China as the Leading Trade Partner of U.S. Agriculture

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Chandler, Arizona     November 1, 2018
A Quick Introduction about myself

– Grown up in a rural county in NE China
– Attended college in Shanghai and Hong Kong
– Ph.D. in Ag Econ in 2015 from Ohio State
– 2012 summer intern at USDA-ERS on farm economy and farmland values
– Academic Vice President, Iowa Chapter ASFMRA
– Research and extension interests:
  land value/ownership [www.card.iastate.edu/farmland/](http://www.card.iastate.edu/farmland/)
  agriculture and the environment
China Ag center [www.card.iastate.edu/china](http://www.card.iastate.edu/china)
China’s Provinces

My Hometown
Mainland China vs. US
My hometown: Shenxian, Shandong Province

Greenhouse – plastic film - Shandong Province
Trump, China's Xi may meet at G20 summit: White House adviser
Why Care About China?

Reason 1: China is a huge market for US

Source: Choices
2017 Q2 Issue
US holds a large and consistent ag trade surplus with China

US Ag Trade with China 1998-2018
(Jan to April 2018 only)
Percentage of U.S. Agricultural Production Exported

- **Walnuts**: 79%
- **Cotton**: 76%
- **Almonds**: 67%
- **Pistachios**: 62%
- **Sorghum**: 59%
- **Rice**: 55%
- **Soybeans**: 62%
- **Wheat**: 46%
- **Grapes**: 36%
- **Pork**: 21%
- **Corn**: 21%
- **Cherries**: 19%
- **Apples**: 18%
- **Poultry**: 16%
- **Dairy**: 15%
- **Beef**: 10%

> 20%
Overall U.S. farmers export more than 20% of what they produce

*Including ethanol, DDGS, and HFCS exports

Source: USDA-Foreign Agricultural Service, Production, Supply and Distribution System
Reference years: Marketing Year 2015/16 - 2017/18

United States Department of Agriculture
Foreign Agricultural Service
Why Care About China?

Reason 2: Ag is comparative advantage for US, not for China

Figure 1. Number of farmers in Chinese provinces compared to Iowa

- **US**: 3.2 million
- **Iowa**: 0.13 million
- **China**: 270 million

**Number of Farmers (Iowa=1)**
- < 10
- 11 - 50
- 51 - 80
- 81 - 100
- > 100

Figure 2. Crop land per farmer in China in acres

- **US**: 120 acres
- **Iowa**: 200 acres
- **China**: 1.4 acres

**Cropland Per Farmer (Acres)**
- < 1
- 1 - 1.5
- 1.5 - 2
- 2 - 3
- > 3

Because crop land per farmer is so small in China, using Iowa as the unit here would create too many decimal points. We use acres instead.

Navigating the Chinese agricultural economy through the lens of Iowa

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

- **Average Farm Size**
  - **China**: 2 Acres
  - **US**: > 400 Acres
Chinese land is owned by collectives
(Contract Right Certificate)

China’s New Rural Land Transfer Reform

2016:
77 million acres (35% of cropland) transferred;
2007: 5%

Among them: 30% to co-ops or corps; 80% non-grain production

China Corn Yield

China Soybean Yield

2015 Soybean Yield

US: 48 Bu/acre  
Iowa: 56 Bu/acre  
China: 26 Bu/acre
Why Care About China?
Reason 3: Chinese People Are Getting Richer, and will need more protein and better environment
What the New Middle Class Want?

Africa: More Cereal
India: More Dairy
China: More of Everything
China Leads High-Speed Rail in the World
China inaugurates the Hong Kong-Zhuhai-Macau Bridge, the world’s longest sea-crossing bridge

20-mile long; US$15 billion, 6 years to build

How does China’s Greater Bay Area compare to its rivals?*

<table>
<thead>
<tr>
<th>Area</th>
<th>Population</th>
<th>Total GDP (billion)</th>
<th>GDP per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>China’s Greater Bay Area</td>
<td>68 million</td>
<td>$1,390</td>
<td>$20,000</td>
</tr>
<tr>
<td>Tokyo Bay Area</td>
<td>44 million</td>
<td>$1,860</td>
<td>$42,000</td>
</tr>
<tr>
<td>New York Bay Area</td>
<td>20 million</td>
<td>$1,680</td>
<td>$82,000</td>
</tr>
<tr>
<td>San Francisco Bay Area</td>
<td>7.7 million</td>
<td>$780</td>
<td>$101,000</td>
</tr>
</tbody>
</table>

*All data is for 2018, except Tokyo which is 2014.

Source: Hong Kong Legislative Council
Urban Chinese prefer to travel, stay connected, buy protein rich food, durable goods & recreation.
**Why Care About China?**

**Reason 4: China will retaliate, diversify and find other suppliers if possible**

<table>
<thead>
<tr>
<th>Commodity (2016 value of China ag imports)</th>
<th>USA</th>
<th>Brazil</th>
<th>Europe</th>
<th>Australia</th>
<th>Argentina or Uruguay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean ($34.4 Bil.)</td>
<td>38%</td>
<td>47%</td>
<td></td>
<td></td>
<td>A-10%</td>
</tr>
<tr>
<td>(China increased production by 9% in 2018)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pork ($2.32 Bil.)</td>
<td>13%</td>
<td>50%</td>
<td></td>
<td></td>
<td>Canada: 11%</td>
</tr>
<tr>
<td>Ethanol ($0.38 Bil.)</td>
<td>70%</td>
<td>11%</td>
<td></td>
<td></td>
<td>Pakistan 15%</td>
</tr>
<tr>
<td>Beef ($2.42 Bil.)</td>
<td>0%</td>
<td>22%</td>
<td>28%</td>
<td></td>
<td>U-21%</td>
</tr>
<tr>
<td>Poultry ($1.11 Bil.)</td>
<td>79%</td>
<td></td>
<td></td>
<td></td>
<td>A-9%</td>
</tr>
<tr>
<td>Corn ($0.87 Bil.)</td>
<td>10%</td>
<td></td>
<td></td>
<td></td>
<td>Ukraine: 79%</td>
</tr>
</tbody>
</table>

**China’s Ag Import Sources**

China can produce 97% of its pork, but only 15% of its soybean demand domestically. China provided about US$200/acre subsidy to increase soy production (up 9% 2018).
What Have We Learned from China’s Past Trade Retaliation Strategies?

Minghao Li, Wendong Zhang, and Chad Hart

JEL Classifications: Q17, F10
Keywords: Agricultural Commodities China Tariff Trade Retaliation

Proportional, Restrained Response

Currently, China has a huge overall trade surplus with the United States, and thus naturally prefers status quo and avoid dispute escalations. As the two cases above demonstrate, China’s retaliatory commodities with trade flows comparable to U.S. targets in order to send a clear message.

Target Products That Are Substitutable

In these two cases, China chose commodities that are easily substitutable across products and across domestic production. Half of the U.S. broiler products were chicken feet, a replaceable feed commonly used for feed and can be replaced by corn or other coarse grains. In terms of feed, China’s Feed Industry Association on Friday approved new standards for feed for pigs and chickens, lowering the protein levels in pig feed by 1.5 percentage points and those for chickens by one percentage point, the agriculture ministry said in a statement that day. It did not say when the new standards would take effect.

Inflict Economic and Political Costs

From the perspective of China’s government, the ultimate goal of retaliatory tariffs is to politically influence cost effective for U.S. producers, as is the case for broiler products and sorghum. Furthermore, the government has long recognized the political significance of the U.S. agricultural industry, why it targets U.S. agricultural exports in trade spats.
China now could produce 97% of its pork, but only <20% of its soybean

<table>
<thead>
<tr>
<th>Product</th>
<th>Domestic Production</th>
<th>Net Import</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>222 mil. Mt</td>
<td></td>
</tr>
<tr>
<td>Ethanol</td>
<td>2.7 mil. Mt</td>
<td></td>
</tr>
<tr>
<td>Soybean</td>
<td>96 mil. Mt</td>
<td>38 mil. Mt</td>
</tr>
<tr>
<td>Fluid Milk</td>
<td>38 mil. Mt</td>
<td></td>
</tr>
<tr>
<td>Milk Powder</td>
<td>2.2 mil. Mt</td>
<td></td>
</tr>
<tr>
<td>Pork</td>
<td>7.5 mil. Mt</td>
<td></td>
</tr>
<tr>
<td>Beef</td>
<td>56 mil. Mt</td>
<td></td>
</tr>
<tr>
<td>Poultry</td>
<td>13 mil. Mt</td>
<td></td>
</tr>
</tbody>
</table>
**ASF penetrates China's south**

Yunnan province is one of China's largest for pork consumption and production. Also, Japan finds ASF virus in illegally imported sausages from China.

Oct 22, 2018
US Loses Market Share as China Increases Meat Imports from the World

Source: Choices 2017 Q2 Issue
The Belt and Road Initiative creates a global infrastructure network. China uses, acquires, and builds railroads, ports, and pipelines.
Why Care About China?

Reason 5: Trade disputes with China have long-term impacts (chicken, beef)

wither pork?

Why Care About China?

Reason 6: Chinese Ag Policy Presents Future Demand that could be filled by our competitors

China’s projected corn import potential under the new 2020 E10 ethanol mandate
China cannot produce enough ethanol domestically to fulfill the 2020 E10 ethanol mandate

4th largest producer – 1 Bil gal.
- After US, Brazil and EU
- Corn ethanol 64%
- Also uses cassava, sorghum, corn stover
- Imported 225 mil. gal, mainly from U.S.
- Tariff rose from 5% to 30%

China consumes 40 bil. gal gasoline; 1 bil. gal ethanol in 2016

China sets 2020 target for nationwide ethanol use to cut corn stocks
What can Iowa farmers expect from ARC/PLC and the Trade Assistance Package in 2018?

By Alejandro Plastina, extension economist, 515-294-6160, plastina@iastate.edu and Chad Hart, extension economist, 515-294-9911, chart@iastate.edu

### Table 1. Market Facilitation Program Payment Details

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Payment Rate</th>
<th>Estimated Total Payments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>$0.01 per bushel</td>
<td>$96 million</td>
</tr>
<tr>
<td>Cotton</td>
<td>$0.06 per pound</td>
<td>$276.9 million</td>
</tr>
<tr>
<td>Dairy</td>
<td>$0.12 per hundredweight</td>
<td>$127.4 million</td>
</tr>
<tr>
<td>Pork</td>
<td>$8.00 per head</td>
<td>$290.3 million</td>
</tr>
<tr>
<td>Sorghum</td>
<td>$0.86 per bushel</td>
<td>$156.8 million</td>
</tr>
<tr>
<td>Soybeans</td>
<td>$1.65 per bushel</td>
<td>$3.63 billion</td>
</tr>
<tr>
<td>Wheat</td>
<td>$0.14 per bushel</td>
<td>$119.2 million</td>
</tr>
</tbody>
</table>

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**CNN**

*Trump administration will impose tariffs on $200 billion in Chinese goods*

By Donna Borak, Katie Lobosco and Kevin Liptak

Updated 6:53 AM ET, Tue September 18, 2018

**FINANCIAL TIMES**

*US-China trade dispute*

China retaliates against new US tariffs as trade war escalates

Beijing slaps duties of up to 10 per cent on $60bn of American imports
The Impact of the 2018 the Iowa Economy

- Overall losses in **Iowa’s Gross State Product** are of a Gross State Product of $190 billion).
- Overall losses to Iowa’s **Soybean** industry of $159 to revenue loss across all models of $545 million (Iowa industry).
- Overall losses to Iowa’s **Corn** industry of $90 to $57 loss across all models of $333 million (Iowa corn is a
- Overall losses to Iowa’s **Pork/Hog** industry of $558 revenue loss across all models of $776 million (the $ billion industry).
- A 2% drop in **Ethanol** prices resulting in approxima Iowa ethanol producers.
- Revenue losses in these industries translate into add the state. Labor income declines from the impacts to industries range from $366 to $484 million without million with federal offsets.
- Iowa **tax revenue losses** (personal income and sal million. Federal offsets would reduce tax losses to $7

**Figure 5.** Gross output (revenue) impacts for Iowa industries.
# Trade Dispute Impacts – Price Changes

<table>
<thead>
<tr>
<th>Cash Crop Prices</th>
<th>05/31/2018</th>
<th>08/15/2018</th>
<th>% Change</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>$ 3.52</td>
<td>$ 3.21</td>
<td>-8.8%</td>
<td>USDA-AMS</td>
</tr>
<tr>
<td>Soy</td>
<td>$ 9.48</td>
<td>$ 7.83</td>
<td>-17.4%</td>
<td>USDA-AMS</td>
</tr>
<tr>
<td>Ethanol</td>
<td>$ 1.41</td>
<td>$ 1.35</td>
<td>-4.3%</td>
<td>USDA-AMS</td>
</tr>
</tbody>
</table>

# Trade Dispute Impacts – Iowa Revenue Loss

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Price damage w elasticity</th>
<th>Per-unit price drop due to China trade dispute</th>
<th>Iowa production</th>
<th>Revenue loss due to China trade dispute (mil. Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>-4%</td>
<td>- $ 0.13</td>
<td>2.60 bil. bu</td>
<td>-$ 325 mil.</td>
</tr>
<tr>
<td>Soy</td>
<td>-10%</td>
<td>- $ 0.95</td>
<td>0.58 bil. bu</td>
<td>-$ 551 mil.</td>
</tr>
<tr>
<td>Ethanol</td>
<td>-2%</td>
<td>- $ 0.03</td>
<td>4.20 bil. gal.</td>
<td>-$ 105 mil.</td>
</tr>
<tr>
<td>Hog</td>
<td>-11%</td>
<td>-$8.72/cwt or -$18/head</td>
<td>43 mil.</td>
<td>-$795 mil.</td>
</tr>
</tbody>
</table>

Source: Chad Hart, Lee Schulz
Boissonaro wins Brazilian presidency
The former military officer is the latest in a global wave of far-right nationalists to surge at the ballot box.

Soybeans: Brazilian area by region*

* Source: Conab, IGC estimates

Weekly U.S. Soybean Inspections (tonnes)

Sources: Refinitiv Eikon, USDA
Will China be hurt enough to talk? Maybe...

China's economy is growing at its slowest pace since the financial crisis

By Daniel Shane, CNN Business
Updated 2:49 AM ET, Fri October 19, 2018

Chinese GDP Target: 6.5%
Impacts of trade disruptions in 2018 on global economy

Edward Balistreri, Minghao Li, Dermot Hayes, Wending Zhang

Will China be hurt enough to talk? Maybe...

Scenario 2: Tariff increases in scenario 1 and additional tariff increases between the United States and China, including the $50 billion round and the $200 billion/$60 billion round of tariff increases. The scenario reflects the current tariffs (as in October 2018).

Scenario 3: Tariff increases in scenario 1 and 2, and additional tariff increases that are scheduled to happen at the end of 2018, i.e., the U.S. tariffs on $200 billion Chinese products will increase by another 15%, and China’s retaliatory tariffs will increase by 0–15%.
Will China be hurt enough to talk? Maybe...

SHANGHAI SE COMPOSITE INDEX

S&P 500 INDEX

Data delayed at least 15 minutes, as of Oct 29 2016 07:13 BST.

ISU China Ag Center
www.card.iastate.edu/china
Will China be hurt enough to talk?

But...
Will China be hurt enough to talk?

But...

China does not want to manipulate RMB, but trade concerns de facto result in a cheaper currency which facilitates exports.
• 82% of Iowa land is debt-free
• 60% of land owned by owners 65+ years old, one-third of land owned by 75+ years old, 13% of land owned by women landowner 80+ years old
• Ownership continues to shift from sole ownership to trusts and corporations
• 53% of Iowa land rented out – mainly cash rent
• 34% of Iowa land owned by landlords with no farming experience, 23% of land owned by retired farmers who do not currently farm
• 29% of Iowa land owned primarily for family/sentimental reasons

($5 each print copy!)
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Thank You!

Wendong Zhang

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