



# Sino-US agricultural trade in the past 40 years: Retrospect and prospects on the signing of the first phase Sino-US economic and trade agreement

Enfu Cheng<sup>1\*</sup> and Yuhui Luo<sup>2</sup>

<sup>1</sup>Academy of Marxism, Chinese Academy of Social Sciences, Beijing 100732, China.

<sup>2</sup>China Capital Market Institute, Shenzhen 518000, China.

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## ABSTRACT

In this paper, the evolution of Sino-US agricultural trade during China's 40 years of reform and opening-up is described on a stage-by-stage basis, with an itemized breakdown of the imports by the two countries. The United States mainly imports various fruits and vegetables from China, while China imports principally corn, soybeans, cotton and pork from the United States. The paper analyzes several important changes in the import and export of agricultural products in the context of current trade frictions, in order to make a short-term forecast of agricultural trade between China and the United States following the signing of the first phase agreement on economic relations and trade between the two countries. More specifically, it discusses agriculture in the context of the economic and trade relations between the two countries in the next five years, as well as the impact on China's agriculture and market demand. We believe that the signing of the first phase agreement between China and the United States on economic relations and trade will have both positive and negative impacts on the development of China's agriculture. While China is required to increase the amount and range of its imports of agricultural produce from the United States, it must properly address two issues: imports of genetically modified agricultural products and the cancellation of its most favored nation status.

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## SINO-US AGRICULTURAL TRADE DURING THE 40 YEARS OF CHINA'S REFORM AND OPENING-UP

### The general situation of Sino-US agricultural trade in the past 40 years

Since the establishment of diplomatic relations between China and the United States, the two countries have enjoyed close and mutually beneficial economic and trade relations, with mutual opening of markets, deepening exchanges and cooperation in agriculture, and expanding trade volume (Zhang, 2016). Since China joined the WTO, frequent trade frictions have become an important issue in

China and the United States are the world's two largest Sino-US trade relations (Yin, 2006; Feng et al., 2018). These frictions, however, do not affect normal trade activities between the two countries, since trade partners (Dai et al., 2018; Zhang, 2018), and Sino-US trade has more favorable than adverse results for both sides (Li, 2012).

China is the largest developing country in the world, and the United States is the largest developed country. The strengthening of bilateral trade in agricultural products has not only enhanced the agricultural development of the two countries, but also played an important role in the stability and prosperity of world agricultural markets. In retrospect, the development of Sino-US agricultural trade in the past 40 years can be divided into three stages: initial establishment; rapid development; and prosperity and stability.

\*Corresponding author. E-mail: luoyuhui@126.com.

### **Initial establishment (1979-2000)**

In 1978 China made the decision to embark on reform and opening-up, beginning a new and magnificent historical journey. In January 1979 the People's Republic of China and the United States of America formally established diplomatic relations. In July of the same year, China and the United States signed the *Sino-US Trade Relations Agreement*, granting each other most-favored-nation (MFN) treatment, which marked the normalization of economic and trade relations between China and the United States. Bilateral trade has since flourished.

Encouraged by China's implementation of the household responsibility system based on collective ownership of rural land, coupled with the increase in prices for agricultural produce and the consequent narrowing of the "scissors gap" between the prices of industrial and agricultural products, the enthusiasm of farmers for growing grain was stimulated as never before. In 1978 total grain output in China was barely 600 billion jin,<sup>1</sup> while in 1984 it exceeded 800 billion jin, an increase of two hundred billion jin in six years.<sup>2</sup> The increase in grain production provided a solid guarantee for agricultural and rural development, and agricultural trade also began between China and the United States. In 1979 this trade was worth \$640 million (Harding, 1993, 159); by 1992 the figure had risen to \$1.713 billion, nearly tripling in 13 years and growing at an average annual rate of 8 percent. In 1993 the Central Committee of the Communist Party of China decided to establish the socialist market economy system. The door of China's opening to the outside world opened wider, and trade in agricultural products between China and the United States deepened. In 1995 this trade totaled \$4.1 billion, nearly tripling over three years from \$1.3 billion in 1993. By the second decade of reform and opening-up, Sino-US agricultural trade had declined to \$2.511 billion as a result of the Asian financial crisis. At the same time, the United States was becoming increasingly dependent on the Chinese agricultural market. From 1992 to 2000, China's agricultural trade integration index with the United States was around 0.6, while the United States' agricultural trade integration index with China was greater than 1 and was continuing to rise (Zhang and Meng, 2006).

### **Rapid development (2001-2012)**

In 2001 China joined the WTO, and accelerated its integration into the system of economic globalization. Sino-US agricultural trade entered a period of rapid development (Ma et al., 2018). By the third decade of reform and opening-up, China's total exports and imports

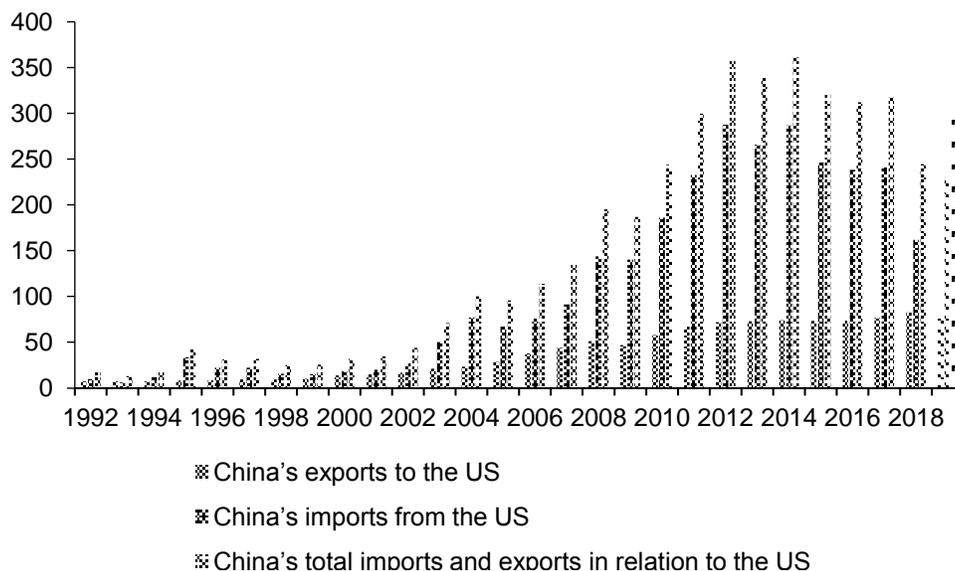
of agricultural produce to and from the United States had reached \$19.52 billion, up by 460.4% from 2003. The Chinese government had set out to establish a unified labor market between urban and rural areas and to guide the orderly transfer of rural labor to cities and towns. In 2000 the number of migrant workers from rural areas amounted to 60 million, a figure that by 2006 had risen to 130 million, corresponding to 60 percent of the total rural labor force (Department of Rural Socio-Economic Surveys, National Bureau of Statistics of the People's Republic of China, 2006) and highlighting China's huge labor dividend.

Guided by the theory of comparative advantage, China has made great efforts to develop an export-oriented economy. It has made a vigorous entry into international markets, and has dramatically increased its foreign exchange reserves, allowing it to purchase foreign agricultural products. At the same time, the unequal interchange of land, capital and labor between urban and rural areas in China has led to at least three serious problems. First, as the Chinese population has undergone rapid urbanization the government has kept for itself most of the sums corresponding to the increase in land values resulting from the expropriation of farmland, while farmers can receive only 4.28% of this amount from the government as compensation for the expropriation of their land and for relocation expenses. Second, rural funds continue to flow to the cities, and the gap between farmers' savings balances and loan balances has gradually widened, from RMB 1,661.999 billion Yuan in 2005 to RMB 5,622.171 billion Yuan in 2013. Third, the rural labor force lags behind urban workers in terms of wages, social security and education (Guo and Cui, 2016).

These are the reasons why rural development has been held back, and why for lack of a modern mechanized agriculture, China has only been able to export labor-intensive products like fruits and vegetables to the United States. By contrast, the United States has a highly mechanized agriculture, and China has imported soybeans, cotton, corn and other land-intensive agricultural products from the United States (Luo and Zheng, 2019). The situation gives full play to the comparative advantages of the two countries, allowing them to achieve win-win cooperation. In 2006, the United States ranked among China's top five agricultural export markets, and in 2010, China became the largest agricultural export market of the United States. At the same time, US agricultural producers were becoming increasingly dependent on the Chinese market. In the years after 2003, the US agricultural trade integration index with China was greater than 2, while China's agricultural trade integration index with the United States

<sup>1</sup> "Jin" is a measure of weight used in China. One jin equals 1/2 kilogram.

<sup>2</sup> Guangming net: "China's Agricultural Production Attains a New Level in the Past 70 Years with an Increase of 4.8 Times in Total Volume." [In Chinese.]



**Figure 1.** China's total imports and exports of agricultural products to and from the United States from 1992 to 2018 (hundreds of millions of US dollars). Source: Data between 1992 and 2003 are from Liu (2005); the rest are from the Department of Foreign Trade, Ministry of Commerce of the People's Republic of China: Monthly Report on China's Imports of Agricultural Products. <http://wms.mofcom.gov.cn/article/ztxx/ncpmy/ncpydtj/200603/20060301783733.shtml>.

was less than 1 (Shuai and Wang, 2011).

**Prosperity and stability (from 2013 to the Present)**

Since 2013, China has moved beyond the stage of rapid urbanization and has entered that of steady urban development. The country's economic structure has clearly been optimized, and adjustment is now proceeding more slowly. China has reached the point where industry is feeding value back into agriculture, where the cities are driving rural development, and where the gap between urban and rural areas is gradually narrowing.

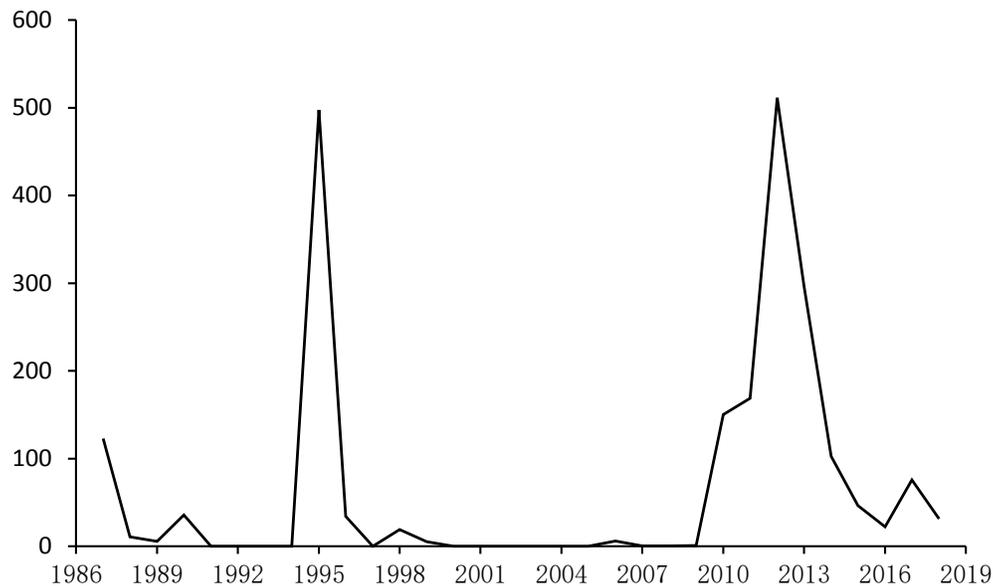
The construction of modern agriculture in China has taken big steps forward. With the comprehensive rate of mechanization of the cultivation and harvest of major grain crops now exceeding 80%,<sup>3</sup> China's agricultural production has shifted from relying on human and animal power to mechanical power (Liu, 2013). On the basis of its improved productivity, China's agriculture is more capable of expanding into international markets. The degree of agricultural opening to the outside world is constantly increasing, and the level of foreign trade has been raised to a new level. China has become the world's fifth-largest

exporter of agricultural products, leading the field in exports of apple juice and garlic for many consecutive years, and firmly implanted in the US market. Figure 1 shows the changes in China's total imports and exports of agricultural products in relation to the United States from 1992 to 2018. In 2017, China's total imports and exports of agricultural products to and from the United States reached \$31.74 billion. Although China's total agricultural imports and exports to and from the United States fluctuated from 2013 to 2017, they remained above \$30 billion for six consecutive years.

As a result of trade friction initiated by the United States, China's agricultural trade with the US in 2018 fell to \$24.4 billion, down by 23% from 2017 and equivalent only to the level in 2010. Had it not been for this friction, China's exports and imports of agricultural produce to and from the United States would have reached \$30.9 billion in 2019, calculated on the basis of the average growth rate of China's agricultural trade with the US, and would have remained above the \$30 billion level. Meanwhile, the structural optimization and adjustment of China's agricultural economy, and the promotion of a diversified international trade pattern, mean that China's agricultural exports rely less and less on the US market.

<sup>3</sup> Xinhua News Agency: "The comprehensive mechanization rate of crop cultivation and harvest in China exceeds 67 percent." [In Chinese.] Accessed

March 12, 2020. [http://www.gov.cn/xinwen/2019-01/19/content\\_5359371.htm](http://www.gov.cn/xinwen/2019-01/19/content_5359371.htm).



**Figure 2.** China's imports of corn from the United States from 1987 to 2018 (10,000 tons). Source: United Nations (UN), Food and Agriculture Organization (FAO). <http://www.fao.org/faostat/zh/#home>; Department of Foreign Trade, Ministry of Commerce of the People's Republic of China: Monthly Report on China's Imports of Agricultural Products. <http://wms.mofcom.gov.cn/article/ztxx/ncpmy/ncpydtj/200603/20060301783733.shtml>.

Since 2013, China's agricultural trade integration index with the United States has fallen to less than 1, and that trend continues.

### **Breakdown of Sino-US agricultural trade over the past 40 years**

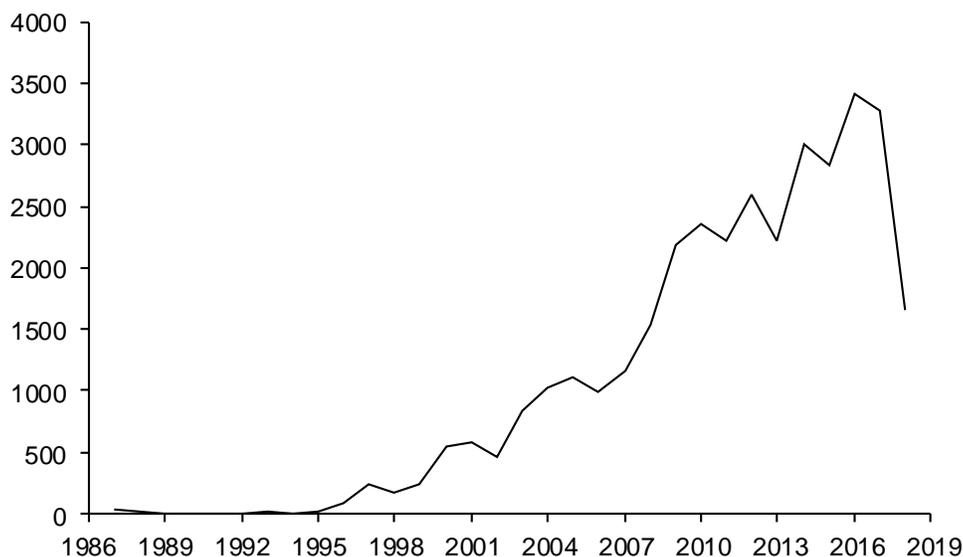
Over the past four decades, China's main agricultural imports from the United States have been corn, soybeans, cotton and pork, while the United States has mainly imported fruits and vegetables from China. We will now review the trade situation with regard to several agricultural products that have been important sources of Sino-US trade friction during this period.

### **Major Chinese agricultural imports from the United States**

**Corn:** Corn is an important animal feed and industrial raw material, and is one of the three main grain crops, with wheat and rice the other two. Corn plays a decisive role in China's grain structure. The Cultural Revolution had a severe impact on China's economy, and until the early days of reform and opening-up, grain production was still under strain. A food crisis could have occurred at any time. To ensure food security in years when domestic corn production was low, China was a net importer of corn,

mostly from the United States.

Figure 2 shows China's imports of corn from the United States from 1986 to 2018. In 1987, China imported 1.23 million tons of corn from the United States, accounting for 79.7 percent of its total corn imports. The corresponding figure in 1995, of 4.98 million tons, represented 96 percent of the total. As China's grain production increased and its capacity to produce corn continued to rise, bumper harvests left the country with huge corn stocks, and annual imports fell to less than 100,000 tons from 1999 to 2009. Until 2006 the price of domestic corn was lower than that of imported corn, and most of the corn imports in this period were for structural reasons. Since 2010, with the elimination of agricultural export subsidies and other policies, coupled with the price advantage of imported corn, China has turned from a net exporter of corn to a net importer. Between 2010 and 2013 more than 90 percent of China's corn imports came from the United States. In 2010 China imported 1.5 million tons of corn from the US, representing 95% of its total corn imports and more than all of its corn imports over the previous decade. Since General Secretary Xi Jinping came to office, his national food security strategy has seen corn prices continue to rise as a result of the temporary policy of collecting and storing grain. This policy has encouraged farmers to plant corn, the production of which has exceeded 200 million tons for seven consecutive years. The international market price of corn has not been affected, and remains lower by nearly RMB 300 Yuan per ton (Chen and Gao, 2014). In 2012



**Figure 3.** Volume of China's imports of soybeans from the United States from 1987 to 2018 (10,000 tons).

Source: United Nations Food and Agriculture Organization. <http://www.fao.org/faostat/zh/#home>; Monthly Report on China's Imports of Agricultural Products. <http://wms.mofcom.gov.cn/article/ztxx/ncpmy/ncpydtj/200603/20060301783733.shtml>.

China imported 5.2 million tons of corn; of this amount, some 5.11 million tons were from the United States, accounting for more than 10 percent of US exports and breaking the record for China's corn imports. After 2013, as China sought to diversify its sources of corn imports and was hit by a wave of shipments of genetically modified corn from the United States, its imports from the US fell sharply, to 220,000 tons in 2016. Before the trade friction began, China imported 760,000 tons of corn from the United States, accounting for 27 percent of total Chinese corn imports.

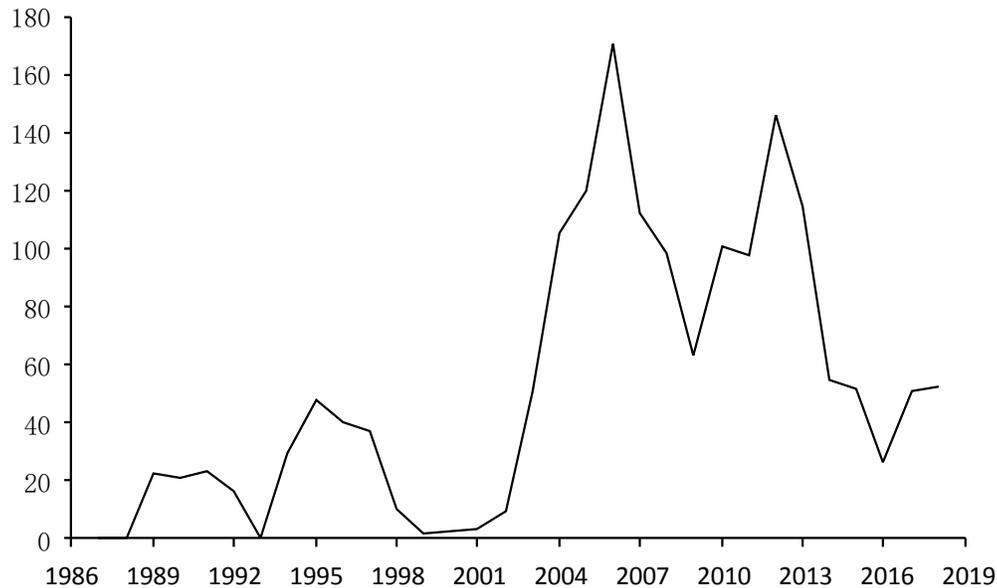
**Soybeans:** China has a long history of soybean cultivation, and can be described as the world's soybean gene bank. Until the second half of the 20th century, the country remained the world's largest soybean producer (Shi and Wang, 2018). Until 1996 China was basically self-sufficient in soybean production, and was able to export soybeans to acquire foreign exchange. As China's reform and opening-up has deepened and economic development has accelerated, demand for soybeans has risen, and from being a major exporter, China has gradually become a large-scale importer of soybeans. Figure 3 shows China's imports of soybeans from the United States from 1986 to 2018. In 1992, China imported 71,000 tons of US soybeans; by 1996 that figure had risen to 860,000 tons, making China a net importer.

In 1997 China adopted a tariff quota system for soybeans, and its imports from the United States stabilized at about 2 million tons per year. In 1999 China lifted the quota on soybeans and imposed a symbolic 3% tariff, which still applies today and remains much lower than the tariffs imposed by the European Union and Japan. In 2000 China imported 5.41 million tons of American soybeans, an increase of 2.97 million tons or 121% over the figure in 1999. In the meantime, large-scale soybean processing plants had sprung up because of increased foreign investment. China's soybean production was far from being able to meet domestic needs, and the volume of soybean imports from abroad continued to grow. US soybeans, with their price advantage as genetically modified products, quickly captured the Chinese market. By 2003, China had become the largest importer of US soybeans, accounting for 30 percent of US soybean sales.<sup>4</sup> China's imports of US soybeans exceeded 10 million tons in 2004, some 21.8 million tons in 2009 and 30 million tons in 2014. In 2017, China imported 32.85 million tons of US soybeans, accounting for 34% of China's imported soybean market, second only to Brazil.

**Cotton:** China has a huge cotton textile industry, exports cotton textiles in large quantities, and is also a big cotton producer. However, domestic cotton production cannot meet the demand from the textile mills, so China needs to

<sup>4</sup> Consulate-General of the People's Republic of China in Chicago: "China Becomes the Largest Buyer of US Soybeans, Accounting for 30 Percent of

Total US Soybean Exports." [In Chinese.] Accessed March 12, 2020. <http://www.chinaconsulatechicago.org/chn/zxw/t56597.htm>.



**Figure 4.** Volume of China's cotton imports from the United States from 1987 to 2018 (10,000 tons). Source: United Nations Food and Agriculture Organization: <http://www.fao.org/faostat/zh/#home>; Monthly Report on China's Imports of Agricultural Products: <http://wms.mofcom.gov.cn/article/ztxx/ncpmy/ncpydtj/200603/20060301783733.shtml>.

import cotton from foreign countries. The volume of these imports has fluctuated considerably from year to year. The US is one of the world's most important cotton-producing countries, alongside China and India, and with its large-scale production and advanced technology, has occupied an important position in China's cotton imports.

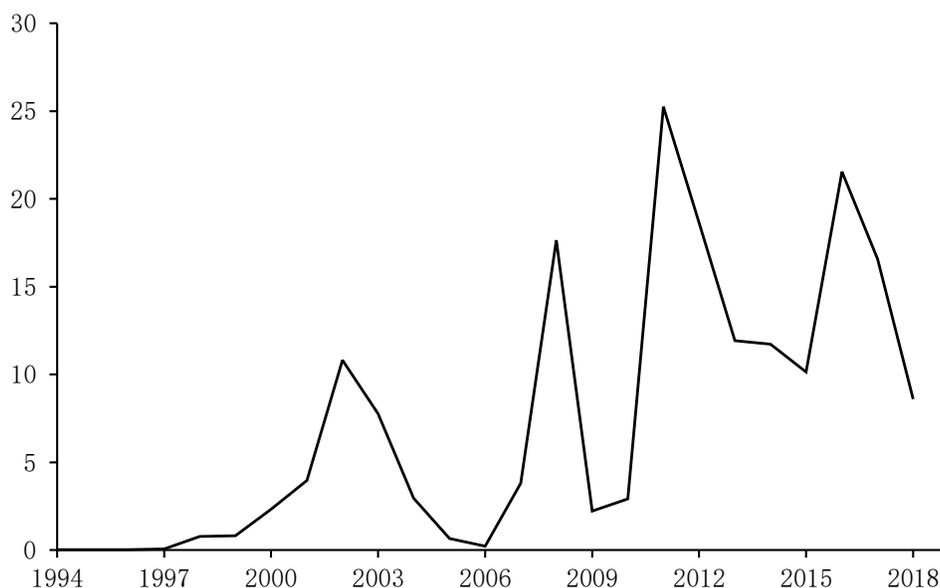
From the 1990s to the early 21<sup>st</sup> century, more than 50 percent of China's cotton imports came from the United States. Figure 4 shows China's imports of US cotton from 1986 to 2018. In 1995 China imported 740,000 tons of cotton from the United States, accounting for 65.07 percent of its total cotton imports.

Although US cotton exports to China have increased during the 21<sup>st</sup> century, growing Chinese trade with India and other countries has meant that the proportion of Chinese cotton imports sourced from the United States has gradually decreased, though the United States remains China's largest cotton supplier. In 2004 China lifted restrictions on the right to import and export cotton, and Chinese firms imported one million tons of US cotton, twice as much as in 2003. From 2004 to 2013, with the exception of 2009, China's annual cotton imports from the United States remained at a level of more than one million tons, but the proportion of US cotton in China's total cotton imports fell from 58.71% to 27.77%. In 2017 China imported 506,000 tons of US cotton, which accounted for

43.84% of its total cotton imports, and was a major customer for US cotton producers.

**Pork and pork by-products:** Since 1985 the price of pork in China has been regulated by the market, and the pig-breeding industry has developed rapidly. The proportion of China's pork production in the world total has increased from some 20% to about 50%.<sup>5</sup> Pork is the principal meat consumed by the Chinese people. As living standards in China have improved, the demand for pork has increased, and so too has the demand for pork imports. As Figure 5 shows, China's total pork imports and its pork imports from the United States have fluctuated considerably. In 2002 some 108,000 tons of pork were imported from the US, accounting for 74.68% of China's total pork imports. Since 2007, China has moved from being a net exporter of pork to being a net importer. In 2008 Chinese pork imports from the United States rose again, to 177,000 tons, accounting for 47.28% of total pork imports and up by 363.5% from 2007. In 2011 China imported 250,000 tons of pork from the United States, accounting for 53.98% of its total pork imports and making the United States China's largest pork supplier. After 2011, China's annual pork imports from the United States remained above 100,000 tons. The proportion of China's total pork imports supplied by the US then declined gradually to about 13% after 2015, though

<sup>5</sup> China's Industrial Information: "Analysis of China's Pork Consumption." [In Chinese.] Accessed March 12, 2020. <http://www.chyxx.com/industry/201905/741508.html>.



**Figure 5.** Volume of China's pork imports from the United States (10,000 tons).

Source: United Nations Food and Agriculture Organization. <http://www.fao.org/faostat/zh/#home>. Data from the UN Food and Agriculture Organization cover only pork. There are no data for pork-related by-products.

the United States remains among China's top five sources of pork. Of 582,000 tons of US pork products imported by China in the years before the trade friction between China and the United States, 166,000 tons were pork and 416,000 tons were pig offal. China contracted for 91% and 96%, respectively, of US exports of pig feet and heads.<sup>6</sup> It is the diet of the Chinese people that maximizes the economic value of the US pig-breeding industry.

### **Breakdown of US imports of Chinese agricultural products**

**Apple Juice:** In the United States, fruit juice and carbonated beverages are indispensable parts of people's daily lives. Apple juice is widely consumed by children and teenagers, and enjoys a large market. Mixed juice drinks containing apple juice are very popular due to their delicious taste and rich nutritional content. The Loess Plateau in China is considered one of the world's best apple-growing regions, producing apples with lower acidity than in other countries. Beginning in the final years of the last century Chinese apple juice entered the US market, and with its low cost, quickly gained a foothold.

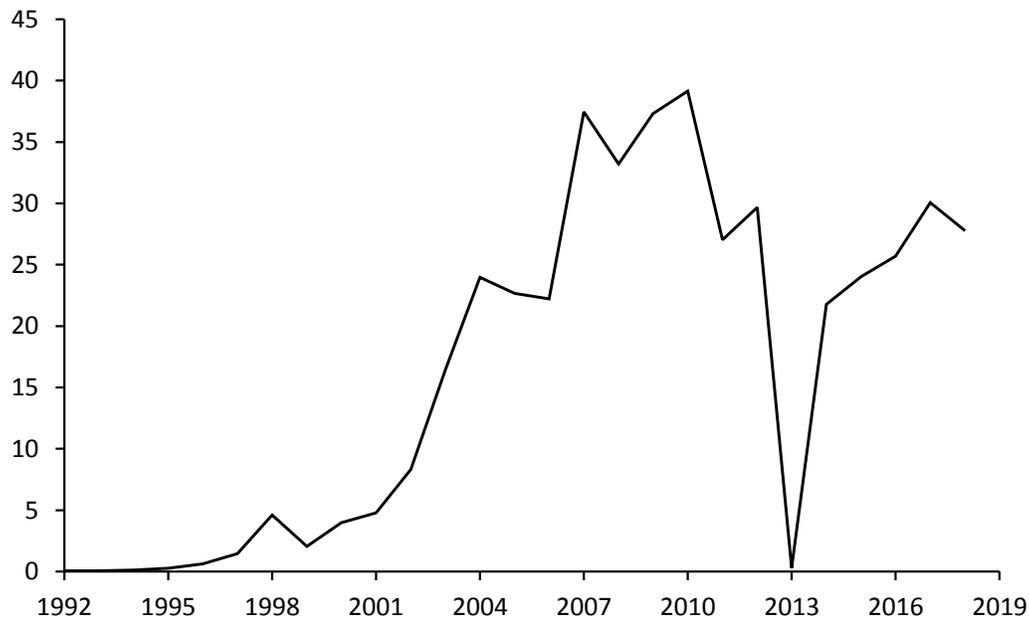
After China's entry into the WTO, the gradual strengthening of Sino-US economic and trade cooperation

and exchanges, together with the success of China in employing the WTO framework to defeat moves against Chinese apple juice under the US Anti-Dumping Act, led to restrictions on the sale of Chinese apple juice in the US market being broken. Apple juice imports to the United States from China have grown rapidly; they reached 300,000 tons in 2012, increasing at an annual average of 245% and accounting for 70% of the US market.

In 2013, reports that "apple juice contains dangerous amounts of arsenic" began appearing in the US (Beverage Industry, 2013). The US government immediately tightened its regulation of the apple juice market, requiring that inorganic arsenic in each liter of apple juice should not exceed 10 micrograms. However, China's regulation of inorganic arsenic in apple juice was still in its infancy at the time, with a limit of 200 micrograms per liter. Suddenly, there was a huge gap between standards in the two countries; Chinese companies found it difficult to adapt, and exports of apple juice to the United States fell off a cliff, to just 8,000 tons. Once production standards in Chinese enterprises were adjusted, the volume of apple juice imports from China recovered rapidly. Before the Sino-US trade friction, the United States imported 300,000 tons of Chinese apple juice, with a value of \$2.9 billion. Figure 6 presents a graphic illustration of these changes.

<sup>6</sup> China Daily: "Pig Feet from the United States Cannot Be Sold to China Because of the Trade War, but Americans Do Not Eat them." [In Chinese.]

Accessed March 12, 2020. [http://china.chinadaily.com.cn/2018-08/09/content\\_36737993.htm](http://china.chinadaily.com.cn/2018-08/09/content_36737993.htm).



**Figure 6.** Volume of US imports of Chinese apple juice from 1992 to 2018 (10,000 tons). Source: United Nations Food and Agriculture Organization. [http://www.fao.org/faostat/zh/#home; Monthly Report of China's Agricultural Products Import. http://wms.mofcom.gov.cn/article/ztxx/ncpmy/ncpydtj/200603/20060301783733.shtml](http://www.fao.org/faostat/zh/#home;MonthlyReportofChina'sAgriculturalProductsImport.http://wms.mofcom.gov.cn/article/ztxx/ncpmy/ncpydtj/200603/20060301783733.shtml).

**Garlic:** Garlic is very popular in the United States, which has a strong garlic culture. Since 1979 California has hosted a garlic festival, to which garlic foods of all kinds attract tourists from around the world. China is the largest exporter of garlic to the United States. In the 1980s, when the household contract responsibility system was introduced and the drive to get rich began, garlic began to be grown on a large scale as a highly profitable cash crop. Initially, it was sold mainly on the domestic market.

Figure 7 shows the changes in US imports of Chinese garlic from 1992 to 2017. By the 1990s, Chinese garlic companies were expanding into foreign markets. With their low prices and large output, they quickly came to dominate the US market. In 1993 the United States imported 36,362 tons of Chinese garlic, accounting for 92.12% of total US garlic imports. This was followed by a US anti-dumping investigation against Chinese garlic; because no Chinese companies had responded by 1995, Chinese garlic was withdrawn almost completely from the US market by 2001.

After China's entry into the WTO, Chinese garlic enterprises adopted a strategy of responding to the lawsuit in accordance with WTO rules, and applied for a review of new garlic exporters. In 2002, a favorable arbitration finding led to the high anti-dumping duty of 376.67% being reversed.<sup>7</sup> The United States imported 23,312 tons of

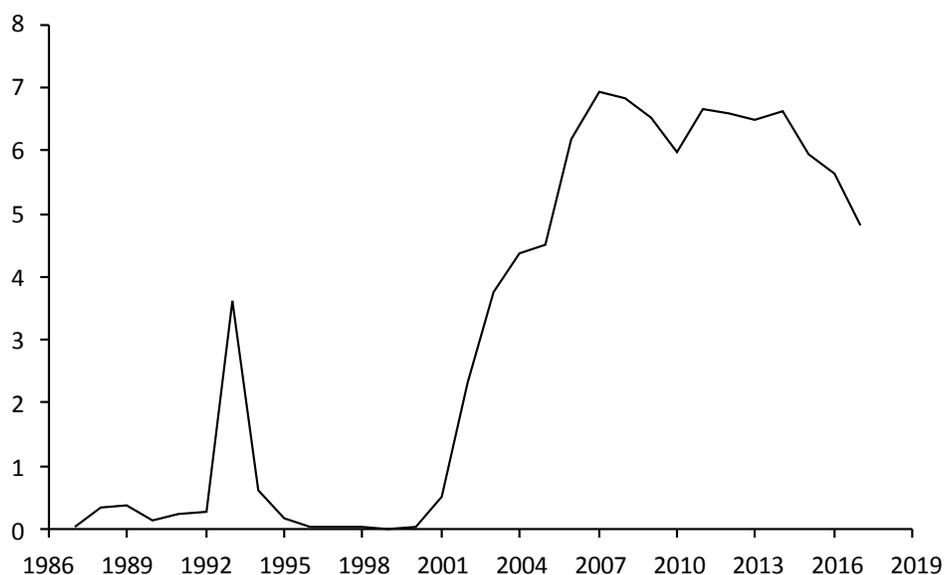
Chinese garlic that year, accounting for 48.41% of total US garlic imports.

Between 2000 and 2015, the Asian-American population grew by 72 percent, from 11.9 million to 20.4 million, according to the Pew Research Center.<sup>8</sup> As more and more Asians and Mexicans migrated to the United States, the benefits of garlic were more widely recognized, and it became a commonplace item in the US diet. From 2002 to 2015 US garlic imports rose from 48,159 tons to 87,555 tons, with Chinese garlic imports reaching 61,943 tons in 2006 and 91.97% of total US imports in 2011. From 2015 to 2017 the price of Chinese garlic rose continuously due to bad weather and other factors, causing imports to the United States to drop. Before the trade friction began between China and the United States, the United States imported 48,095 tons of Chinese garlic, accounting for 53.54% of its total garlic imports.

The history of trade in the above agricultural products illustrates the process through which China's agricultural trade with the United States moved from initial contact to deep integration. China has turned gradually from a country with a surplus of agricultural produce to one with a deficit. The United States, optimizing its industrial production chains, has steadily expanded the scale of its surplus in the agricultural produce trade with China.

<sup>7</sup> China.com: "China's Garlic Exports to the United States Get Zero Tax Rate for the First Time in History." [In Chinese.] Accessed March 12, 2020. <http://www.china.com.cn/chinese/EC-c/243915.htm>.

<sup>8</sup> "Big Data for Asian Immigrants in the United States: Chinese Like Buying Real Estate and Indians Have High Incomes." [In Chinese.] Accessed March 12, 2020. <http://www.chinaqw.com/hqhr/2017/09-15/161630.shtml>.



**Figure 7.** Volume of US imports of Chinese garlic from 1992 to 2017 (10,000 tons).

Source: United Nations Food and Agriculture Organization (<http://www.fao.org/faostat/zh/#home>).

Note: The UN FAO and the Department of Foreign Trade of the Ministry of Commerce of the People's Republic of China use different statistical parameters. This figure is based on the UN FAO data.

As the Sino-US trade in agricultural produce has developed, frictions have been inevitable. Amid the dynamic process that has seen unilateral sanctions launched by the United States, and China adapting to the international rules of WTO and responding to the relevant requirements of the United States, the people of the two countries have nevertheless benefited from the international trade exchanges, and the economic and trade relations involved have become closer.

### CHINESE AND US AGRICULTURE IN THE CONTEXT OF CURRENT TRADE FRICTION

On August 19, 2017, the United States officially announced the launch of a "Section 301 investigation" against China. In September 2018, the US government decided to impose a 10% tariff on \$200 billion of Chinese exports to the United States. Then on May 10, 2019, the United States decided to raise tariffs from 10% to 25% on Chinese goods worth \$200 billion. A tariff agreement covering an additional \$325 billion of goods is in the process of being drafted, with the possibility of still further increases to follow.

The Chinese Government has made clear that it will conduct friendly trade relations with all countries under WTO-set international trade rules, that it strongly opposes unilateralism, protectionism and economic hegemony, and

that it will never allow any country to impose its interests on China by means of economic intimidation. Against this background, trade frictions between China and the United States have adversely affected the healthy economic development of the two countries (Li et al., 2019; Lin and Ren, 2010; Zhou et al., 2019), a situation that people in neither of the two countries find desirable. The question now is: What impact is the Sino-US trade friction having on the healthy development of agriculture in the two countries?

### Impacts of the Trade friction on US agriculture

In the trade friction between China and the US, the advantage is tilted in favor of US agriculture. The United States is the world's largest exporter of agricultural products, while China is the largest importer. China and the United States have different endowments of agricultural resources, making the trade in agricultural products between the two countries strongly complementary. In 2017, China imported US \$24.12 billion worth of agricultural products from the United States, accounting for 19.2% of China's total agricultural product imports. China's trade deficit with the United States in the area of agricultural products amounted to \$16.38 billion. In response to the aggressive policies of the Trump administration, China gradually increased its tariffs

**Table 1.** Net profit of major US agricultural products from 2012 to 2018 (RMB Yuan per mu<sup>9</sup>).

Year	Rice	Wheat	Corn	Soybean	Peanut	Cotton
2012	167.11	42.31	153.29	165.53	478.69	-78.05
2013	343.58	-25.90	44.93	74.08	80.83	-87.52
2014	241.21	-68.33	-86.71	22.43	-158.69	-148.37
2015	91.48	-98.07	-65.67	-68.59	-632.44	24.28
2016	-76.25	-100.60	-78.56	82.96	-689.70	59.52
2017	29.9	-110.38	-70.63	50.61	-22.25	31.61
2018	153.78	-85.39	-52.44	-5.2	-86.33	-76.60

Source: Price Department of National Development and Reform Commission (2017). Compilation of national data on the cost and profit of agricultural products, 2019.

on US exports to China after 2018. Although US agriculture is the world's most modern and competitive, it still faces losses (Table 1).

So far, China has released two lists of imports from the United States that are subject to new tariffs. The first of these lists, announced on June 15, involved 517 agricultural products and saw a 25 percent tariff placed on \$50 billion of American goods. Starting July 6, customs duties were imposed on soybeans, grains, cotton, meat, aquatic products, dairy products, fruits, nuts, whisky and tobacco. The second list of 387 agricultural products covered the vast majority of items that were not in the first, and included raw hides, vegetable oils, vegetables, coffee, cocoa products, and so on. The following is an analysis of several important agricultural products involved in the Sino-US trade friction.

### Soybeans

Over nearly 40 years, the United States became China's number one source of imported soybeans, with the Chinese market taking half of all US soybean exports. During the few dramatic years of trade friction between the United States and China, however, Brazilian bean farmers have seized half of that territory, to the dismay of their US counterparts.

The Chinese soybean market is the area most affected by the Sino-US trade friction (Lv et al., 2019). In 2017 China imported 95.56 million tons of soybeans, of which 32.86 million tons were from the United States, accounting for 34% of China's total soybean imports. This figure is important to the US, since it represents more than 60% of its soybean exports. Between May and July 2018, the price of soybeans in the United States fell by nearly 20%, from \$10.50 to \$8.50, as the trade friction between China and

the United States escalated. Between September 2018, when the trade friction flared up again, and May 2019 US soybean exports to China fell by 75% compared with the same period of the previous year. The trade friction means that US agricultural products have lost their price advantage in China, and for farmers in the United States, the immediate effect has been a sharp drop in incomes.

In the international market there is no other country of China's size, able to digest so many soybeans. As a result, American soybean farmers cannot sell their product even at much-reduced prices. They have to store their soybeans and hope the Sino-US trade friction will end, so that sales to China can resume. Meanwhile, a bumper crop has caused the volume of US soybeans in storage to "explode," and storage costs have kept rising. US agricultural consultant Matt Bennett predicts that in central Illinois there will be an increase in the next few weeks to 40% above the level at the same time last year. If the Sino-US trade friction does not end, US soybeans will rot on the ground. American Soybean Association President John Heisdorfer said in a statement on April 4, 2018, "We call on President Trump to engage the Chinese in a constructive manner—not a punitive one—and achieve a positive result for soybean farmers."<sup>10</sup>

### Cotton

The United States is the world's largest exporter of cotton, with most of its production going to export. China is among the world's major cotton importers. Before the Sino-US trade friction, China imported 506,000 tons of US cotton, accounting for 43.8% of its total cotton imports, up by 92.2% from the previous year.

By June 2018 China and the United States had imposed mutual additional tariffs, with cotton and textiles both on the list. The results included a downturn for the cotton textile industry. From January to May 2019 China imported 186,000 tons of American cotton, down by 49.2% from the same period in the previous year. As in the case of soybeans, even the partial loss of the huge Chinese market has had a serious impact on US cotton sales. As stated by Karin Malmstrom, Director for China and Northeast Asia at Cotton Council International, "In terms of volume, the Chinese market is too large and accounts for a large part of the global textile industry, so the United States will have to adjust its export market, and many countries will have to add up to make up for China's part."

For the Chinese side, the problem is that the US Pima cotton that is exported to China and India every year is superior in quality to other cotton, such as Egyptian long-staple cotton or Indian Pima cotton. Chinese cotton textile

<sup>9</sup> "Mu" is a Chinese measure of area. One mu equals 666.7 square meters.

<sup>10</sup> *China Daily*: "Soybean Group in US calls for Trade Sense," by Zhao Huanxin in Washington, April 5, 2018. [In Chinese.] Accessed March 12,

2020.

<http://www.chinadaily.com.cn/a/201804/05/WS5ac57c07a3105cdcf65165f1.html>.

producers who want to guarantee the quality of their output will have to pay more for American Pima cotton, and the additional cost will eventually be paid by Chinese cotton textile producers and consumers. Since imported cotton is settled in US dollars, the Sino-US trade friction has also resulted in a continuous depreciation of the RMB, with the exchange rate at one point even dropping below 7. This is equivalent to continuously raising the price of imported cotton, thus further increasing the costs borne by many Chinese cotton textile producers.

### ***Pork and pork by-products***

China and the United States have different pork consumption habits, which are mutually beneficial. American meat consumption is beef, lamb and pork-based. Their pork consumption, however, does not include pig heads, trotters and offal, which are the Chinese people's favorites, and which are almost all exported to China. Before the additional tariffs were imposed, China purchased 91% and 96% of American pig heads and feet, respectively.

In 2018, China imported 260,000 tons of pork and pork by-products from the United States, down by 54.9% from the figure for the previous year. For each pig sold, according to American pork producer Ken Marschhoff, Chairman of the Marschhoff Family Food Company, half of the profit comes from the head, feet, tail, and offal. After the second round of additional tariffs, American pork lost its price advantage and competitiveness in the Chinese market.<sup>11</sup> In the broad scheme this is not a major problem, since even though China is the world's largest consumer of pork, US exports of pork to China are not great, accounting for only 6.47% of total US pork exports in 2017, and the market lost due to the trade friction can be replaced by other countries. Almost no other countries, however, have the habit of eating pig heads, feet, tails and offal. Of the 580,000 tons of American pork products imported by China in 2017, some 72% consisted of pig heads, feet, tails and offal, the slow sales of which will result in losses to American farmers.

### ***Corn***

Since 2013 large quantities of American corn have already been withdrawn from the Chinese market, as China has rejected shipments following the discovery within them of unapproved genetically-modified strains. The Sino-US trade friction has resulted in the already small amount of American corn exports to China experiencing further

In 2018 the United States produced 366 million tons of corn and exported 51 million tons, of which 311,000 tons went to China. This represented less than one percent of total US corn exports, and was down by 58.8% from the 756,000 tons exported to China in 2017. Due to African swine fever, the pig-breeding industry has suffered a downturn around the world, resulting in low consumption of American corn feed, and consequently, reduced sales of American corn. Other factors that have had an impact on American corn sales include the energy policies of the Trump administration. Nearly 40% of America's corn is used to produce fuel ethanol (Mao et al., 2018), but Donald Trump's efforts to win support from the oil industry by imposing mandatory blending targets for biofuels have led to a collapse in expected demand for corn. As a result, US corn prices have plunged.

### **Impacts of the Sino-US friction on Chinese agriculture**

The trade friction with the United States will also affect China's agricultural exports to the US. The effects on exports of fruit and vegetable products will be especially marked. The United States is China's third largest export market for fruit, and its fifth largest for vegetables. In 2018 China exported \$8.22 billion of agricultural products to the United States, and imported \$16.2 billion of US agricultural products, for a combined turnover of \$24.45 billion. Compared with 2017, China's total imports and exports fell by \$7.29 billion, with imports from the United States down by \$7.88 billion, or 32.72%. From January to May 2019, China exported \$2.4 billion worth of agricultural products to the United States, down by 22% from the same period of the previous year, and imported \$4.85 billion worth of agricultural products from the United States, down by 57.4% from the same period of the previous year. The products affected most include garlic, concentrated apple juice and other commodities that were exported in large volumes.

### ***Apple juice***

As trade frictions between China and the United States continued to escalate, the United States from September 24, 2018, imposed a 10 percent tariff on imports of fruits and vegetables from China, starting with apple juice. Before the imposition of tariffs, the United States was the largest importer of apple juice from China, and the volume was increasing. From January to August 2018 the United States imported 20.82 tons of apple juice from China, with a value of \$230 million, up by 6.8% and 20% for volume

<sup>11</sup> *China Daily*: "Tariffs Hit Pork Exports: US Pork Farmers Say Losing the Chinese Market is a Huge Blow." [In Chinese.] Accessed March 12, 2020. [http://world.chinadaily.com.cn/2018-08/09/content\\_36738072.htm](http://world.chinadaily.com.cn/2018-08/09/content_36738072.htm).

and value respectively from the same period in 2017. Due to the low barrier for entry to the apple juice industry, more and more apple juice producers from different countries have joined the US market in recent years, and the increase in supply has restrained the rise in the price of apple juice, since in these circumstances even minor price increases result in producers being eliminated by downstream firms.

Since the US government imposed tariffs on Chinese apple juice in September 2018, the price of Chinese apple juice exports to the US has increased, and China has lost its edge in the US market, with its apple juice exports declining drastically. From January to December 2018 US imports of Chinese apple juice fell by 7% from their 2017 level, to 277,800 tons. In January 2019, the United States imported only 19,000 tons of Chinese apple juice, a 93% decline compared to the same period in the previous year. Since February 2019, the United States has dropped out of the top three markets for Chinese apple juice exports. In 2019 the total volume of China's apple juice exports fell by about %, while the value decreased by about 65%. For Chinese apple juice firms, developments in the US market are not encouraging, and nor are those within China. Consumers in China now have the option of buying ready-made milk tea, new-style tea, coffee and other new drinks, and Chinese parents do not buy apple juice for their children as American parents do. If the Sino-US trade friction continues, and Chinese apple juice manufacturers cannot open up new markets in time, the Chinese apple juice industry will be greatly affected.

### **Garlic**

China is the largest supplier of garlic to the United States, and of US garlic imports, more than 50% come from China. Between January and August 2018 the US imported 75,900 tons of garlic from China, a quantity similar to that in previous years. After the US imposed tariffs on Chinese garlic in September 2018, the price of garlic in the US market increased. The wholesale price of 30 pounds of California garlic on the US market was \$60, while after the tariffs were added, the wholesale price of the equivalent weight of Chinese garlic rose from \$20 to \$40.<sup>12</sup>

In the United States, garlic is indispensable to many people as a condiment in their everyday cooking and seasoning. Demand for garlic is therefore quite inelastic, and many American consumers hoard it amid fears of further trade friction between the United States and China.

Between January and December 2018 the United States imported 156,000 tons of garlic from China, with a value of \$330 million; this was up by 21.4% in volume, but down by 35.1% in value from the same period of the previous year. Imports of Chinese garlic to the United States began to decline after the hoarding fever wore off. As of May 2019, the United States had imported 47,000 tons, or \$80 million worth of garlic from China, down by 18.3% in volume and 40.9% in value from the same period in 2018. The United States is the main export market for Chinese garlic, and slow sales in the US have a definite impact on China's total garlic export volume. Between January and May 2019, in fact, China's garlic exports fell by 13% in volume and 18.6% in value.

### **SHORT-TERM FORECAST OF AGRICULTURAL TRADE BETWEEN THE TWO COUNTRIES AFTER THE SIGNING OF THE FIRST PHASE AGREEMENT**

On the afternoon of January 15, 2020, US President Donald Trump and Chinese Vice-Premier Liu He signed the first phase Sino-US trade agreement in Washington, marking a temporary end to 18 months of Sino-US trade friction. Under the agreement, China will import large additional quantities of US products over the next two years, adding to its purchases at least \$12.5 billion in 2020 and \$19.5 billion in 2021. Rising from \$24 billion in 2017, cumulative imports of US agricultural products will reach \$80 billion over two years, with an average annual import volume of \$40 billion. China's purchases of US agricultural products will then continue to grow from calendar year 2022 to calendar year 2025. In 2017 China imported \$24.1 billion of agricultural products from the United States. In 2018 the corresponding figure was \$16.2 billion, including \$7.1 billion of soybeans, \$1.1 billion of cotton, \$470 million of pork and its by-products, and \$600 million of corn. For China to purchase \$40 billion of agricultural products from the US is equivalent to two years of its earlier imports, or 30% of the total annual figure for US exports of agricultural products. This gigantic trade volume will have a profound impact on the structure of supply and demand for agricultural products. Chinese Vice-Premier Liu He said the agreement was "good for China, good for the United States, and good for the world."<sup>13</sup> According to Cheng Dawei, a professor at Renmin University in China, the agricultural agreement was "equal and mutually beneficial," and Chinese farmers and agricultural development would "gain tangible benefits."<sup>14</sup> However,

<sup>12</sup> China Council for the Promotion of International Trade: "Some are Happy While Others are Sad: Trade War Hurts Most American Farmers but Benefits Garlic Farmers. [In Chinese.] Accessed March 12, 2020. [http://www.ccpit.org/Contents/Channel\\_4114/2019/0522/1169099/content\\_1169099.htm](http://www.ccpit.org/Contents/Channel_4114/2019/0522/1169099/content_1169099.htm).

<sup>13</sup> Xinhua News Agency: "Liu He: Achieving the First Phase Economic and Trade Agreement is Beneficial to China, Beneficial to the United States, and

Beneficial to the World." [In Chinese.] Accessed March 12, 2020. [http://www.xinhuanet.com/2020-01/16/c\\_1125467119.htm](http://www.xinhuanet.com/2020-01/16/c_1125467119.htm).

<sup>14</sup> People.cn: "Equality, Mutual Benefit and Win-Win Situation—Experts' Interpretation of the First Phase Sino-US Economic and Trade Agreement. [In Chinese.] Accessed March 12, 2020. <http://world.people.com.cn/n1/2020/0116/c1002-31551739.html>.

Dr. Yu Yunhui of Lantian College in Fujian Province believes that for China, the disadvantages outweigh the benefits. The present authors believe that China and the United States are highly complementary in the field of agriculture, and are therefore natural partners in cooperation. Provided the two sides strengthen communication and coordination, with the US side not creating any complications in the process of interpreting and implementing the first phase agreement, and the Chinese side responding with reasonable, favorable and appropriate measures, the benefits of the agreement will outweigh the risks for both countries. This is because China represents an active market for food sales. Household consumption is being upgraded, and the demand for high-quality agricultural products is very strong. The signing of the first phase agreement will facilitate in-depth exchanges between the two sides, thus injecting more certainty into agricultural trade.

### **The economic and trade situation of agriculture in the two countries in the next five years**

Around the time of the Spring Festival in 2020, the COVID-19 epidemic swept China, providing an opportunity for US agricultural products to return to the Chinese market. To limit the spread of the disease, the Chinese government placed controls on the movement of residents, banned gatherings and closed down agricultural markets. Every aspect of national economic production has been seriously affected, and agriculture is no exception.

The coming of the spring equinox signals a busy season for farming, but the movement controls have seriously affected roads, railways and other freight channels. The road traffic controls allow non-local vehicles to depart from locations, but do not allow them to enter, while closures at the town and village level make roads impassable. Some railway stations are closed, without any trains arriving or departing. Under these circumstances, necessary inputs for agriculture cannot reach the countryside. Even where they can, there is still the problem of a lack of fertilizer supplies when businesses are closed due to the risk of human-to-human transmission of the virus, coupled with government regulations. With travel restrictions applying, large farms are forced to stop work because farm workers cannot be found.

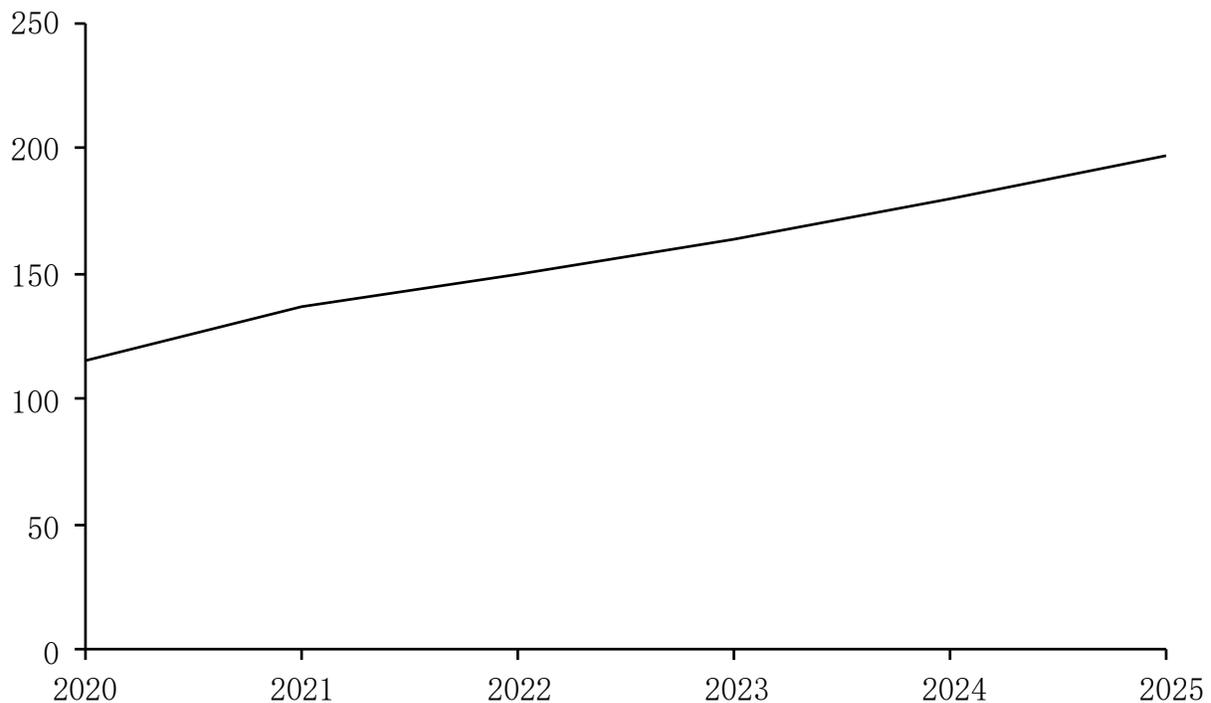
Meanwhile, if agricultural products cannot be transported out of the village, shortages may appear and vegetable prices in various places may rise. Any rumor along these lines, together with popular alarm, may provoke panic buying of daily necessities including rice, cooking oil and condiments, thus further exacerbating the shortages. If the epidemic cannot be controlled within a short period, and if the pressure of spring planting cannot be resolved in a timely manner, the spring sowing of soybeans, corn and rice, and even of cotton in May will be

affected. Demand for agricultural products in China will remain constant and may even increase, but domestic production capacity has been restricted by the epidemic, giving the United States an opportunity to access the Chinese market. The following is an analysis of the situation regarding several important agricultural commodities, including soybeans, corn, cotton and pork. Assuming that the import prices for each of these agricultural products are similar to those in 2017, and that the increase in the amount of imports is divided equally among them, this paper presents a forecast of the import volume of agricultural products in 2020 and 2021. It also provides a forecast of the import volume from 2022 to 2025, on the basis of the average growth rate of various agricultural products in recent years.

### **Corn**

Since 2004, China has had an annual quota for corn imports of 7.2 million tons, but has normally used less than 50% of that quota. Over the last eight years, the maximum amount of corn imported has been 5.21 million tons, well below the quota limit. In 2018 China imported only 3.5 million tons of corn. In 2020 the quota of 7.2 million tons still applies. Appendix 14 of the Sino-US Trade Agreement states that "China should ensure that it does not restrict the full use of tariff quotas for wheat, rice and corn." By 2020, China is expected to have used up the 7.2 m tons of its import quota.

The United States is a big producer of genetically modified corn. After the Spring Festival, China will import large quantities of genetically modified corn for animal breeding. The reasons are as follows: first, due to the impact of the epidemic, domestic slaughterhouses cannot resume work because of the risk involved in the concentration of personnel. This will make it difficult for domestic breeding enterprises to deliver pigs, chickens, ducks and other animals for slaughter, and will result in a large additional demand for feed. Second, the road closures have created high transport costs for domestic corn, constricting supplies and raising prices. Domestic corn is not being shipped to the market in time, resulting in the current slow sales of corn and overstocking in the warehouses. Further, fresh corn kept under poor preservation conditions will rot once the temperature rises. The road closures may also have an impact on spring corn sowing, which could lead to a decline in domestic corn production. Livestock breeding companies need a lot of US genetically modified corn to replace domestic corn in animal feed, but it is debatable whether US corn can capture a larger share of the market. Even without taking the tariffs into account, US corn prices are still slightly higher than those for Ukrainian corn. In 2018, China imported 2.9 million tons of corn from Ukraine, equivalent to 40 percent of the import quota.



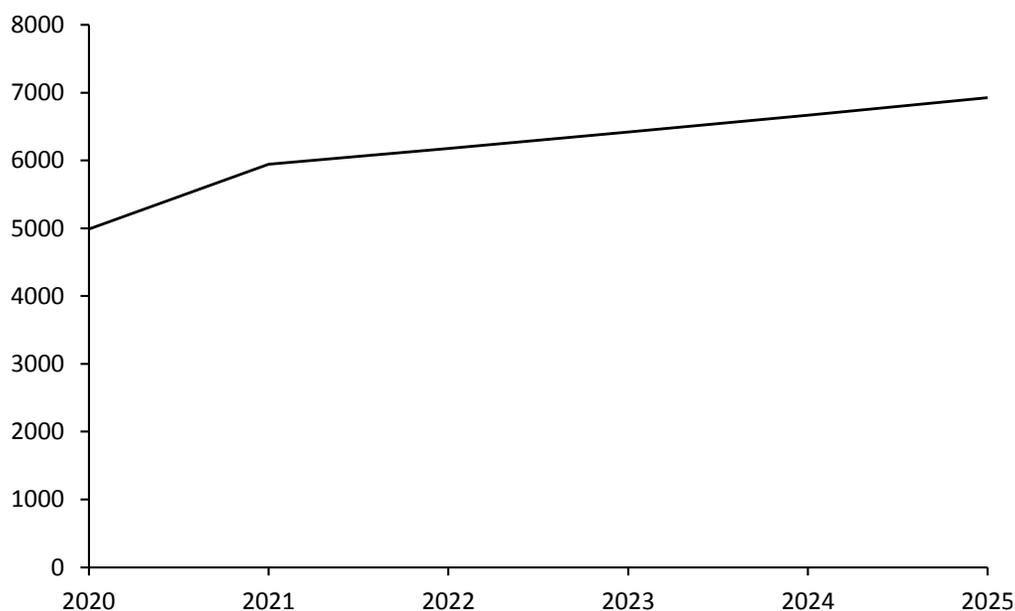
**Figure 8.** Estimates of China's imports of US corn in 2020-2025 (10,000 tons).

Figure 8 presents the authors' estimates of Chinese imports of US corn in 2020-2025. In line with the agreement on additional purchases contained in the Sino-US trade agreement, China in 2020 and 2021 will import 1.148 million tons and 1.368 million tons of US corn, respectively. Based on the average growth rate for 2015-2017, these purchases are expected to increase to 1.97 million tons by 2025, equivalent to 30% of the quota for imported corn. On the one hand, China is seeking to diversify its sources of imported corn in order to take advantage of the international food market in a safer way, in circumstances where it is difficult for the US to squeeze Ukraine's share of the corn market. On the other hand, the impact of African swine fever means that domestic demand in the livestock breeding industry is weak, and it is unlikely that a sudden demand for large quantities of imported corn will appear as in previous years.

### **Soybeans**

China's imports of US soybeans will rise rapidly now that the first phase agreement has been signed, but it will be difficult for the US market share in China to return to its 2017 level due to a sharp rise in the market share of countries such as Brazil. China's huge demand for soybeans requires imports from the United States. In 2017, China imported a total of 95.53 million tons, or \$38.6

billion, of soybeans, accounting for 31% of its total imports of agricultural products. In 2018, when tariffs were imposed on American soybeans, the cost, insurance and freight (CIF) price of Chinese imports of American soybeans rose by RMB 700 Yuan per ton on average, resulting in a 49.4% decrease in imports. Even so, China still imported 88.03 million tons of soybeans, down by 7.8% over the previous year, suggesting that the Chinese soybean market is too big for the country to rely solely on its own resources, and that China cannot yet find sources of supply to fully replace the United States. Meanwhile, the United States is the world's largest producer of soybeans, and exports nearly half of its soybean harvest. As relations between the US and China eased, China imported 3.09 million tons of US soybeans in December 2019, 44 times more than in the same period of the previous year and up from 2.56 million tons in November. Genetically modified soybeans in the United States are higher in oil content and lower in cost than non-genetically modified soybeans in China. Without tariffs, genetically modified soybeans in the United States are about RMB 400 Yuan cheaper than Brazilian soybeans per ton, making them the best choice for Chinese oil processing companies. At the same time, the amount of soybeans ready to be harvested this year will decrease as drought affects soybean planting in Mato Grosso and Paraná, Brazil's No. 1 and No. 2 soybean producing regions. To some extent, this will help the United States regain its share of the Chinese market.



**Figure 9.** Estimates of China's imports of US soybeans in 2020-2025 (10,000 tons).

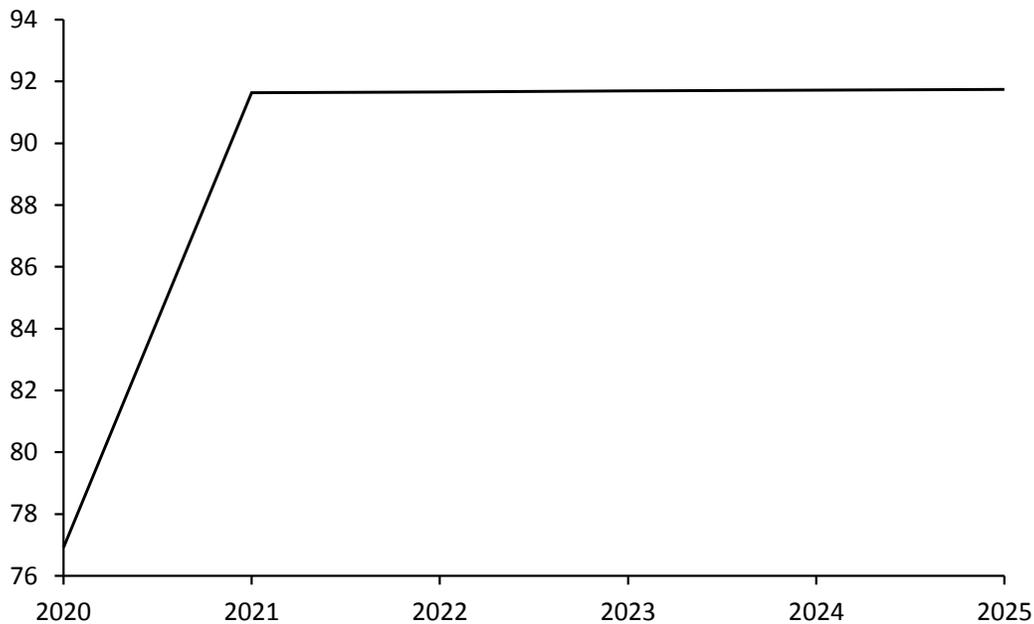
Figure 9 presents the authors' Estimates of China's imports of US soybeans in 2020-2025. According to the provisions for additional purchases in the Sino-US trade agreement, China will import 49.9 million tons and 59.45 million tons of US soybeans in 2020 and 2021, respectively. Based on the average growth rates from 2015 to 2017, China's imports of US soybeans are expected to reach 69.28 million tons in 2025, which is equivalent to China's annual imports from Brazil, its largest soybean supplier in 2018. Since 2015, China's soybean imports have stabilized at around 80 million tons. If this figure remains unchanged, the US with its competitive advantage in quantity and price will take market share from other countries. US soybean acreage is still at a historically high level, and years of bumper harvests have left excess stocks of US soybeans, allowing the country to export fifty million tons of soybeans to the Chinese market. With US soybean farmers trying to end their losses, there is also a strong desire to export soybeans to China.

### **Cotton**

Under the Sino-US economic and trade agreement, the two sides agreed to increase the volume of procurement and imports by 2020 to a level \$12.5 billion above that of 2017. The two sides also agreed to conduct procurement activities based on market prices and commercial considerations. With its high quality, and representing good value for money, US cotton will be highly competitive in the Chinese market once the tariffs are removed. This

will be a win-win situation for both China and the United States. China has a complete textile and apparel industry chain, and with American cotton in sufficient supply at an appropriate price, Chinese textile manufacturers will be able to fulfil clothing orders at high speed while maintaining superior quality. This will allow China to restore its competitiveness with South-East Asian countries that have lower labor costs. Meanwhile, the United States is the world's largest importer of textiles and clothing, as well as being the number one target market for China's textile and apparel firms. Cheap, high-quality clothing made in China is also a good thing for American consumers.

Figure 10 presents the authors' estimates of China's imports of US cotton in 2020-2025. According to the provisions for additional purchases in the Sino-US trade agreement, China will import 750,000 and 920,000 tons of US cotton in 2020 and 2021, respectively. Based on the average growth rate from 2015 to 2017, China's imports of US cotton are expected to remain at about 920,000 tons in 2025. The reason is that China's cotton imports are subject to quota restrictions. In recent years, China's cotton import quota, plus its sliding tariff quota, has amounted to about 1.7 million tons. Taking the pattern of cotton imports in 2018 as a basis, some 750,000 tons of cotton will be imported from the United States in 2020, just enough to use up the cotton quota. In 2021, some of the state-owned cotton textile enterprises may import American instead of Australian cotton, given the small differences in their quality and price, in order to fulfill the additional purchases required under the first phase agreement that ended the Sino-US trade friction.



**Figure 10.** Estimates of China's imports of US cotton in 2020-2025 (10,000 tons).

One of the conditions of this agreement was that the cotton import quota would not change. Subject to the quota restrictions, the demand for American cotton in the Chinese market will not increase after 2022.

### ***Pork and pork by-products***

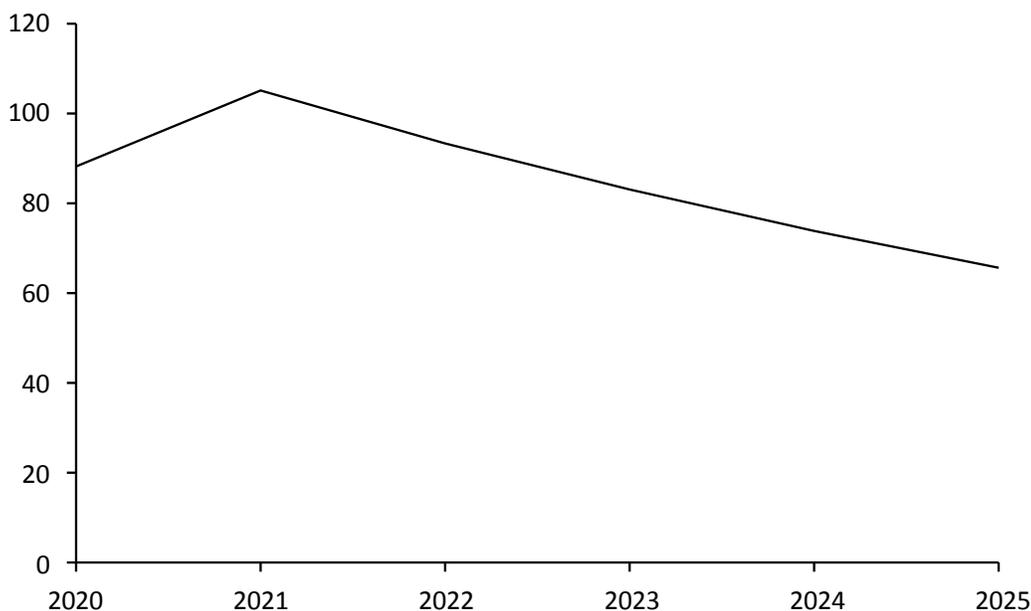
Pork is a key consumer product in China. Under the impact of African swine fever, the country's pork production capacity has dropped significantly and the price has kept going up. In 2018 Chinese pork consumption amounted to about 54 million tons. In 2019 pork production dropped to about 39 million tons, while imports amounted to only about 2 million tons. Assuming that the demand for pork by Chinese consumers remains unchanged, there will be a pork deficit of around 13 million tons. Since the signing of the first phase Sino-US economic and trade agreement, American pork has made a smooth entry into the Chinese market. The American pork is low in price and high in quality, with a CIF price of about RMB 24 Yuan per kg, while the price in China's various regions starts at RMB 45 Yuan per kg. Pork imports from the United States will help ease the soaring price of pork in China, but can do no more than to moderate the price increases. In 2017 China imported only 580,000 tons of US pork and pork by-products, with the number dropping to 260,000 tons in 2018. China's deficit of 13 million tons of pork is equivalent to an entire year of US pork output. The signing of the first phase Sino-US economic and trade agreement will aid in the expansion of US pork production, with pig heads, feet,

tails and offal sold to the Chinese market and resulting in more gains for US pig farmers.

Figure 11 presents the authors' estimates of China's imports of US pork and pork by-products in 2020-2025 (10,000 tons). According to the agreement between China and the US for additional purchases, China will import 880,000 and 1.05 million tons of US pork and pork by-products in 2020 and 2021 respectively. Nevertheless, data from 2015-2017 show that although China's imports of US pork and related by-products in 2017 increased by 171.4% over the 2015 level, there was in fact a falling trend compared to the imports in 2016. Based on the decline registered from 2016 to 2017, China's imports of US pork and related by-products will drop to 656,000 tons, that is, back to the amount recorded in 2016. The reason is that China has the largest stock of live pigs in the world, and the gap between the demand and supply of pork that has emerged because of African swine fever is very large. China has increased its live pig production capacity in recent years, and over the next few years this is expected to reduce the gap in the domestic market. Imported pork and pork by-products, however, are subject to more stringent regulations. Some US pork suppliers may fail to meet the relevant import conditions, and this could result in a decline in the quantity of pork imports.

### **3.2. Impacts of the First Phase Agreement on China's Agriculture and Market Demand**

Due to limited space here, we will only briefly present the



**Figure 11.** Estimates of China's imports of US pork and its by-products in 2020-2025 (10,000 tons).

following four points.

1) The signing of the first phase Sino-US economic and trade agreement will have both advantages and disadvantages for the development of Chinese agriculture. Its positive significance lies in easing Sino-US trade friction and stabilizing the bilateral trade in agricultural products. This trade between China and the United States acts as the foundation for cooperation and exchange in agricultural science and technological innovation, as well as in developing the system of agricultural market management. China and the United States have great potential for cooperation in agriculture. Agriculture and the broader rural sector are weak points in China's development, while American agriculture is more advanced in many respects and for its Chinese counterpart, could serve as a reference. Meanwhile the Chinese government, if it is to prevent a deepening of the Sino-US trade friction and alter the persistently unfavorable position (including a trade deficit) of China's agricultural products, needs to perform well in the following areas. First, China should adhere to the fundamental principle of "putting agriculture first," and should unswervingly transform China's traditional agricultural model, that used to rely on the weather in order to provide food, into a modern agricultural model that relies on capital and technology while demanding profitable operation. This means setting out on the road of intensified, environmentally sound and highly efficient agriculture. Second, China should strengthen supply-side reforms in the agricultural sphere, optimize the scientific allocation of

agricultural resources, and reduce instances of inefficient and low-quality supply, so as to resolve the "difficulty of adjusting agricultural structure" and the "difficulty of increasing farmers' incomes." Third, China should implement regional-based strategies for developing modern agriculture, learning from the agricultural development experiences of advanced countries and applying these lessons in line with the regional advantages of eastern, central and western China. Fourth, cooperation with other countries, especially developing countries, should be strengthened so as to build a reliable and flexible model of international cooperation in agriculture.

2) With the signing of the first-stage trade agreement between China and the United States, China is required to increase its imports of agricultural products from the United States. The people will have more choices, and their diverse consumption needs will be met. At the same time, repressed consumer demand will be met as the COVID-19 epidemic comes to an end, and the Chinese consumer market will enter a long period of growth. The restaurant industry will see a "small upsurge" of consumption. The demand for meat will rise, and the reduction in the tariff on US pork will to some extent ease the tension between supply and demand in the Chinese market for pork products. This in turn will act as a stimulus to the entire meat industry; Chinese pig-breeders will expand their farms, demand for soybeans will increase, and American soybean producers will return to the Chinese market, using their price advantages to compete for market share. The Spring Festival, the peak season for purchases in the

apparel market, will be postponed until after the end of the epidemic, but as demand finally recovers, further declines in the US cotton price will cause Chinese imports of American cotton to expand.

- 3) With the signing of the first-stage trade agreement between China and the United States, the issue of importing genetically modified agricultural products and related by-products from the United States needs to be properly addressed. The Sino-US trade agreement stipulates:

When additional information has been submitted to the NBC [National Biosafety Committee] by an applicant, [China shall] ensure that the NBC will meet as soon as possible and as often as necessary thereafter in order to finalize the NBC's review of the application; and convene at least two NBC meetings per year, and increase, depending on the number of applications, the frequency of the NBC meetings as much as necessary. . . . China shall establish an authorization period of at least five years for any agricultural biotechnology product. China shall, within 12 months of the date of entry into force of this agreement, establish and make public a simplified, predictable, science- and risk-based, and efficient safety-assessment procedure for approval of food ingredients derived from genetically modified microorganisms.<sup>15</sup>

The agreement also requires that

China shall accept applications for agricultural biotechnology product approvals on an on-going, year-round basis. . . . and not request information unnecessary for assessing the safety of a product for their intended use; and for any product that passes China's safety evaluation, make the administrative decision of approval and issue a biosafety certificate within 20 working days of conclusion of the NBC meeting.<sup>16</sup>

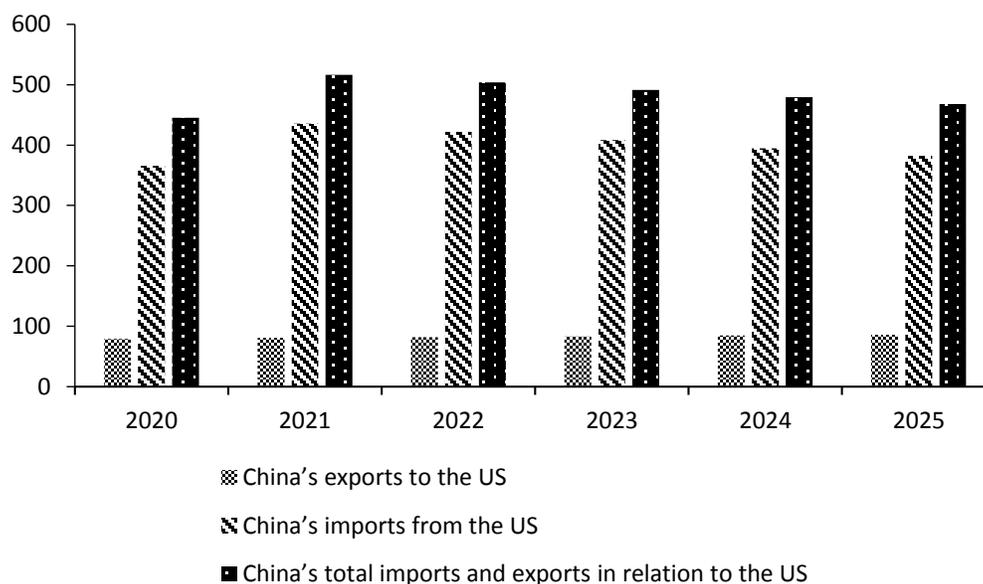
To this end, the National Health Commission of China needs to organize experts from relevant departments, such as the Chinese Academy of Sciences, the PLA Academy of Military Science, and the Chinese Center for Disease Control and Prevention, to set up a national

Genetically Modified Products Safety Assessment Committee, and to track and evaluate the composition, toxicity and environmental impact of genetically modified products. At the same time, in order to convince the US side of the assessment results, the Chinese side can employ teams of scientists from third-party international research institutions (such as those from Russia, France, Germany, etc.), to study and evaluate the safety and environmental impact of genetically modified products in the United States. After the study and assessment, the National Health Commission may authorize the Ministry of Agriculture and Rural Affairs to issue import licenses to the United States for the approved genetically modified products. Before the safety assessment report is completed for American genetically modified agricultural products, China may import the same amount of non-genetically modified products from the United States in order to fulfil its commitment to the United States concerning the amount of agricultural products it imports. As the prices of non-genetically modified products in the United States are relatively high, China's imports of such products help not only to adjust the structure of agricultural products in the United States, but also to promote the development of organic and environmentally sound agriculture in China. Further, these imports help protect China's farmers, agriculture and rural areas, as well as helping secure a healthy life for all humankind.

- 4) China has now to deal with the issue of the US cancelling China's MFN treatment. On February 10, 2020, the Office of the United States Trade Representative (USTR) issued a notice on the Federal Register stating that 25 economies, including China and China's Hong Kong SAR, would no longer receive WTO preferential treatment as developing countries. This is not good news for exports of Chinese agricultural products to the United States. As the Chinese economy has developed, the United States has increasingly viewed China as its No. 1 rival, and challenged it comprehensively in areas as diverse as trade and finance; science and technology; diplomacy, and military affairs. The responsibility for the friction and confrontation, unilaterally initiated by the United States, does not lie with China. The rise of China is a peaceful process aimed at achieving the common prosperity of the whole Chinese people, and advocating the building of a shared future community of humankind. China's rise has made important contributions to the development of world politics and the global economy. The United States deliberately canceled China's MFN treatment on the sole basis of its own national interests.

<sup>15</sup> Economic and Trade Agreement between the Government of the United States and the Government of the People's Republic of China, Annex 16. Accessed March 12, 2020.

<sup>16</sup> Ibid.



**Figure 12.** Estimates of China's imports and exports in relation to the United States from 2020 to 2025 (100 million US dollars).

China should respond in a timely manner with comprehensive strategies, in order to avoid the predicament once faced by Japan. Now that China's MFN treatment has been ended, it will be easier for the United States to issue fines for alleged violations by Chinese companies. Under the WTO rules to date, a different standard has been set for developing countries and regions, requiring investigators to terminate their inquiries into tariff provisions if the subsidy involved is less than 2 percent. To mitigate the adverse effects of this US move, the Chinese government will need to make a thorough study of its agricultural exports to the United States, determining the sectors that will be worst affected and whether there are any alternative export partners.

This paper predicts that in the years from 2020 to 2025, the total volume of agricultural trade between China and the United States will first increase and then decline. China's imports can be expected to rise in 2021 and 2022, since along with the additional purchases stipulated in the first phase Sino-US trade agreement (Figure 12), these imports make up the bulk of the total trade turnover. With the agreed additional purchases, China's total imports and exports of agricultural products to and from the United States will reach 50.4 billion US dollars in 2022. The year 2022 will be a turning point. If China's national interests are to be protected, diversified imports represent an inevitable trend, and will allow China to reduce its degree of dependence on the United States. The US, however, will continue seeking to limit China's rise, so that sooner

or later trade frictions with China will again emerge and affect the trade in agricultural products. During the intervening period, China will adjust its agro-industrial structures and pursue a path of developing multilateral agricultural trade. Based on the trend in the trade frictions between 2013 and 2015, China's total agricultural exports and imports in relation to the United States will fall to \$46.8 billion by 2025. At the same time, some of the Chinese agricultural and sideline products that are exported to the United States have been affected by the cancellation of MFN treatment and by the COVID-19 virus; together these will certainly reduce the volume of exports to the United States in the near future. Exports to the United States of vegetables and aquatic products, to cite two examples, are expected to decline rapidly over the next few years.

In this context, the Chinese government needs to guide and assist the agro-industrial sectors that are seriously affected, helping them adjust their production structures so as to increase the output of agricultural goods that are in short supply among the country's population. These sectors should be supported in making the shift from an export-oriented model to a "domestic demand oriented" production structure, and aided in gradually reducing the dependence on the United States that has been a feature of China's agricultural export trade. Micro-enterprises involved in exporting to the US should strengthen their study of international trade rules, and learn to protect their interests in a precise manner. In line with the national strategic principle, they should act promptly to adjust

their production and operation plans as well as the scope of their trade with the United States.

It is important to note that with the global outbreak of the COVID-19 viral disease, which is bound to affect global supplies of agricultural products, China needs to formulate scientific plans for domestic food production. It also needs to attend in advance to the storage of the main grains and of some other important agricultural products, so as to be able to deal with international food crises and price fluctuations. The capacity for domestic production of certain agricultural products in short supply, such as soybeans, pork etc., should be strengthened, and the structures related to a number of agricultural and sideline products should be adjusted. Taking into account the likely trend in the next few years, the current international standard of 17% should no longer be accepted as the safety warning line for China's grain stock/consumption ratio. Rather, a set of stricter standards should be established in the light of current national and international conditions, so as to respond to market fluctuations and unknown risks, and to ensure long-term domestic food security.

## CONCLUSIONS

Over the 40 years of China's reform and opening-up, Sino-US trade has experienced both advances and reversals. The two sides have different social systems, values and cultural traditions, and in some periods there have been frictions and conflicts. However, the two countries have highly complementary economic structures, their national interests are profoundly integrated, and their economic and trade relations are close. At various times in the past these circumstances have allowed the two countries to strive to find common ground, to grasp opportunities for business cooperation, and to shelve differences in the interests of mutual benefits and win-win outcomes.

History has proved that overall, China and the United States are mutually beneficial, win-win partners rather than opponents in a zero-sum game. It is hoped that the US government can meet the Chinese people halfway, view global economic development with the vision appropriate to a world power, handle the trade frictions in proper fashion, and safeguard the mutual advantages that flow from good relations between the two countries. If frictions such as those examined in this text continue to develop in the area of agricultural trade, this will harm the agricultural development of China and the United States, and will be even more detrimental to sound development and cooperation in world agriculture.

China is still the most dynamic developing country in the world, and the United States is the world's largest developed country. People all over the world hope that the two sides will consciously assume the responsibilities and obligations of major powers and return to the normal path

of the existing WTO agreement. This is necessary to eliminate the negative effects of trade frictions, to let more countries share the fruits of China-US cooperation, and to allow world agricultural security and the price stability of agricultural products to be achieved.

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