Global Agricultural Trade and Tariffs: Understanding Short and Long Run Price and Marketing Implications for Tennessee Commodities

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Overview

• Importance of agricultural trade.
• NAFTA, CPTPP, and China.
• Short and long run price considerations.
• Concluding thoughts.
Importance of Agricultural Trade

- U.S. is the largest agricultural exporter, $138 billion in 2017.
- Exports account for about 35% of agricultural income.
- Both exports and imports generate positive economic impacts.
- ~7.6 billion people in the world, about 4% live in the US.
## Importance of Agricultural Trade

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Cotton</td>
<td>86.9</td>
<td>$5.8 billion</td>
<td>$144 million</td>
<td>11\textsuperscript{th}</td>
</tr>
<tr>
<td>Sorghum</td>
<td>50.1</td>
<td>$1.7 billion</td>
<td>$0.9 million</td>
<td>N/A</td>
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<tr>
<td>Soybean</td>
<td>47.0</td>
<td>$42.0 billion</td>
<td>$680 million</td>
<td>16\textsuperscript{th}</td>
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<tr>
<td>Wheat</td>
<td>45.7</td>
<td>$8.9 billion</td>
<td>$121 million</td>
<td>18\textsuperscript{th}</td>
</tr>
<tr>
<td>Pork</td>
<td>21.0</td>
<td>$18.9 billion</td>
<td>$74 million</td>
<td>20\textsuperscript{th}</td>
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<tr>
<td>Poultry</td>
<td>16.5</td>
<td>$38.7 billion</td>
<td>$541 million</td>
<td>17\textsuperscript{th}</td>
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<td>Corn</td>
<td>15.1</td>
<td>$46.9 billion</td>
<td>$418 million</td>
<td>18\textsuperscript{th}</td>
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<tr>
<td>Dairy</td>
<td>11.1</td>
<td>$34.5 billion</td>
<td>$119 million</td>
<td>31\textsuperscript{st}</td>
</tr>
<tr>
<td>Beef</td>
<td>10.1</td>
<td>$63.9 billion</td>
<td>$537 million</td>
<td>25\textsuperscript{th}</td>
</tr>
</tbody>
</table>
Figure 3. US Trade Agreements, 1947-2015.

Real. Life. Solutions.
Trade Agreements Currently Being Negotiated

• NAFTA – North American Free Trade Agreement.
  – Canada, Mexico, and United States.
  – Key Tennessee Ag Commodity: All; most contentious - Dairy.
• CPTPP – Comprehensive and Progressive Agreement for Trans-Pacific Partnership.
  – Currently 11 countries: Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam (U.S. looking to enter?).
  – Key Tennessee Ag Commodity: Beef (Japan).
• China-United States.
  – Key Tennessee Ag Commodity: Soybeans.
NAFTA: History

- Increased trade, investment, and reduced tariff and non-tariff barriers between Canada, U.S., and Mexico.
- Integrated the supply chains of many commodities and goods.
- 1994-2017 total U.S. exports increased by 199% (Ag exports by 291%) under NAFTA.
- Total U.S. economic impact from ag trade under NAFTA estimated at $107.8 billion and 509,000 jobs.
US-Canada Agricultural Trade balance (billions)

U.S.-Mexico Agricultural Trade Balance (billions)

U.S. Agricultural Exports to Canada (billions of $)

Major Change is a Much Larger Pie! $5.5 to $20.5 billion!

1994 Exports: $5.5 Billion
- Oilseed, 0.366711
- Poultry, 0.234314
- Dairy, 0.085543
- Planting Seeds, 0.057813
- Grains & Feeds, 0.888233
- Vegetables, 0.930067
- Fruits & Nuts, 0.942182
- Livestock & Meats, 0.802901
- Other Hort, 0.66018


2017 Exports: $20.5 Billion
- Poultry, 0.738181
- Dairy, 0.827837
- Oilseed, 1.455981
- Grains & Feeds, 3.492402
- Vegetables, 3.091043
- Fruits & Nuts, 3.316766
- Livestock & Meats, 2.685089
- Other Hort, 2.825336

U.S. Agricultural Imports from Canada (billions of $)

Major Change is a Much Larger Pie! $5.3 to $22.3 billion!

1994 Imports: $5.3 Billion

2017 Imports: $22.3 Billion

U.S. Agricultural Exports to Mexico (billions of $)

Major Change is a Much Larger Pie! $4.5 to $18.6 billion!

1994 Exports: $4.5 Billion

- Grains & Feeds: 1.17658
- Livestock & Meats: 0.934283
- Oilseeds: 0.909981
- Poultry: 0.254659
- Dairy: 0.181708
- Fruits & Nuts: 0.223967
- Sugar & Tropical: 0.250464
- Other Hort: 0.200966
- Tobacco: 0.000235
- Planting Seeds: 0.110974
- Cotton: 0.193024

2017 Exports: $18.6 Billion

- Grains & Feeds: 4.536227
- Livestock & Meats: 3.092755
- Oilseeds: 3.01224
- Poultry: 1.242929
- Dairy: 1.2817
- Fruits & Nuts: 0.646475
- Sugar & Tropical: 1.073783
- Other Hort: 1.162983
- Tobacco: 0.054179
- Planting Seeds: 0.247868
- Cotton: 0.332069

U.S. Agricultural Imports from Mexico (billions of $)

Major Change is a Much Larger Pie! $2.9 to $24.6 billion!

U.S. Agricultural Commodities Effected by Canada’s Tariffs

- After the U.S. imposed tariffs on steel and aluminum imports Canada retaliated with their own tariffs:
  - Coffee (not decaf): 10%
  - Maple sugar and maple syrup: 10%
  - Candy, including licorice, toffee, and chocolate bars: 10%
  - Pizza: 10%
  - Cucumbers and gherkins: 10%
  - Strawberry jam: 10%
  - Orange juice (fresh, not frozen): 20%
  - Soy sauce: 10%
  - Ketchup and other tomato sauces: 10%
  - Mayonnaise and salad dressing: 10%
  - Quiche: 10%
  - Other condiments, seasonings, and sauces: 10%
  - Soups and broths: 10%
  - Water, including mineral, carbonated, and flavored: 10%
U.S. Agricultural Commodities Effected by Mexico’s Tariffs

• After the U.S. imposed tariffs on all steel and aluminum imports, Mexico retaliated with tariffs of its own.
  – Apples: 20%
  – Bourbon: 25%
  – Cheese, fresh (including cottage cheese): 25%
  – Cheese, including Parmigiano Reggiano, Edam, Fontina, Gouda, Havarti, Taleggio: 20%
  – Cheese, grated or powdered: 20%
  – Cranberries: 20%
  – Pork (including legs, shoulders, and ham): 20%
  – Potatoes: 20%
NAFTA: Current Status

• The most contentious issues are non-agriculture related:
  – Auto manufacturing
  – Sunset clause
  – Dispute resolution mechanism
  – Immigration and labor

• Canadian dairy and poultry supply management systems will likely remain unresolved.

• Elections can complicate trade negotiations.

• Agreement done in 2018? Maybe.
CPTPP

- U.S. is currently not a member nation. Might join?
- Expected to go into effect in 2019
  - President Trump pulled out of the Trans-Pacific Partnership in January of 2017
- Access to the Japanese beef and wheat markets for the U.S. could be problematic.
  - Japanese tariffs on wheat for Australia and Canada will decline over time from $150 per metric ton to $85 per metric ton. The tariff on U.S. wheat will remain at $150 per metric ton.
  - The duty on U.S. beef to Japan remains at 38.5% while Australia’s duty for Japan is nearly 27%. Australia’s duty will continue to decline over time (to 9% in 2033), while the U.S. duty will remain unchanged.
- Japan has indicated a reluctance to negotiate a bi-lateral trade agreement.
U.S. Beef Exports by Trading Partner: 2017

Total U.S. beef exports were $7.3 billion in 2017.
<table>
<thead>
<tr>
<th>Year</th>
<th>U.S. (MFN)</th>
<th>CPTPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>38.5</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>38.5</td>
<td>27.6</td>
</tr>
<tr>
<td>2020</td>
<td>38.5</td>
<td>26.6</td>
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<td>2021</td>
<td>38.5</td>
<td>25.8</td>
</tr>
<tr>
<td>2022</td>
<td>38.5</td>
<td>25.0</td>
</tr>
<tr>
<td>2023</td>
<td>38.5</td>
<td>24.1</td>
</tr>
<tr>
<td>2024</td>
<td>38.5</td>
<td>23.3</td>
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<td>2025</td>
<td>38.5</td>
<td>22.5</td>
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<td>2026</td>
<td>38.5</td>
<td>21.6</td>
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<td>2027</td>
<td>38.5</td>
<td>20.8</td>
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<td>2028</td>
<td>38.5</td>
<td>18.1</td>
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<td>2029</td>
<td>38.5</td>
<td>16.3</td>
</tr>
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<td>2030</td>
<td>38.5</td>
<td>14.5</td>
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<tr>
<td>2031</td>
<td>38.5</td>
<td>12.6</td>
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<tr>
<td>2032</td>
<td>38.5</td>
<td>10.8</td>
</tr>
<tr>
<td>2033</td>
<td>38.5</td>
<td>9.0</td>
</tr>
</tbody>
</table>

**MFN:** Most Favored Nations tariff rate applied under the World Trade Organization (WTO).

**CPTPP:** assuming that the CPTPP will be implemented in 2019.

Source: Muhammad et al. (2016) and Government of Canada.
CPTPP: Beef Implications

• A recent University of Tennessee study suggests that the total benefit for U.S. beef from tariff reductions is $287 million, which is the avoided export loss ($70 million) and the export gain ($217 million).

• Tennessee’s (Tennessee account for ~1 percent of national beef production) beef industry stands to lose $700,000 or gain $2.17 million.
China-United States Abbreviated Trade War Timeline

• Jan. 22: President Trump imposes a new tax on solar panels and washing machines.
• March 1: President Trump imposes tariffs on steel and aluminum imports.
• April 2-6: China proposes tariffs against the United States.
• April 16: U.S. Commerce Department bans exports to Chinese telecom company ZTE.
  – May 13: President Trump tweets that U.S. will help revive ZTE.
  – June 7: President Trump’s administration eases ban on ZTE.
• June 15: President Trump announces 25 percent tariff on $50 billion of Chinese goods. China responds with a targeted retaliation.
• June 18: President Trump threatens to impose tariffs on additional $200 billion worth of Chinese goods.
• June 27: President Trump calls on Congress to “enhance” review process governing Chinese investment in U.S. technology.
• July 6 — Washington levies tariffs on $34 billion of Chinese imports and Beijing retaliates immediately.
U.S. Agricultural Commodities Effected by Chinese Tariffs

Abalone, Almonds, Apples, Apricots, Artichokes, Asparagus, Avocados, Baked goods including pastries, cakes, biscuits, Bamboo shoots, Bananas, Beans, Beef and beef products, Beets, Betel nuts:, Bilberries, Blackberries, Brazil nuts, Brussel sprouts, Butter, Cabbage, Candy, Cantaloupe, Carambola, Carob, Carrots, Cashews, Catfish, Cauliflower, Caviar, Celery, Chayote, Cherries, Chestnuts, Cheese, Chickpeas, Chili peppers, Clams, Cockles, Coconut, Cod, Corn and corn products, Cowberries, Crab, Cranberries, Crawfish and crayfish, Currants, Cuttlefish, Dates, Durian, Eel, Eggs, Figs, Fish and fish products, Frog legs, Fruit and vegetable juices, Fruit pastes, purees, jams, and jellies, Garlic, Gooseberries, Grapes, Grapefruit, Guava, Hazelnuts (shelled and unshelled), Honey, Jellyfish, Jicama, Kale, Kiwi, Leeks, Lemons, Lentils, Limes, Lobster, Loganberries, Longan, Lotus fog, Lychee, Macadamia nuts, Mango, Mangosteen, Mei qiang and li gan, Mulberries, Mushrooms, Mussels, Nectarines, Octopus, Offal, Okra, Olives, Onions, Oranges, Other, Other fresh, dried, frozen, and preserved fruits and nuts, Oysters, Papaya, Pasta, Peaches, Peanut butter, Pears:, Peas, Persimmons, Pineapples, Pine nuts, Pistachios, Pitaya, Plantains, Plums, Pork, Prunes, Radishes, Raisins, Rambutan, Raspberries, Rice, Rose hips, Rutabaga, Salmon, Atlantic, Sardines, Sauerkraut, Scallops, Sea cucumber, Sea urchin, Seaweed, Sesame seeds, Shark fin, Shrimp, Squid, Snails, Sorghum, Soybeans, Strawberries, Sweet potatoes, Taro, Tilapia, Truffles, Tuna, Turnips, Walnuts, Water chestnuts, Watermelon, Wheat, Whey protein, Wine, and sparkling wine.
<table>
<thead>
<tr>
<th>Product</th>
<th>Value ($1,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Agricultural Product Exports</td>
<td>$ 19,612,135</td>
</tr>
<tr>
<td>Bulk Products</td>
<td></td>
</tr>
<tr>
<td>Soybeans</td>
<td>12,355,952</td>
</tr>
<tr>
<td>Cotton</td>
<td>976,417</td>
</tr>
<tr>
<td>Coarse Grains (ex. corn)</td>
<td>835,688</td>
</tr>
<tr>
<td>Wheat</td>
<td>348,727</td>
</tr>
<tr>
<td>Tobacco</td>
<td>162,297</td>
</tr>
<tr>
<td>Corn</td>
<td>142,036</td>
</tr>
<tr>
<td>Other Bulk Commodities</td>
<td>56,511</td>
</tr>
<tr>
<td>Pulses</td>
<td>25,056</td>
</tr>
<tr>
<td>Oilseeds (ex. soybean)</td>
<td>5,056</td>
</tr>
<tr>
<td>Rice</td>
<td>759</td>
</tr>
</tbody>
</table>

Source: USDA, Foreign Agricultural Service, Global Agricultural Trade System (GATS)
Key Tennessee Commodities Affected

- China imposed tariffs on: pork, soybeans, cotton, corn, sorghum, wheat, beef, whiskies, and tobacco.

- Soybeans comprise the largest share of agricultural trade with China.

U.S. soybean exports by destination market: 2017
(Total exports = $21.6 billion)
China’s 25% Tariff Imposed on Soybeans

- Exports could drop by $1.4 billion to $7.7 billion.
- Farm-level loss could be $0.33 to $1.76 per bushel.
- $27.4 to $146.1 million dollar loss in farm income for Tennessee producers.
- Loss of farm income has indirect and induced economic losses that would reverberate through Tennessee’s rural economy.

A lower Yuan makes Chinese imports more expensive (amplifies tariffs on foreign goods). Negative for soybean crush margins in China.
Short Run Implications

• Negative price implications for agricultural products.
• Difficult to distinguish between tariff response and other factors effecting market prices
  – ex. Cotton 90 cents vs. Soybean $8.50 soybeans – both have 25% tariffs.
• Short-run farm income assistance to be provided by the USDA.
• Supply and demand fundamentals will remain important.
  – At any point in time there is a limited quantity of a commodity available.
  – South American growing season will be very important for soybean markets.
Decrease from a high of 71.5 on February 26 to a low of 49.925 on August 1.

Decline of 30.1% of the high value!
Decline from a high of $10.60 ½ on May 29 to a low of $8.26 ¼ on July 16.

Price decline of $2.34 ¼!
Production response and tariff response.
Currently about $2.15 per bushel difference, average from Sept 25/2017 to May 1/2018 $0.43 ($1.72).
Short-run Marketing Strategies

• Store (on- or off-farm) and sell the crop at a later date.
  – Consider all storage costs and risk.
• Delayed pricing contacts.
• Sell the cash crop and establish a long position in the futures or options markets (speculative).
  – Ex. Sell cash soybeans at $8.65; buy ZSH19 for $8.86 if futures prices increase between now and March a gain can be realized.
  – Know the risks of your trade; work with a qualified professional when implementing futures and options strategies.
Short Run Assistance to Producers Impacted by Trade Barriers

1) Market Facilitation Program administered through Farm Service Agency - payments to agricultural producers (corn, soybeans, cotton, sorghum, wheat, pork, and dairy).

2) Food Purchase and Distribution Program administered through the Agricultural Marketing Service - purchase of surplus supplies and distribution of the supplies to nutrition programs and charities (fruits, nuts, rice, legumes, beef, pork, and milk).

3) Trade Promotion Program administered by the Foreign Agriculture Service - market expansion through expanding existing markets and establishing new markets).
Agriculture Secretary Sonny Perdue

“...any aid checks to producers this fall likely won't make farmers financially whole, and USDA won't attribute every drop in commodity prices solely to trade complications.”
Long-run Implications

• A new “normal” will emerge the longer these trade disputes carry on.

• The longer trade disputes go on the more alternative supply channels will be established by importing countries.

• There will be a supply response.
  – Price incentive for Brazil to plant more soybeans and capture additional market share (and/or future growth in market share).
  – Disincentive to plant soybeans in the U.S. if prices remain low.
Long-run Implications

• At some point a deal will need to be made.
• Very uncertain at this juncture
  – Can the U.S. recover market share?
  – Do agriculture commodities stand to benefit if new more advantageous trade agreements are finalized?
• Supply and demand fundamentals will provide long term price direction.
  – Right now there are some positive signs if U.S. agriculture can increase access to the global market place.
Soybean Ending Stocks, 2006/07 to 2018/19

- **2006/07**
  - ROW: 1.68
  - China: 0.07
  - United States: 0.57

- **2007/08**
  - ROW: 1.63
  - China: 0.09
  - United States: 0.71

- **2008/09**
  - ROW: 1.16
  - China: 0.14
  - United States: 0.12

- **2009/10**
  - ROW: 1.57
  - China: 0.49
  - United States: 0.14

- **2010/11**
  - ROW: 1.82
  - China: 0.58
  - United States: 0.15

- **2011/12**
  - ROW: 1.22
  - China: 0.58
  - United States: 0.14

- **2012/13**
  - ROW: 1.46
  - China: 0.45
  - United States: 0.14

- **2013/14**
  - ROW: 1.69
  - China: 0.51
  - United States: 0.14

- **2014/15**
  - ROW: 2.05
  - China: 0.62
  - United States: 0.19

- **2015/16**
  - ROW: 2.14
  - China: 0.62
  - United States: 0.20

- **2016/17**
  - ROW: 2.50
  - China: 0.75
  - United States: 0.30

- **2017/18**
  - ROW: 2.20
  - China: 0.86
  - United States: 0.46

- **2018/19**
  - ROW: 2.38
  - China: 0.71
  - United States: 0.58

**Note:** The chart shows the soybean ending stocks for different years, with ROW (Rest of the World), China, and the United States indicated for each year.
Global Soybean Consumption, 2006/07 to 2018/19

Billions of Bushels


China United States ROW
Global Wheat Consumption, 2006/07 to 2018/19

- Billions of Bushels

- China
- United States
- ROW

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EXTENSION
INSTITUTE OF AGRICULTURE
THE UNIVERSITY OF TENNESSEE
Global Cotton Consumption, 2006/07 to 2018/19

Million Bales

- China
- United States
- ROW
Global Consumption of Poultry, Swine, and Beef, 2006 to 2018

Thousand Metric Tons

China

United States

ROW

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Concluding Thoughts

• Short run prices are likely to remain depressed with volatility driven by trade news.
  - A new sense of “normal” will emerge the longer trade disputes drag on.
• Long run price implications are uncertain and will vary by commodity.
  – Could be positive or status quo or negative.
  – This will depend on the resolution / trade agreement.
• Ultimately a good trade agreement will provide a standard set of rules (and mechanisms for enforcement) with which trade will occur.
Concluding Thoughts

- Global supply and demand fundamentals currently point to higher prices.
  - U.S. agriculture needs access to the global market.
  - The majority of demand growth will occur outside the U.S.

- Agriculture has been disproportionately impacted, compared to other U.S. industries, in the short term; but agriculture could benefit disproportionately in the long term, if new beneficial trade agreements emerge.