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Ag Decision Maker

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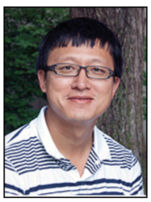 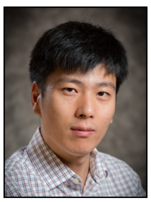 

Key agricultural products in U.S.-China trade disputes: the proportional, the significant, and the substitutable

By Minghao Li, postdoctoral researcher, Center for Agricultural and Rural Development; Wendong Zhang, extension economist, 515-294-2536, wdzhang@iastate.edu; Chad Hart, extension economist, 515-294-9911, chart@iastate.edu; Iowa State University

Trade issues are boiling over between the United States and China. At the beginning of 2018, the United States imposed tariffs on imported solar panels and washing machines, and China responded by initiating an anti-dumping investigation into U.S. sorghum. On March 8th, President Trump announced steel and aluminum tariffs with China being one of the primary targets. The tariffs affect $2.8 billion worth of Chinese imports. Within two weeks, China responded by announcing a list of 128 U.S. products that are the targets of retaliatory tariffs (The Chinese Ministry of Commerce, 2018), including notably pork products and ethanol. On April 3rd, the U.S. announced a potential list of tariffs for roughly 1,300 products, with a trade value of $50 billion. The following day, China announced a potential list of tariffs for over 100 products, including soybeans, cotton, and beef, with a rough trade value of $50 billion. For both the U.S. and China, the proposed tariffs will take effect in a few weeks. In response, President Trump is now considering targeting $100 billion of Chinese products for additional tariffs and the Chinese government has issued statements indicating they will respond to any actions in a proportional way.

The United States exports over $24.1 billion worth of agricultural and related products to China every year (USDA FAS GATS), thus it is difficult to overestimate the importance of the trade relationship. Stakeholders in U.S. agriculture are nervously speculating China's next move, fearing that agricultural products will be the target for additional retaliatory measures. The most feared outcome is that the proposed trade barriers against U.S. soybeans, which currently account for 66 percent of the total U.S. agricultural exports to China (USDA FAS GATS), will be implemented. In this article, we hope to shed light on the key products that are or could be involved in any potential action.

China's three principles in agricultural trade retaliations

By reviewing China's previous agricultural trade retaliation cases, we find that China's approach to trade disputes can be summarized in three principles (Li, Zhang and Hart 2018):

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Handbook updates

For those of you subscribing to the handbook, the following updates are included.

Delayed and Prevented Planting Provisions – A1-57 (5 pages)

Historical County Farmland Values – C2-72 (10 pages)

Farmland Value Survey (Realtors Land Institute) – C2-75 (2 pages)

Please add these files to your handbook and remove the out-of-date material.

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Inside . . .

Iowa State University
Extension and Outreach

Ag Decision Maker is compiled by extension ag economists
Ann Johanns
extension program specialist
aholste@iastate.edu, 641-732-5574

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1. A financially proportional response
2. Targeting products that are substitutable
3. Targeting products that inflict economic and political cost.

In past disputes, China tended to target agricultural commodities with trade flows comparable to U.S. targets in order to send a clear message. At the same time, China has carefully avoided escalation by choosing targets with a smaller trade value. Furthermore, China has chosen commodities that are easily substitutable across products and across sources. This is partly made possible by the Chinese government's active pursuit of import diversification. One goal of retaliatory tariffs is to inflict economic loss on politically influential interest groups, in hopes that they will in turn put political pressure on the opposing government to ease the trade restrictions. China has chosen agricultural products in part because they see the affected U.S. agricultural producers as politically powerful.

Significance and substitutability of U.S. ag exports from the Chinese perspective

The data in Table 1 measure the importance and substitutability of top agricultural and related products that the United States currently exports to China. The *proportional response principle* suggests that China will choose commodities with proportional trade value. By the *substitutability principle*, China is more likely to choose commodities with lower import share in China's domestic consumption, lower U.S. share in China's total import demand, and lower China's share in total global import. So far five of the top ten U.S. agricultural exports to China have been involved in the trade disputes (sorghum (coarse grains), pork, soybeans, cotton, and wheat.)

The information in Table 1 provides a starting point to measure importance and substitutability. To more precisely measure importance, we must take into account the potential impacts on producers' profit margins, political importance (Are producers concentrated in important political districts?), and symbolic importance

Table 1. The importance and substitutability of top 10 U.S. agricultural product exports to China

	Importance to the U.S.		Substitutability for China			
	China-U.S. trade value in 2017 ($ billion)	China's share in US exports	Import share in China's consumption	U.S. share in China's total import demand	China's share in global total imports	Top exporters other than the U.S.
Soybeans	12.36	57.3%	87.5%	41.7%	63.1%	Brazil (45%) Argentina (9.5%)
Forest Products	3.20	33.7%		13.0%	15.2%	Russia (18.8%) New Zealand (7.9%)
Fish Products	1.25	18.5%		13.5%	5.7%	Russia (19.6%) Canada (8.8%)
Cotton	0.98	16.7%	12.8%	33.1%	17.2%	Australia (32.5%) India (12.1%)
Hides & Skins	0.95	50.1%		13.6%	21.9%	Brazil (9.7%) Australia (7.6%)
Coarse Grains (ex. corn)	0.84	78.1%	62.4%	39.8%	31.8%	Australia (35.3%) Canada (8.5%)
Pork & Pork Products	0.66	10.2%	3.0%	11.9%	14.5%	Germany (18.2%) Spain (12.5%)
Dairy Products	0.58	10.7%	0.8% (Liquid) 33.0% (Powder)	5.1%	6.8%	New Zealand (33%) Netherlands (17.2%)
Wheat	0.35	5.7%	3.4%	25.6%	2.4%	Australia (40.4%) Canada (26.9%)
Hay	0.34	27.3%		67.9%	26.5%	Australia (14.0%) Canada (3.2%)

Source: USDA FAS GATS, UN Comtrade data, and authors' calculations.

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(Has the commodity received recent media attention or was the commodity recently highlighted in previous trade deals?). The substitutability information in this table is mainly concerned with substitution across source countries for Chinese imports. To better measure substitutability, we also have to consider substitution across products as well as nuances such as China's trade relationship with competing suppliers and the seasonality of products, etc.

Why soybeans were targeted?

The three principles outlined help shed light on China's recent moves. That China did not choose soybeans as the target of retaliation for the steel and aluminum tariff is not surprising in light of the "proportional response" principle: while China exports $2.8 billion of steel and aluminum products to the United States, it imports more than $12 billion in soybeans from the United States. But with the additional tariffs from the U.S. targeting $50 billion of Chinese products, a retaliation using soybeans had to be on the table to reach a proportional response. In fact, since the total value of U.S. agricultural exports to China (including related products) is $24.1 billion, most of the U.S. agricultural exports to China would be needed to achieve the $50 billion response.

Currently, China relies on soybeans from Brazil and U.S. to supply about 90 percent of its soybean consumption, predominately for feed. The sheer volume of Chinese soybean imports makes it more difficult to displace than other products. However, if needed to, China could shift some significant share of imports to other countries such as Brazil and Argentina, produce more soybeans domestically, and look to replace soybeans with other products.

Reviewing the list of top 10 U.S. agricultural product exports to China, it becomes obvious that products outside of the top 10, unless combined, do not have large enough trade flows to be a major part of a proportional response. China is likely basing retaliations on the three principles outlined in this article, exploring areas where there is a high share of Chinese imports in total U.S. exports, a low percentage of Chinese imports from the United States when compared to other countries, and a low percentage of Chinese imports in world exports.

Trade relations worldwide are in a period of flux right now. The trade-dependent U.S. agriculture system has been dragged into the trade drama before, and unfortunately is being targeted again. The data in Table 1 highlights why soybeans are the center of discussion when it comes to U.S.-China agricultural trade. The crop represents the majority of agricultural trade between the countries. The tariffs have already impacted agricultural markets, driving prices lower on the prospects of reduced trade flows. With the delayed implementation of the tariffs from the $50 billion announcements on both sides, there is some time for trade negotiations to reduce and/or eliminate these tariffs. But both sides will need to be at the negotiating table.

For more information

China, People's Republic of, Ministry of Commerce (MOC). 2018. Announcement for the U.S. 232 measure on imported steel and aluminum and call for comments on China's response.(www.mofcom.gov.cn/article/au/ao/201803/20180302722670.shtml)

Li, M., W. Zhang, and C. Hart. 2018. What Can We Learn about U.S.-China Trade Disputes from China's Past Trade Retaliations? CARD Policy Briefs. March 2018, No. 18-PB 22.(www.card.iastate.edu/products/publications/pdf/18pb22.pdf)

Data sources

United States Department of Agriculture (USDA) Foreign Agricultural Service (FAS) Global Agricultural Trade System (GATS),(https://apps.fas.usda.gov/gats/default.aspx)

United Nations (UN) Comtrade Database, (https://comtrade.un.org/data/)

United States Census Bureau, USA Trade Online, (https://usatrade.census.gov/)

A look at long-term corn and soybean profitability

By Don Hofstrand, retired extension specialist, agdm@iastate.edu

The profitability of corn production over the years has been marked by spikes of high profitability interspersed with long periods of low and flat profitability. The income, costs, and net returns per acre for a hypothetical Iowa tenant corn farmer from the year 2000 to the present show this trend in Figure 1.

During periods of high profitability, there is often an optimism that we are entering a new era of farming where high levels of profitability will go on forever. The optimism is usually short-lived. In their enthusiasm, farmers over-produce, resulting in declining corn prices. This fulfills the old grain trader's proverb that "high prices lead to low prices".

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