybeans, pork, beef, and ethanol from the United States and other major exporting countries. Appendix A presents data sources for prices.

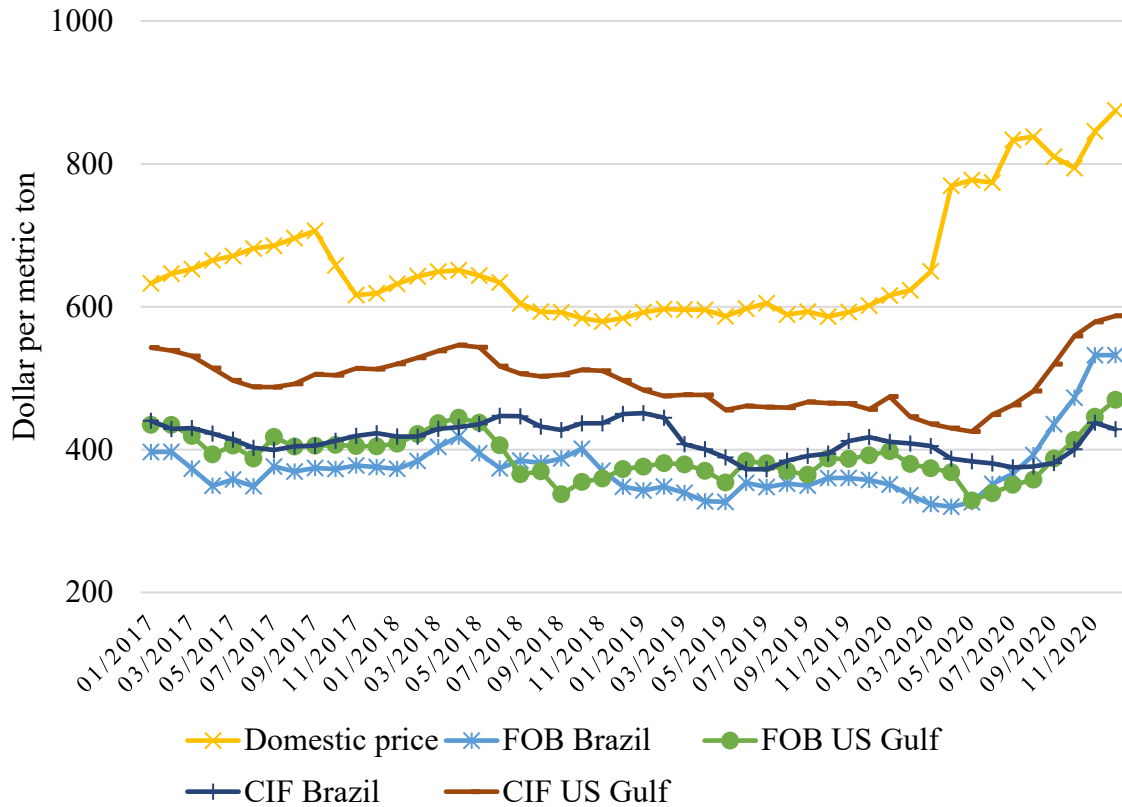
Figure 4a shows that while the FOB price of US corn is comparable to the FOB price of Ukraine corn, the CIF price of US corn is much higher than that of Ukraine corn due to higher transportation costs and the retaliatory tariffs China has imposed on US corn since June 2018. As China exempted the retaliatory tariffs on US corn on March 2, 2020, the CIF price decreased significantly and China has since began importing large quantities of US corn.

<sup>5</sup> See <https://ethanolrfa.org/wp-content/uploads/2020/03/US-Ethanol-Exports-to-China-vs-Tariff.pdf> for details.



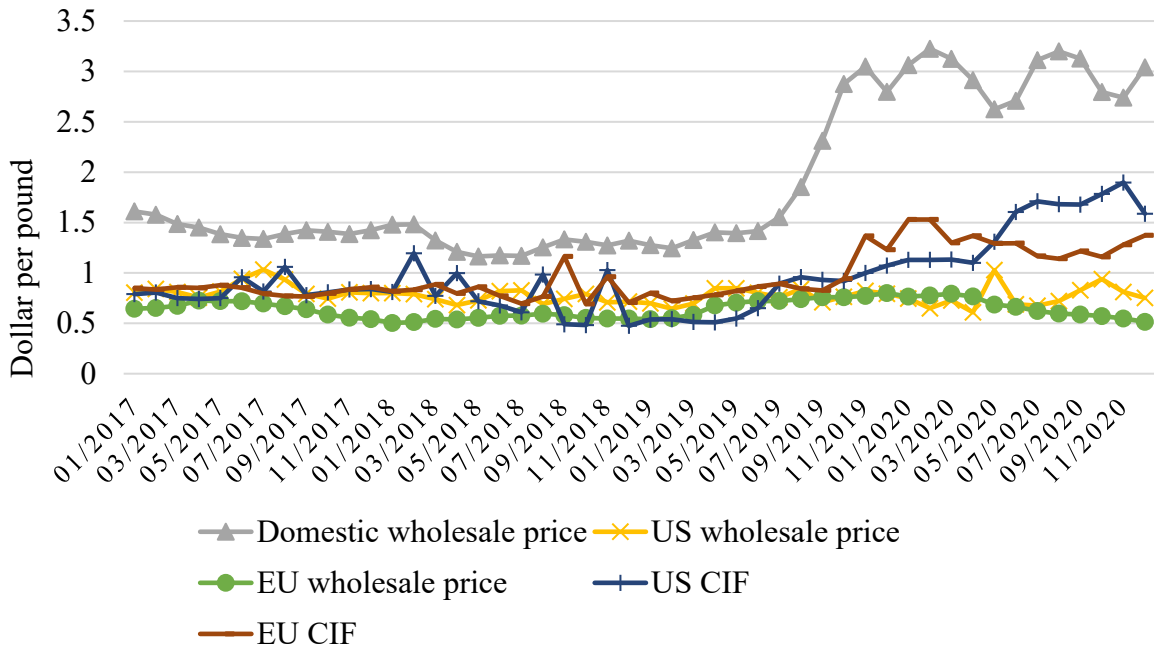
**Figure 4a. Monthly domestic, FOB, and CIF prices of China’s US and Ukraine corn imports, 2017–2020.**

Much like corn, the FOB price of US soybeans is comparable to the FOB price of Brazil soybeans. However, the CIF price of US soybeans is always higher than that of Brazil soybeans, as shown in figure 4b. As China has removed the retaliatory tariffs on soybeans, the CIF price gap between US and Brazil soybeans has decreased. However, due to the depreciation of the Brazil real, Brazil’s soybean exports compose a large share of China’s import portfolio over time, as shown in figure 4b.



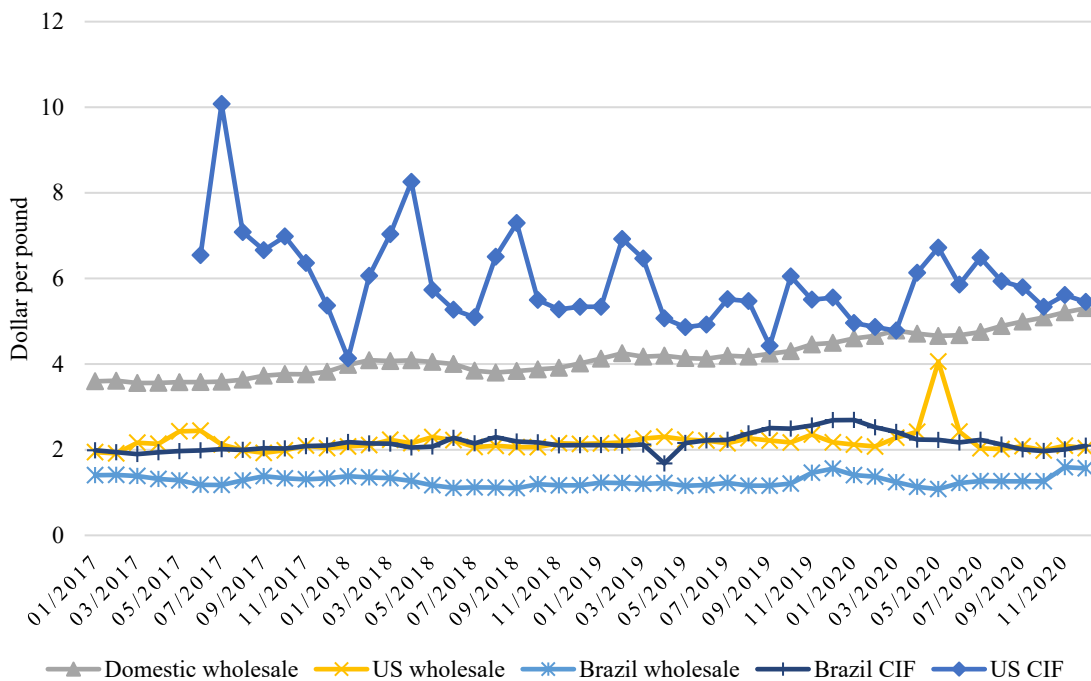
**Figure 4b. Monthly domestic, FOB, and CIF prices of China’s US and Brazil soybean imports, 2017-2020.**

Figure 4c shows that the FOB price of US pork is comparable to that of EU pork and the CIF price of US pork is lower than that of EU pork since the beginning of 2020, which indicates that US pork is gaining competitiveness over EU pork in China. As the pork price in China is surging due to the ASF outbreak, US exports of pork and other meat products to China are expected to grow.



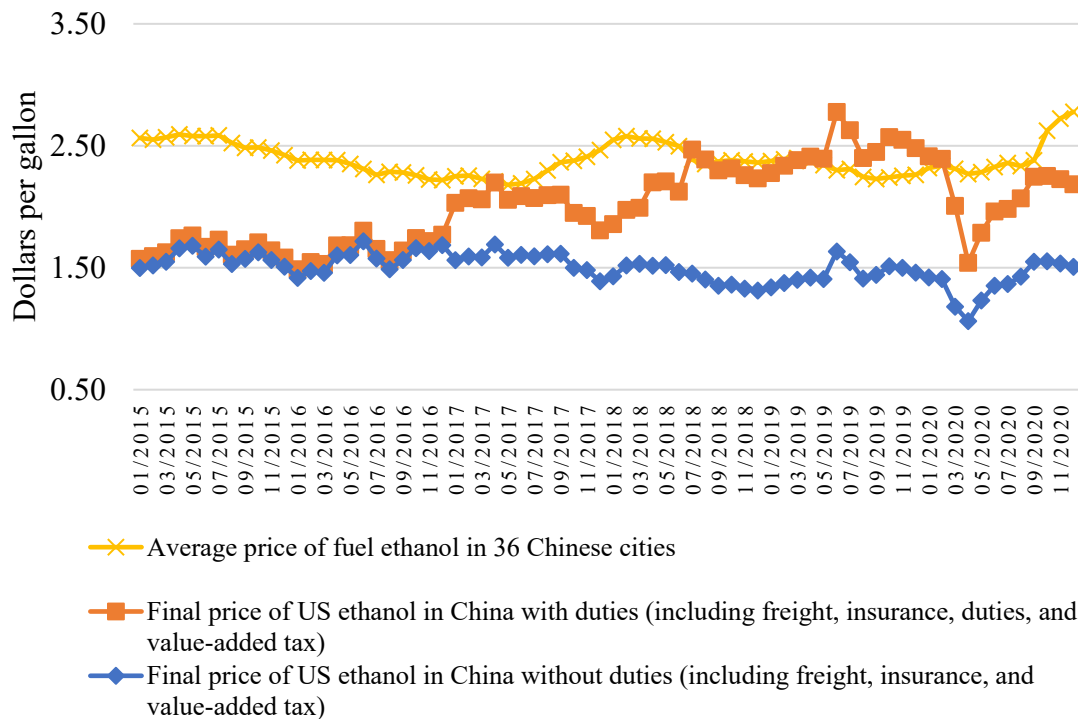
**Figure 4c. Monthly domestic, FOB, and CIF prices of China’s US and EU pork imports, 2017–2020.**

Figure 4d shows that the FOB price of US beef is much higher than that of Brazil beef, in part because US beef is grain fed.



**Figure 4d. Monthly domestic, FOB, and CIF prices of China’s US and EU beef imports, 2017–2020.**

The CIF price of US ethanol has been lower than domestic ethanol fuel prices since March 2020, partially due to the reduced tariffs China imposed on US ethanol (see figure 4e).<sup>6</sup> Although China resumed its US ethanol purchases in May and June 2020, the quantities are much smaller than pre-trade war levels. Due to the suspension of China’s national ethanol mandate and the uncertainties of China’s ethanol fuel policies, it’s difficult to predict China’s ethanol import demand at this time.



**Figure 4e. Monthly domestic and CIF prices, with and without duties, of China’s US ethanol imports, 2017–2020.**

*Comparison of China’s Imports in 2017 and 2020*

Comparing the United States’ share of China’s imports in 2017 and 2020 provides a sense of the phase one trade deal progress. Table 1 shows the summary of China’s key commodities imports from US and non-US countries in 2017 and 2020. In 2017, China imported 26.8% of its corn from the United States, which increased to 38.44% in 2020, along with China’s total corn imports reaching a record 11.3 MMT. China imported 34.4% and 25.8% of its soybeans from the United States in 2017 and 2020, respectively. Given that soybeans accounted for around 50% of US agricultural and related product exports to China in 2017, China needs to accelerate its US soybean purchase to fulfill its phase one trade deal obligations. Four US commodities—cotton,

<sup>6</sup> Given that China didn’t import large quantities of US ethanol from 2017 to 2020, we cannot measure the CIF price using unit import price. We calculate the CIF price of ethanol shipped to China using data on freight, tariff, insurance, and value-added tax.

poultry, beef, and ethanol—show higher import share in 2020 than in 2017. In particular, China imported 423,000 metric tons of poultry products and 11,000 metric tons of US ethanol in 2020, while it imported negligible amounts of US poultry and ethanol in 2017.

**Table 1. China’s Imports of Key Commodities 2017 and 2020**

	2017 Jan–Dec			2020 Jan–Dec		
	US	Non-US countries	US share	US	Non-US countries	US share
<b>China’s total import quantity (Thousand Metric Tons)</b>						
Corn	757	2069	26.78%	4342	6952	38.44%
Soybeans	32853	62681	34.39%	25889	74437	25.81%
Cotton	506	650	43.79%	906	1128	44.54%
Sorghum	4758	299	94.09%	4069	556	87.98%
Peanuts	108	251	30.17%	332	874	27.53%
Pork	584	1914	23.37%	1336	23174	5.45%
Beef	2	714	0.31%	28	2102	1.33%
Poultry	0	452	0.00%	423	1131	27.24%
Dairy	542	2327	18.88%	247	2712	8.34%
Ethanol (Million liters)	0	27	1.49%	36	51	41.18%
<b>China’s total import value (\$Million)</b>						
Corn	160	442	26.55%	959	1532	38.50%
Soybeans	13940	25698	35.17%	10634	28904	26.90%
Cotton	983	1207	44.88%	1466	1869	43.96%
Sorghum	957	69	93.26%	978	135	87.90%
Peanuts	62	268	18.74%	203	941	17.77%
Pork	1162	3217	26.53%	1695	17198	8.97%
Beef	25	3116	0.80%	228	10000	2.23%
Poultry	0	1032	0.00%	750	2748	21.44%
Dairy	1087	8203	11.71%	479	9659	4.73%
Ethanol	1	29	3.09%	15	21	41.18%
Total agricultural and related products	24,000	101,860	19.07%	27,300	143,501	15.98%

Source: General Administration of Customs of China data (GACC 2020).

#### *China’s Targeted 2020 and 2021 Trade Deal Imports*

Tables 2 presents China’s actual US imports in 2017, the targeted imports in the first year under the terms of the phase one trade deal, the actual imports and the percentage purchased during the 2020 calendar year and from February 15 to December 31, 2020, and the imports needed to meet the target from January 1, 2021, to February 14, 2021. Table A1 in the appendix shows a similar table in terms of quantity.

We calculate 2020 and 2021 targets by assuming that China’s US import mix remains the same as in 2017 and scaling up the trade value and quantity to trade deal targets. Considering that

ASF severely affects China's meat demand, we multiply China's meat imports from February 15 to December 30, 2020, by 1.14 (12/10.5) to set a trade target for 2020. We also use half of the imports in February as imports in the second half of February. Table 2 shows that China's purchases of corn, pork, beef, poultry, sorghum, and cotton are making good progress, but purchases of soybeans are falling behind.

**Table 2. China's Actual Imports from February 15 to December 31, 2020, and Targeted Trade Deal Imports of Key Commodities (\$Million)**

Commodities	2017	First-year target	2020 Jan–Dec	Percentage purchased (2020 Jan–Dec)	2020 (Feb 15–Dec 31)	Percentage purchased (Feb 15, 2020–Dec 31, 2020)	Exports needed (Jan 1, 2021–Feb 15, 2021)
<b>Total agricultural and related products</b>	24,002	36,503	27,300	74.8%	25,356	69.5%	11,147
<b>Key crop and crop-based products</b>							
Soybeans	12,224	18,591	12,105	65.1%	11,239	60.5%	7,352
Cotton	978	1,487	1,709	114.9%	1,577	106.0%	0
Sorghum	838	1,274	1,038	81.4%	1,000	78.5%	274
Corn	152	994	995	100.0%	994	100.0%	0
<b>Key meat products</b>							
Pork & pork products	489	2,212	2,285	103.3%	1,935	87.5%	276
Beef & beef products	31	287	259	90.4%	251	87.5%	36
Poultry Meat & Prods. (ex. eggs)	36	836	754	90.2%	732	87.5%	105
<b>Other products</b>							
Dairy products	569	865	536	62.0%	487	56.3%	378
Ethanol (non-bev.)	83	126	15	11.9%	15	11.8%	111
Other products	7,022	9,830	7,603	77.3%	7,125	72.5%	2,705

Source: Global Agricultural Trade System data (USDA 2020a).

Notes: Please note that China's actual imports from January to December 2020 in this table are different from those in table 1 because this table uses US export data from USDA GATS (USDA 2020a), while table 1 uses China's import data from GACC (GACC 2020).

#### *China's Predicted 2020 Agricultural Imports*

Considering that the 2018 trade war is seriously affecting US-China trade, we conduct our prediction without using 2018–2019 data. We use linear extrapolation, which accounts for seasonality and trend, and we use monthly GACC data (GACC 2020) in 2017 and from January to December 2020 to predict China's monthly US agricultural purchases from January to February 2021. For corn and soybeans, we use weekly sales data until January 21, 2021, and we assume that the advanced sales from daily export sales notices until January 29, 2021, will be delivered in the first year of the trade deal. For ethanol, we assume China's purchase of 200

million gallons of US ethanol will also be delivered within the first year of the trade deal (Plume and Gu 2021).

The prediction process is as follows: (a) we obtain the monthly *seasonal index* by averaging the imports each month and dividing the monthly average by the overall average; (b) we divide the actual data by the seasonal factors to get deseasonalized data and use that data to make a linear prediction to extrapolate deseasonalized imports from January to February 2021; and, (c) we then multiply the predicted imports January to February 2021 by the seasonal index to get seasonalized imports.

Table 3 presents the predicted trade value and quantities. China’s predicted total imports of US agricultural and related products are around \$35.82 billion in the first year of the trade deal. However, given that China has ordered large amounts of corn and soybean for delivery for the 2020/21 marketing year, whether China would increase its purchase also depends on logistics and whether these pre-ordered quantities can be shipped to China on time.

**Table 3. China’s Predicted Agricultural Imports of Key Commodities from February 15, 2020, to February 14, 2021**

	Imports from US		Imports from all sources	
	Value (\$Million)	Quantity (Thousand metric tons)	Value (\$Million)	Quantity (Thousand metric tons)
Corn	3,907	17,690	5,475	24,647
Soybeans	14,520	35,130	40,006	101,884
Cotton	1,501	922	3,172	1,935
Sorghum	1,121	4,828	1,261	5,410
Pork	2,005	1,488	20,567	25,319
Beef	230	28	10,439	2,168
Ethanol	33	78*	54	129*
Poultry	751	423	3,593	1,589
Total ag	35,822		182,130	

*Note:* Author’s estimation based on 2017 seasonal patterns and China’s most recent agricultural purchases from the United States, which includes advanced corn and soybeans sales until January 29, 2021. We assume the advanced corn and soybean sales until January 29, 2021, will be delivered in the first year of the trade deal, and we assume China’s purchase of 200 million gallons of ethanol will be delivered in the first year of the trade deal (Plume and Gu 2021).

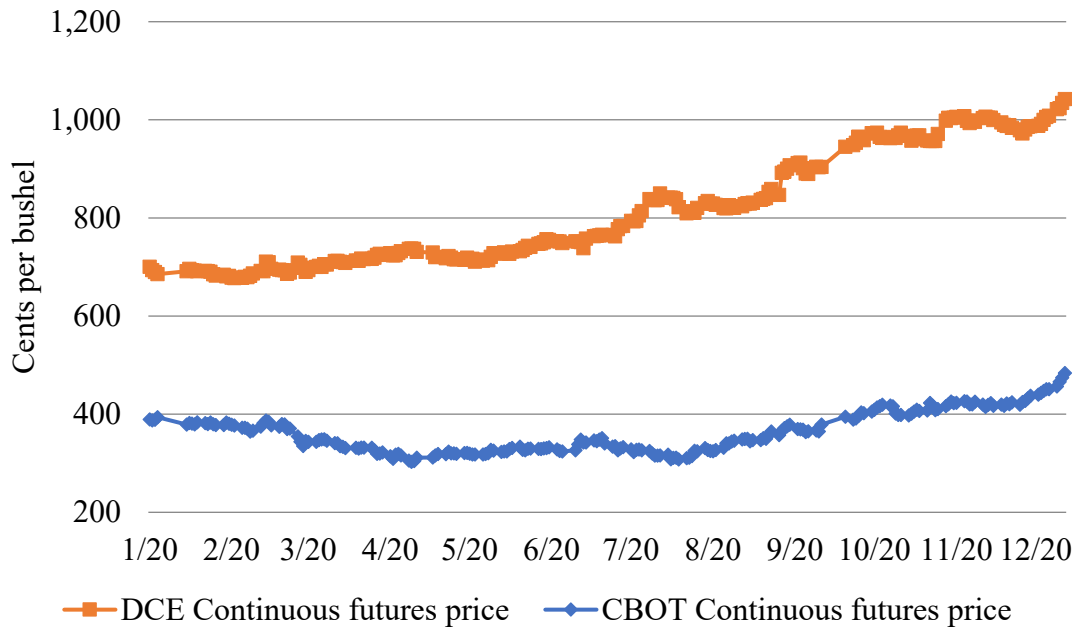
\*The unit for ethanol quantity is million liters.

### **US-China Price Differentials**

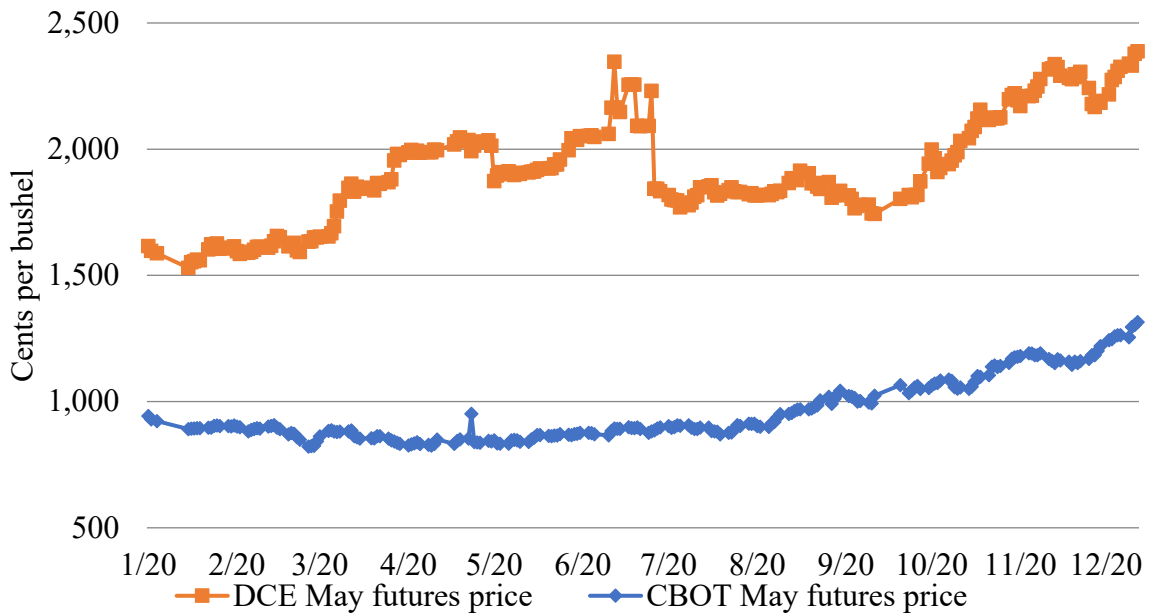
Examining US-China price differentials of agricultural products is useful to assess market drivers that might influence trade. Figures 5a–5c present the daily prices of corn, soybeans, and cotton in China and the United States from January 20 to December 31, 2020, based on data from the Ministry of Agriculture and Rural Affairs of China (MARAC) (MARAC 2020). China’s prices of corn and soybeans are always higher than US prices, and the price gaps are widening,



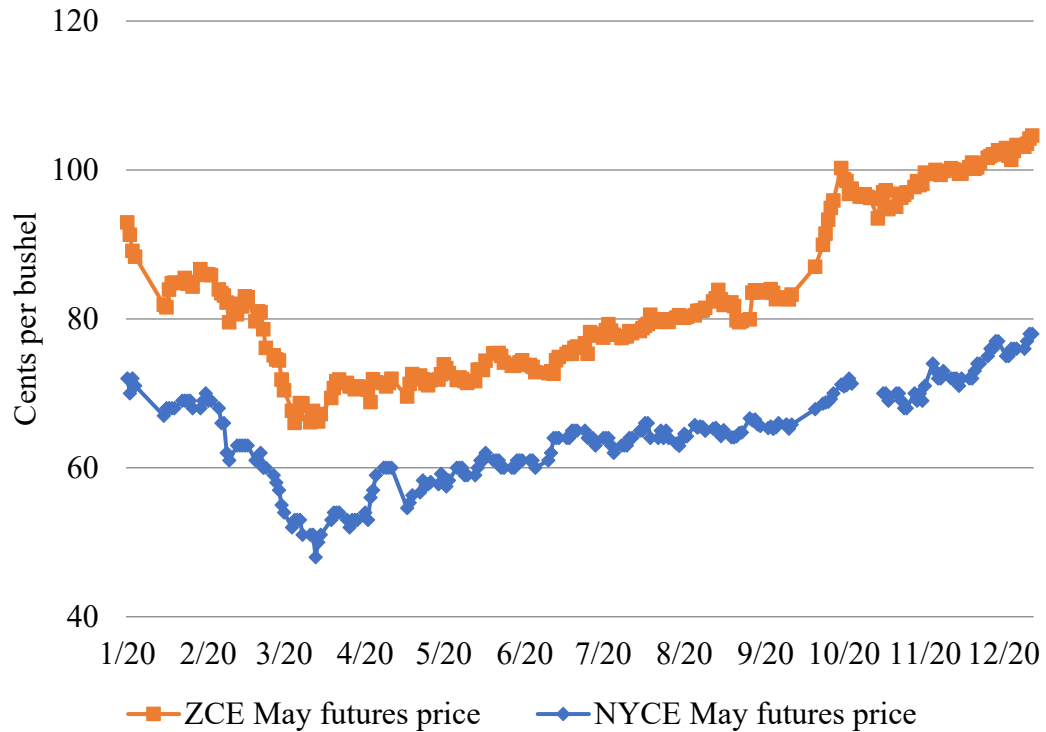
indicating strong motivation for China to import corn and soybeans from the United States later this year.



**Figure 5a. Daily US and China corn prices, January 20–December 31, 2020.**

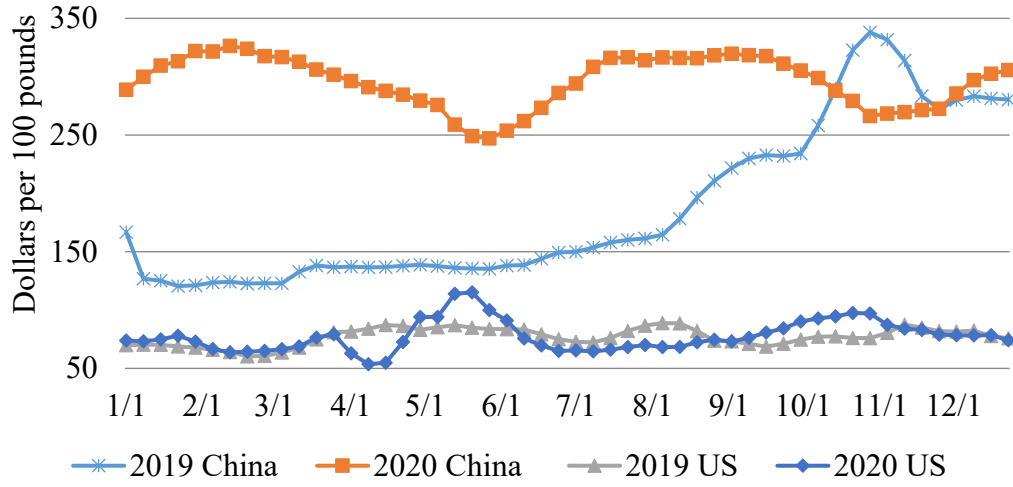


**Figure 5b. Daily US and China soybean prices, January 20–December 31, 2020.**

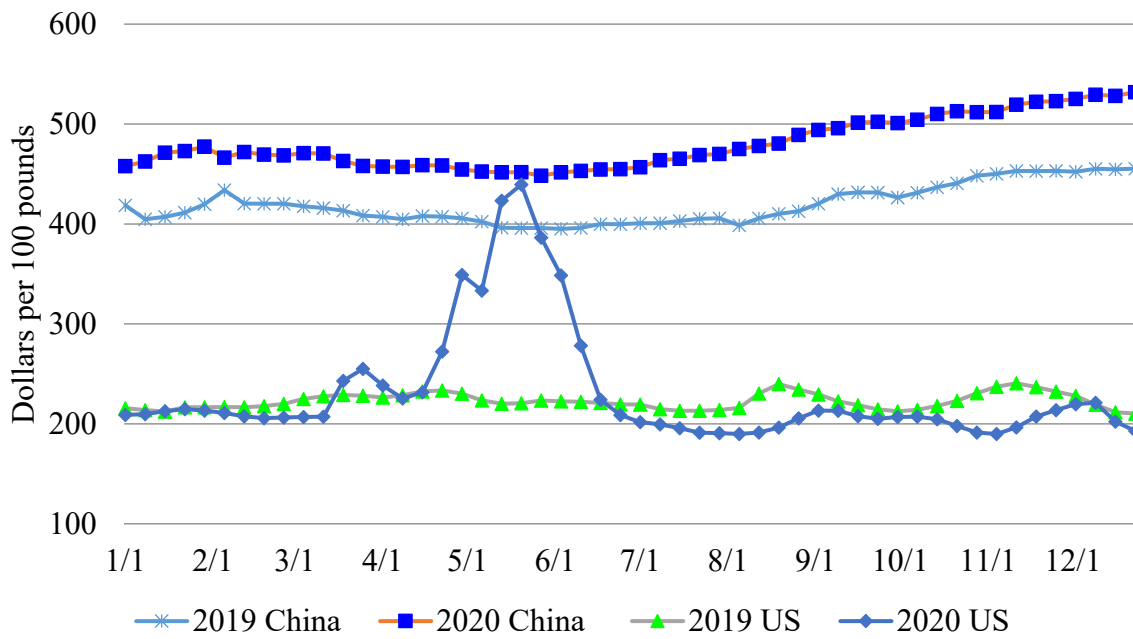


**Figure 5c. Daily US and China cotton prices, January 2020–December 31, 2020.**

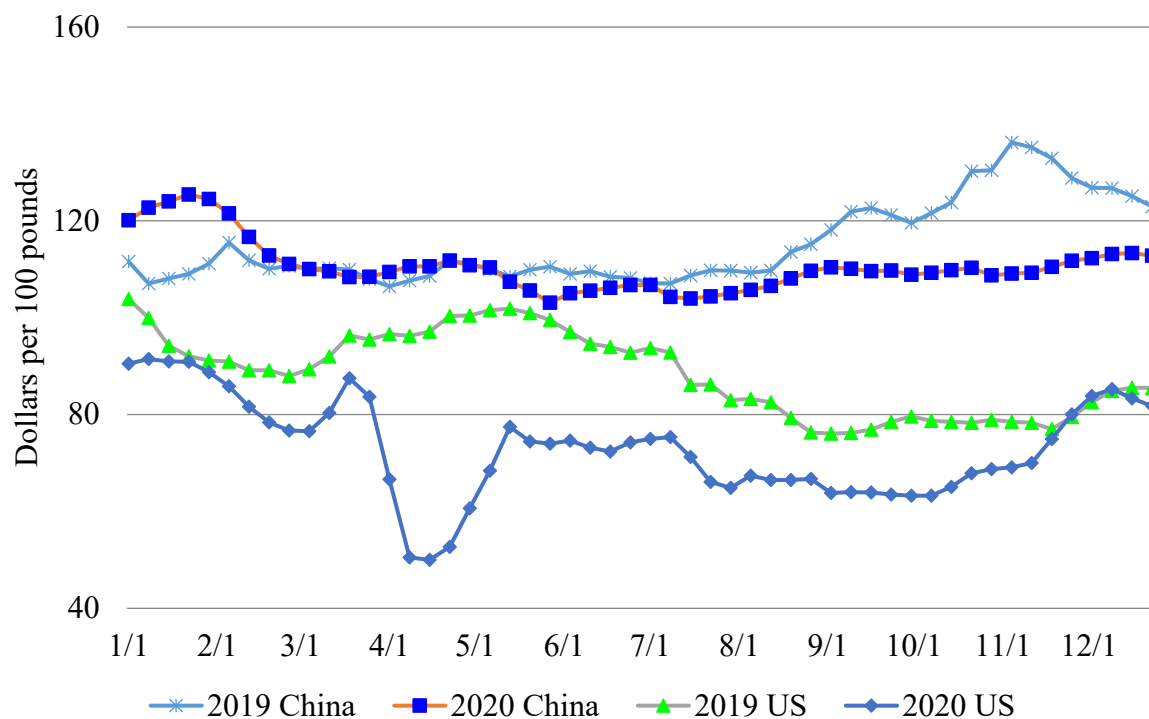
For meat products, we use MARAC’s data for China’s weekly pork, beef, and chicken wholesale prices from January 1, 2019, to October 23, 2020 (MARAC 2020), and USDA Agricultural Marketing Services (USDA 2020d) data for US prices. Figures 6a–c show weekly US and China pork, beef, and poultry prices. In 2020, pork and beef prices in China are much higher than in 2019. China is very likely to import large quantities of pork, beef, and poultry this year due to strong meat demand and the ongoing ASF outbreak. The price spikes in US pork and beef prices in April–June are due to meat processing plant shutdowns from the COVID-19 pandemic.



**Figure 6a. Weekly US and China pork prices, 2019–2020.**



**Figure 6b. Weekly US and China beef prices, 2019–2020.**



**Figure 6c. Weekly US and China poultry prices, 2019–2020.**

Overall, the large price differentials between key commodities in China and the United States show that market signals support an acceleration of China’s purchases of US agricultural commodities.

**Conclusion**

While China has purchased \$27.3 billion of US agricultural exports, 25.2% short of its first-year target, we find strong evidence that China is making efforts to fulfill its phase one obligations. For example, since June, China has begun importing large amounts of US corn, cotton, sorghum, soybeans, pork, and beef and resumed its purchase of US poultry and ethanol. In addition, China significantly increased its US corn and soybean purchases in the first few weeks in 2021. China is importing a large portion of its agricultural products from non-US sources, which provides an opportunity to divert trade if needed.

We find several positive signs for US agriculture. First, China is importing record levels of US corn for both the 2019/20 and 2020/21 marketing years, and it’s highly likely that China will also exceed its tariff rate quota of 7.2 MMT in 2021. In addition, the US-China price differential for key commodities, including corn, soybeans, pork, and beef, recently increased, which indicates an opportunity for China to import more agricultural products than in 2017. Furthermore, China has imported more corn, pork, beef, and ethanol from the United States than it did in 2017. China is also making regulatory changes as per the phase one agreement, including expanding its internal list of US beef and pork products eligible to enter its ports,

removing references to age restrictions on beef and beef products, and updating its lists of US facilities eligible to export distillers dried grains with solubles (USTR 2020a).

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## Appendix

**Appendix A.** Data Sources of domestic, FOB, and CIF prices from the United States and other major exporting countries for corn, soybeans, pork, and beef.

**Corn:** We use the Ministry of Agricultural and Rural Affairs of China's monthly report on agricultural product supply and demand for No. 2 yellow corn domestic price at Huangpu port in Guangzhou and for CIF price, which includes tariffs, insurance, and freights, we use No. 2 yellow corn shipped from the US Gulf to Huangpu port. We calculate CIF price for Ukraine corn as the unit import price using China's monthly agricultural imports data from GACC. FOB prices come from FAO's food price and monitoring analysis tool (FAO 2020).

**Soybeans:** We use the Ministry of Agricultural and Rural Affairs of China's monthly report on agricultural product supply and demand for domestic price for soybeans produced at Shandong and the CIF price for soybeans shipped from the US Gulf to Qingdao. We calculate the CIF price for Brazil soybeans as the unit import price using China's monthly agricultural import data from GACC. FOB prices for US soybeans come from FAO's food price and monitoring analysis tool (FAO 2020). We collect FOB prices for Brazil soybeans from the Center for Advanced Studies on Applied Economics at the University of Sao Paulo (CEPEA 2020).

**Pork:** We use the Ministry of Agricultural and Rural Affairs of China's monthly report on agricultural product supply and demand for data on domestic pork prices. We calculate CIF prices as the unit import price using China's monthly agricultural import data. US wholesale prices come from USDA Agricultural Marketing Services, and EU wholesale prices come from the Pigmear Statistics at the European Commission.

**Beef:** We use the Ministry of Agricultural and Rural Affairs of China's monthly report on agricultural product supply and demand for data domestic beef prices. We calculate CIF prices as the unit import price using China's monthly agricultural import data. US wholesale prices come from USDA Agricultural Marketing Services, and Brazil wholesale prices come from the Center for Advanced Studies on Applied Economics at the University of Sao Paulo (CEPEA 2020).



**Table A1. China’s Actual Imports of Key Commodities from February 15 to Dec 31, 2020, and Targeted Trade Deal Imports (Thousand Metric Tons)**

Commodities	2017	First-year target	2020 Jan–Dec	Percentage purchased (2020 calendar year)	2020 Feb 15–Dec 31	Percentage purchased (Feb 15, 2020–Dec 31, 2020)	Exports needed (Jan 1, 2021–Feb 15, 2021)
<b>Key crops</b>							
Soybeans	31,689	48,194	30,272	62.8%	27,895	57.9%	20,299
Cotton	533	811	1,123	138.4%	774	95.5%	37
Grain sorghum	4,604	7,001	5,167	73.8%	4,949	70.7%	2,052
Corn	826	5,895	5,895	100.0%	5,894	100.0%	0
<b>Key meat products</b>							
Pork & pork products	275	986	1,001	101.5%	863	87.5%	123
Beef & beef products	3	7	36	547.3%	6	87.5%	1
Poultry Meat & Prods. (ex. eggs)	41	366	335	91.4%	320	87.5%	46
<b>Other products</b>							
Dairy products	383	582	234	40.1%	247	42.4%	335
Ethanol (non-bev.) (Thousand liters)	209*	36,044	36,044	100.0%	35,953	99.7%	90

Source: Global Agricultural Trade System data (USDA 2020a).

Note: For pork, beef, and poultry, we multiply China’s imports from February 15, 2020 to December 31, 2020, by 1.14 to set the trade target for the first year of the trade deal.

\*For ethanol, the unit is thousand liters.

Table A2 presents the retaliatory tariffs and tariff exemptions China imposed on US corn, soybeans, ethanol, and pork based on data collected from China’s Ministry of Finance. China reduced retaliatory tariffs on US soybeans and pork imposed on September 1, 2019, by half on February 14, 2020, and exempted soybeans, pork, and corn from retaliatory tariffs on March 2, 2020. However, China’s tariff on US ethanol remains at 45%.

**Table A2. China's Retaliatory Tariffs and Tariff Exemptions on Key US Agricultural Commodities**

Document	First-wave tariff	HS8	HS6	Commodities	First tariff	Second increase	Second increase	Decreased tariff	Decrease date	Tariff exemption	HS8 description
2018.Doc5	7/6/2018	10059000	100590	Corn	0.25					3/2/2020	Maize excl. seed
2018.Doc5	7/6/2018	12019010	120190	Soybeans	0.25					3/2/2020	Yellow soya beans excl. seed
2019.Doc4	9/1/2019	12019010	120190	Soybeans	0.05			0.025	2/14/2020	3/2/2020	Yellow soya beans excl. seed
2019.Doc4	9/1/2019	12019090	120190	Soybeans	0.10			0.050	2/14/2020	3/2/2020	Other soya beans excl. seed
2018.Doc5	7/6/2018	22072000	220720	Ethanol, incl. bev.	0.25					3/2/2020	Ethyl alcohol & other denatured spirits of any strength
2018.Doc6	9/24/2018	22071000	220710	Ethanol, incl. bev.	0.10	0.15	6/1/2019				Undenatured ethyl alcohol, of alcoholic strength=80%
2018.Doc4	4/2/2018	22072000	220720	Ethanol, incl. bev.	0.15						Ethyl alcohol & other denatured spirits of any strength
2018.Doc4	4/2/2018	02031200	020312	Pork & Pork Products	0.25					3/2/2020	Fresh or chilled swine meat hams, shoulders & cuts thereof with bone
2018.Doc4	4/2/2018	02031900	020319	Pork & Pork Products	0.25					3/2/2020	Fresh or chilled swine meat, nes (unboned)
2018.Doc4	4/2/2018	02032900	020329	Pork & Pork Products	0.25					3/2/2020	Frozen swine meat, nes
2018.Doc4	4/2/2018	02064900	020649	Pork & Pork Products	0.25					3/2/2020	Frozen edible swine offal (excl. livers)
2018.Doc5	7/6/2018	02031200	020312	Pork & Pork Products	0.25					3/2/2020	Fresh or chilled swine meat hams, shoulders & cuts thereof with bone
2018.Doc5	7/6/2018	02031900	020319	Pork & Pork Products	0.25					3/2/2020	Fresh or chilled swine meat, nes (unboned)
2018.Doc5	7/6/2018	02032900	020329	Pork & Pork Products	0.25					3/2/2020	Frozen swine meat, nes
2018.Doc5	7/6/2018	02064900	020649	Pork & Pork Products	0.25					3/2/2020	Frozen edible swine offal (excl. livers)
2019.Doc4	9/1/2019	02031200	020312	Pork & Pork Products	0.10			0.050	2/14/2020	3/2/2020	Fresh or chilled swine meat hams, shoulders & cuts thereof with bone
2019.Doc4	9/1/2019	02031900	020319	Pork & Pork Products	0.10			0.050	2/14/2020	3/2/2020	Fresh or chilled swine meat, nes (unboned)
2019.Doc4	9/1/2019	02032900	020329	Pork & Pork Products	0.10			0.050	2/14/2020	3/2/2020	Frozen swine meat, nes
2019.Doc4	9/1/2019	02064900	020649	Pork & Pork Products	0.10			0.050	2/14/2020	3/2/2020	Frozen edible swine offal (excl. livers)