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The Possibility of World Pork Price Surge Originating from China

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INTRODUCTION

China is the biggest importer in the world pork market. Nearly 20% of pork exports in the world go to China.¹ Thus, China's domestic supply-demand condition of pork provides significant impacts on the world pork price. This paper surveys the recent situation of China's hog raising industry, and points out an increasing risk of surge in world pork price.

OUTBREAK OF AFRICAN SWINE FEVER

One of the biggest concerns in China's hog raising industry is the spread of African swine fever (ASF). The ASF virus is highly infectious and, once infected, a lethality rate is quite high (almost 100%). The first case of ASF-infection appeared in a pig farm in Liaoning Province on August 3, 2018. Since then, ASF has been spreading at an extremely high speed. Only within nine months, ASF permeated to all of the provinces, autonomous districts, and direct-controlled cities in China². Now, ASF is spreading to China's neighboring countries such as Cambodia and Vietnam.

In developed countries, pig farmers are obliged to report to the government if they find any suspicious case of ASF infection. Then, if infection is verified, all the pigs in the farm should be immediately culled (buried in the ground or cremated, in order to exterminate the virus) and the government pays compensation money to the farmer. While China also has a similar system, the coverage of the government's compensation is often insufficient. As a result, a farmer who finds a suspicious case in his (or her) pig farm tends to conceal the fact and quickly ships his (or her) pigs to a slaughterhouse or other pig farmers. This is alleged to be one of the major reasons for this high-speed spread of ASF in China.

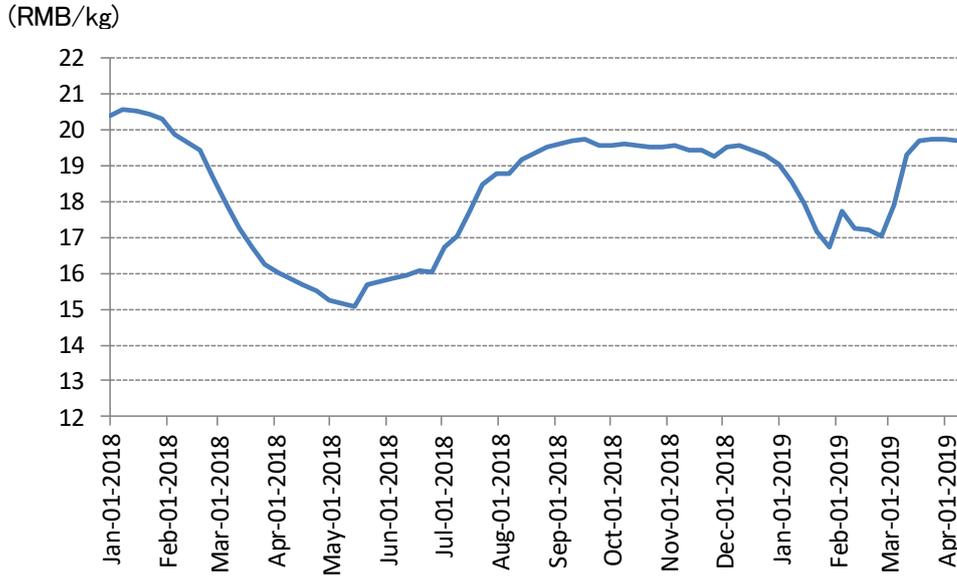
The ASF virus has already strayed into pork products such as sausage and ham in China³. By bringing these products, tourists also accelerate the spread of ASF. Those who bring pork products are required to undergo animal quarantine inspection if they cross the national border. However, because of the Chinese tourists' lack of consciousness of the law, this rule is sometimes ineffective in preventing further spread of the ASF virus⁴.

Pig price

Figure 1 shows the pig price movement in 2018 and 2019. As the countermeasure to the US's tariff increase for aluminum and steel, the Chinese government increased tariff for US pork import from 12 %

to 37 % on April 2, 2018. With a nearly-two-month time lag, the pig price started increasing. On July 6, 2018, the Chinese government raised the tariff rate to 62%. This accelerated pork price increase.

Figure 1 Pig carcass price in China



Source: Ministry of Agriculture and Rural Affairs of the People’s Republic of China.

Then, the news of the outbreak of the ASF shocked pig farmers in China. Some pessimistic farmers gave up raising pigs anymore and shipped all the pigs (including sows) to slaughterhouses. As a result, pork supply in the market increased and, accordingly, the pork price turned to be on a downward trend in September in 2018. Slaughtering sows inevitably sacrifices the reproduction of pigs (usually, a sow gives birth twice a year). With a 6-month time lag, the pig price hit the bottom in February , 2019. While pig price has been leveling off since March in 2019, as will be discussed in the following sections, the authors anticipate further increase in the price of pigs in the near future based on the prolongation of the ASF problem.

The total number of sows

The Division of Foreign Agriculture Service (FAS) in the United States Department of Agriculture is one of the most popular data sources in the international market of agricultural commodities. The FAS provides its estimates on the total number of sows in Chinese farms for every beginning of the calendar year. In addition, the Ministry of Agriculture and Rural Affairs of the People’s Republic of China (MOA) provides monthly data on the total number of sows in Chinese farms. A limitation of the MOA’s data is that the MOA does not provide the absolute number of sows. Instead, the MOA provides percentage change of the total number of sows compared with the previous month. By combining two data sources, the authors prepared the total number of sows for each month as shown in Figure 2. As can be seen, the total number of sows has been declining sharply after the outbreak of ASF.

(million heads) **Figure 2 Number of sows in China**



Source: Calculated by authors using data from the US Department of Agriculture's Division of Foreign Agriculture Service and Ministry of Agriculture and Rural Affairs of the People's Republic of China

The future of China's pork market

The FAS also provides its estimates on the total supply, demand, and imports for China's pork market as shown in Table 1. According to the FAS's projection, the total pork production and consumption will decline by 10.2 % and 8.8 % between 2018 and 2019. Considering that China's pork price is expected to be at a high level in 2019, it is reasonable to expect a decline in pork consumption. Still, the authors consider that such a sharp decline of 8.8 % is unrealistic because consumers are unlikely to change their eating habits easily.

Table 1 China's supply-demand condition for pork

	(thousand ton)							
	2012	2013	2014	2015	2016	2017	2018	2019*
Production	54,568	56,318	58,346	56,589	54,379	54,644	54,168	48,630
Consumption	55,477	57,243	59,177	57,784	56,798	56,519	55,949	51,045
Imports	1,144	1,169	1,108	1,426	2,610	2,083	1,984	2,575

Note: Figures for 2019 are a projection by the US Department of Agriculture's Division of Foreign Agriculture Service.

Source: Foreign Agriculture Service, *Livestock and Poultry: World Markets and Trade*, April 9, 2019.

It should be useful to consider an artificial case that total pork production declines 10.2% as the FAS projects and the total consumption remains at the same level of 2018. In this case, China needs to import 7.5 million tons of pork. This is almost equivalent to 90 % of the total world pork exports in 2018. Of course, this is an extreme case. But we should be aware of the possibility that China's pork imports cause unseen turbulence in the world pork market.

In addition, ASF is spreading at a high speed in China's neighboring countries beyond expectation. China can be the eye of a storm in the global pork market in this sense, too.

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¹ For 2018, the United States Department of Agriculture (USDA) estimates the total world pork exports as 8.8 million tons (carcass weight equivalent). Among them, China imported 1.9 million tons. Further Details of the USDA's estimates are available at Foreign Agriculture Service, Livestock and Poultry: World Markets and Trade, April 9, 2019.

² On April 23, 2019, the ASF-infected pigs were found in Hainan Province, which had been the only ASF-free province in China.

³ The ASF virus is not transferable from the pig to the human. Thus, even if a consumer eats pork products contaminated with the ASF virus, he (or she) will not be infected.

⁴ Japanese authorities unearthed 42,000 cases of illegal meat product imports by Chinese visitors in 2018. This number is 1.5 times higher than that in 2015.