What Does Trade Disruptions with China Mean for Iowa and US Agriculture

Wendong Zhang
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Pro-Ag Outlook Meeting
November 2018
A Quick Introduction:
Dr. Wendong Zhang

– 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
– Research and extension interests:
  land value/ownership www.card.iastate.edu/farmland/
  agriculture and the environment

China Ag center www.card.iastate.edu/china
Mainland China vs. US
My hometown: Shenxian, Shandong Province

Greenhouse – plastic film - Shandong Province
World News
October 1, 2018 / 10:14 AM / A month ago

Trump, China's Xi may meet at G20 summit: White House adviser

Bill Northey
Under Secretary of Agriculture for Farm and Foreign Agricultural Services
Incumbent
Assumed office
March 6, 2018
China enters "New Era" • Chinese Dream • Belt and Road Initiative • Xi Jinping 2030 • COE of China
The Impact of the 2018 Trade Disruptions on the Iowa Economy

- Overall losses in Iowa’s Gross State Product are calculated to be $1 to $2 billion (off of a Gross State Product of $190 billion).
- Overall losses to Iowa’s Soybean industry of $159 to $891 million, with an average revenue loss across all models of $545 million (Iowa soybeans are a $5.2 billion industry).
- Overall losses to Iowa’s Corn industry of $90 to $579 million, with an average revenue loss across all models of $333 million (Iowa corn is an $8.5 billion industry).
- Overall losses to Iowa’s Pork/Hog industry of $558 to $955 million, with an average revenue loss across all models of $776 million (the Iowa pork/hog industry is a $7.1 billion industry).
- A 2% drop in Ethanol prices resulting in approximately $105 million in lost revenues to Iowa ethanol producers.
- Revenue losses in these industries translate into additional lost labor income across the state. Labor income declines from the impacts to the corn, soybean, and hog industries range from $366 to $484 million without federal offsets and $245 to $364 million with federal offsets.
- Iowa tax revenue losses (personal income and sales taxes) range from $111 to $146 million. Federal offsets would reduce tax losses to $75 to $110 million.
## 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>
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<tr>
<td>Ethanol</td>
<td>$1.41</td>
<td>$1.35</td>
<td>-4.3%</td>
<td>USDA-AMS</td>
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## 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
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; Iowa State University

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

Table 1. Market Facilitation Program Payment Details

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China retaliates against new US tariffs as trade war escalates

Beijing slaps duties of up to 10 per cent on $60bn of American imports
**Soy Stats Worrying**

**Bolsonaro wins Brazilian presidency**

The former military officer is the latest in a global wave of far-right nationalists to surge at the ballot box.

[Source: washingtonpost.com]

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**Soybeans: Brazilian area by region**

* Source: Conab, IGE estimates

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**Brazil monthly soybean export**

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**Weekly U.S. Soybean Inspections (tonnes)**

* Source: Refinitiv Eikon, USDA

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**Iowa State University**

**Extension and Outreach**

**CARD**

Center for Agricultural and Rural Development
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

China GDP Target: 6.5%
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...
Will China be hurt enough to talk?

But...

who makes China’s exports

FINANCIAL TIMES

IOWA STATE UNIVERSITY
Extension and Outreach

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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.
Why Care About China?

Reason 1: China is a huge market for US

[Graph showing trend lines for China, Canada, Mexico, Japan, and South Korea from 2001 to 2016.]

Source: Choices
2017 Q2 Issue
US holds a large and consistent ag trade surplus with China
Percentage of U.S. Agricultural Production Exported

<table>
<thead>
<tr>
<th>Product</th>
<th>Export Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walnuts</td>
<td>79%</td>
</tr>
<tr>
<td>12-15% Cotton</td>
<td>76%</td>
</tr>
<tr>
<td>Almonds</td>
<td>67%</td>
</tr>
<tr>
<td>Pistachios</td>
<td>62%</td>
</tr>
<tr>
<td>75% Sorghum</td>
<td>59%</td>
</tr>
<tr>
<td>0% Rice</td>
<td>55%</td>
</tr>
<tr>
<td>Soybeans</td>
<td>62%</td>
</tr>
<tr>
<td>Wheat</td>
<td>5%</td>
</tr>
<tr>
<td>Grapes</td>
<td>15-20% Pork</td>
</tr>
<tr>
<td>Pork</td>
<td>21%</td>
</tr>
<tr>
<td>Corn*</td>
<td>2%</td>
</tr>
<tr>
<td>Cherries</td>
<td>19%</td>
</tr>
<tr>
<td>Apples</td>
<td>18%</td>
</tr>
<tr>
<td>Poultry</td>
<td>16%</td>
</tr>
<tr>
<td>Dairy</td>
<td>15-18%</td>
</tr>
<tr>
<td>Beef</td>
<td>10%</td>
</tr>
</tbody>
</table>

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
Why Care About China?

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

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
Chinese land is owned by collectives
(Contract Right Certificate)

Family Rep.

30-year term

With at least one 30-year renewal

All family members

Total land size

Number of parcels

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


Landesa
Rural Development Institute

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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
### 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.) (China increased production by 9% in 2018)</td>
<td>38%</td>
<td>47%</td>
<td></td>
<td>A-10%</td>
<td></td>
</tr>
<tr>
<td>Pork ($2.32 Bil.)</td>
<td>13%</td>
<td>50%</td>
<td></td>
<td>Canada: 11%</td>
<td></td>
</tr>
<tr>
<td>Ethanol ($0.38 Bil.)</td>
<td>70%</td>
<td>11%</td>
<td></td>
<td>Pakistan 15%</td>
<td></td>
</tr>
<tr>
<td>Beef ($2.42 Bil.)</td>
<td>0%</td>
<td>22%</td>
<td>28%</td>
<td>U-21%</td>
<td></td>
</tr>
<tr>
<td>Poultry ($1.11 Bil.)</td>
<td>79%</td>
<td></td>
<td></td>
<td>A-9%</td>
<td></td>
</tr>
<tr>
<td>Corn ($0.87 Bil.)</td>
<td>10%</td>
<td></td>
<td></td>
<td>Ukraine: 79%</td>
<td></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 wants to maintain the status quo and avoid dispute escalations. As the two cases above demonstrate, China targets high-value 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 production categories and domestic production. Half of the U.S. broiler products were chicken feet, a replacement for which is commonly used for feed and can be replaced by corn or other coarse grains. In terms of feed, soybean is a substitute for corn.

Inflict Economic and Political Costs
From the perspective of China’s government, the ultimate goal of retaliatory tariffs is to inflict economic and politically influential interest groups in the United States, turning them into lobbyists for free trade. For retaliation measures to be effective, China’s market as an export destination for corn and soybean must be important for U.S. producers, as is the case for broiler products and sorghum. Furthermore, U.S. government has long recognized the political significance of the U.S. agricultural industry, which is why it targets U.S. agricultural exports in trade spats.

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.

The ministry also said in the statement that China’s overall yearly consumption of soymeal would fall by 11 million tonnes. The country used 71 million tonnes of soymeal to make animal feed in the 2017-18 crop year.
China now could produce 97% of its pork, but only <20% of its soybean
ASF penetrates China's south

Yunnan province is one of China's largest 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
China’s 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?

Figure 1. Chicken Trade between the United States, China, and the Rest of the World (ROW)

Why Care About China?
Reason 6: Chinese Ag Policy Presents Future Demand that could be filled by our competitors


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; Iowa State University

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China retaliates against new US tariffs as trade war escalates
Beijing slaps duties of up to 10 per cent on $60bn of American imports
• 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!)
https://store.extension.iastate.edu/product/6492
82% of Iowa Land Owned Free of Debt

Farmland Ownership Remains a Long-Term Commitment

<table>
<thead>
<tr>
<th>Years Owned</th>
<th>2017</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 50 Years</td>
<td>8%</td>
<td>20%</td>
</tr>
<tr>
<td>40-50 Years</td>
<td>12%</td>
<td>20%</td>
</tr>
<tr>
<td>30-40 Years</td>
<td>13%</td>
<td>15%</td>
</tr>
<tr>
<td>20-30 Years</td>
<td>20%</td>
<td>19%</td>
</tr>
<tr>
<td>10-20 Years</td>
<td>24%</td>
<td>21%</td>
</tr>
<tr>
<td>&lt; 10 Years</td>
<td>24%</td>
<td>24%</td>
</tr>
</tbody>
</table>
## Percent of Owner Willing to Help Tenant Adopt Cover Crops by Type

<table>
<thead>
<tr>
<th>Pay for a portion of cost to plant cover crops</th>
<th>Lower rent for tenants who plan to plant cover crops</th>
<th>Longer lease for tenants who plan to plant cover crops</th>
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<tbody>
<tr>
<td>Yes</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>No</td>
<td>25%</td>
<td>7%</td>
</tr>
<tr>
<td>Maybe</td>
<td>16%</td>
<td>1%</td>
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Farmland values under double downward pressure from interest rate hikes and growing trade uncertainty

Land Value = net income / interest rate
Thank You!

Wendong Zhang  
Assistant Professor and Extension Economist  
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2017 Iowa Farmland Ownership and Tenure Survey report  
https://store.extension.iastate.edu/product/6492