Trends in Agricultural Trade and Drivers of Demand: *Implications for Midwestern Agriculture*

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a.k.a. things you probably already knew in schmancy chart form
The Setting: Demand
Income
GDP per capital ($US 2005)
As incomes rise...
NOTE: Staple foods include cereals, roots and tubers.
SOURCES: FAO (2017c) and World Bank (2016a).
How much meat people eat around the world, per capita

0–50 LB/PER CAPITA  51–100 LB/PER CAPITA  101–150 LB/PER CAPITA  151–200 LB/PER CAPITA

Not just meat...
Ratio of % calories by source in low to high income countries

Share of food groups in total dietary energy supplies (percentage)

Note: Data refer to households of lowest and highest income quintiles in 47 developing countries.

Source: FAO, analysis of household surveys.
Combined with increased population and incomes...
Urbanization

Source: UN, 2015.
NOTES: For definitions, see Table 1 (p. 17). See also Annex Table A1 (p. 124). The GRUMP and LandScan grid-based population density datasets for 2000 are the most-recent global estimates.

SOURCE: FAO calculations and elaboration.
Retail sector by region

Setting: Supply
Yield growth

Note: Calculations based on FAOSTAT production statistics (downloaded on 20 September 2016). Growth rates estimated using the ordinary least squares (OLS) regression of the natural logarithm of crop yields on time and a constant term. The commodity group ‘Cereals (total)’ is from FAOSTAT and includes: wheat, rice (paddy), barley, maize, rye oats, millet, sorghum, buckwheat, quinoa, fonio, triticale, canary seed, as well as grains and mixed cereals not elsewhere specified.

Source: FAO, 2016b.
Increasing farm investment
Also in developing countries
Water stress
Agricultural Trade
Source: Data from 1961–2013 are based on FAO, 2016a; data for 2014 and 2015 are based on ITC, 2016.
US Agricultural Exports
US Agricultural Exports:

20% of U.S. ag production; 50% of soybeans, wheat and rice; 75% of cotton.

China + Canada + Mexico = 46% of U.S. ag exports

Japan and South Korea 4th and 5th or 6th

Annual US Agricultural Export Growth, 1995-2003
U.S. agricultural exports, 2000-15

$ billion

Among bulk commodities, only soybeans saw a significant increase in exports between 1995 and 2013. In comparison, exports of all consumer-oriented products rose by at least 20 percent and as much as 400 percent in the case of dairy products during that period.
Growth in real per capita GDP and U.S. agricultural exports by type of market, 2000-15

Note: Bulk commodities include items such as unprocessed feedgrains and oilseeds. Intermediate commodities include items such as vegetable oils and livestock feed, hides, and skins. Consumer-oriented products include items such as meats, eggs, dairy products, and fresh and processed fruit. GDP = gross domestic product.
...so what does this mean for Midwestern agriculture?
AN OVERVIEW OF CORN

The chart above shows the production, prices, and exports of corn from 1975 to 2015.

- **Million bushels** are shown on the y-axis, ranging from 0 to 16,000.
- **Years** are represented on the x-axis, from 1975 to 2015.
- **$/Bushel** prices are also shown, ranging from $0.0000 to $8.0000.

- **13%** of the corn produced was exported.

The chart uses different colors to represent different categories:

- **Red** for Food-Alcohol-Industrial
- **Purple** for Seed
- **Green** for Feed
- **White** for Exports
- **Gray** for Production
- **Yellow** for Prices

The chart illustrates trends in corn production, prices, and exports over the specified period.
Implicit Corn exports ~ 26%

Source: FAS

http://farmdocdaily.illinois.edu/2017/03/another-look-at-agricultural-
Implicit Corn exports ~ 26%
Implicit Corn exports ~ 26%
AN OVERVIEW OF WHEAT

[Graph showing trends in wheat, with categories for Food, Seed, Feed, Exports, Production, and Prices.]

Million bushels

$/Bushel

- Food
- Seed
- Feed
- Exports
- Production
- Prices

[Data points and years display]
Two (short) case studies
**NAFTA**

- Gradually eliminated all tariffs and most non-tariff barriers on goods produced and traded; 15-year period; sugar and corn longest.

- At the time, Mexico’s trade-weighted tariff on U.S. ag products was 11%.

- Also eliminated most non-tariff barriers for ag products; Sanitary and Phytosanitary (SPS), science-based and transparent, use of risk analysis.

*Figure 1. Imports of Corn by Canada and Mexico*
Feed exports driven by growth in Mexican livestock production

**Figure 6**

**U.S. feedstuffs are crucial to Mexican pork and poultry production**

- **Note:** Feedstuffs are defined as encompassing the commodity groupings of feed grains and products, feeds and fodders (excluding oilcake), and oilseeds and products.
- **Source:** USDA, Economic Research Service, using data from USDA/FAS (2014a) (exports) and SAGARPA/SIAP (2014b) (production).
Figure 2. Imports of Soybeans by Canada and Mexico

http://farmdocdaily.illinois.edu/2017/04/a-reminder-on-nafta-and-agriculture.html
Annual Average Agricultural Export Value ($B) before and after NAFTA

1991-1993

2010-2012

NAFTA Partners
China and Hong Kong
ROW
NAFTA Partners
China and Hong Kong
ROW

US  Mexico  Canada
Retaliatory tariffs matter...

What might happen if NAFTA was suspended?
In March 2009, Mexico imposed tariffs on US imports after the US suspended NAFTA trucking provisions. They could impose tariffs equal to the harm caused to Mexico by change in trucking access. Notably, many agricultural products were targeted, and the increase in tariffs saw a substantial drop in US exports to Mexico. The US re-introduced the trucking provisions in 2011 and the tariffs were removed.

Value of US Exports to Mexico Affected by Retaliatory Tariffs

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Tariff period</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>15,314</td>
<td>15,264</td>
</tr>
<tr>
<td>Not subject to retaliatory tariffs</td>
<td>13,415</td>
<td>13,727</td>
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<tr>
<td>Subject to retaliatory tariffs</td>
<td>1,899</td>
<td>1,535</td>
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</tbody>
</table>

Subject to tariffs: meat, cheese, other processed dairy, horticulture, nuts, processed foods, wine
US South Korea Free Trade Agreement

- Increased the number of goods that could enter Korea duty-free to 80 percent from 13 percent (USITC, 2013).
- Decreased tariffs on beef from 40%, pork from 25% and poultry and eggs from ~ 20%.
- Increased market access for dairy.
- Reduced tariffs for grains.

Value of US Agricultural Exports to South Korea

![Graph showing the value of US agricultural exports to South Korea from 2000 to 2016.](image-url)
Meat exports to S. Korea

Measured in 1000 lb

Beef
Pork
Poultry
Consumer-ready Agricultural Exports, United States to South Korea

Billion US$

- Other
- Fruits, nuts, vegetables, & preparations, inc. juices
- Meats & preparations

Source: USDA, FATUS data.
Some Ag Tariffs are still high

<table>
<thead>
<tr>
<th>Country</th>
<th>Agricultural</th>
<th>Nonagricultural</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>2.5</td>
<td>4.2</td>
<td>4.1</td>
</tr>
<tr>
<td>Brunei</td>
<td>0.1</td>
<td>1.7</td>
<td>1.5</td>
</tr>
<tr>
<td>Canada</td>
<td>14.2</td>
<td>2.2</td>
<td>3.1</td>
</tr>
<tr>
<td>Chile</td>
<td>6.0</td>
<td>5.9</td>
<td>5.9</td>
</tr>
<tr>
<td>European Union</td>
<td>22.3</td>
<td>2.3</td>
<td>3.6</td>
</tr>
<tr>
<td>Japan</td>
<td>12.8</td>
<td>1.2</td>
<td>2.1</td>
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<tr>
<td>Malaysia</td>
<td>14.0</td>
<td>3.6</td>
<td>4.4</td>
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<tr>
<td>Mexico</td>
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<td>3.3</td>
<td>5.0</td>
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<td>Peru</td>
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<tr>
<td>Singapore</td>
<td>15.7</td>
<td>0</td>
<td>0.5</td>
</tr>
<tr>
<td>United States</td>
<td>4.1</td>
<td>2.1</td>
<td>2.2</td>
</tr>
<tr>
<td>Vietnam</td>
<td>7.3</td>
<td>4.9</td>
<td>5.1</td>
</tr>
</tbody>
</table>

Sources: Congressional Budget Office; World Trade Organization.

Source CBO 2016
• Population growth, increased incomes and urbanization is increasing demand for horticulture, animal products, feed grains,
• and demand for processed foods and food safety.
• US agricultural exports are growing in response,
• but competition is tight.
• Trade agreements matter.