What’s Going On in China: Corn, GMO, Crop Insurance and High-Speed Rails

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The new Mike Duffy
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 [http://card.iastate.edu/farmland/]
  agriculture and the environment
China Ag: quarterly Ag DM articles
China’s Provinces

My Hometown

IOWA STATE UNIVERSITY
Extension and Outreach

CARD
Center for Agricultural and Rural Development
My Hometown: Shenxian, Shandong Province
Intensification of Land-Use in China

Greenhouse – plastic film - Shandong Province
GDP growth, first half of 2016

Source: Wind Info

THE WALL STREET JOURNAL.
THE DRAGON SLOWS

China real annual GDP growth (year-on-year change, in %)

2005: 11.3%
2006: 12.7%
2007: 14.2%
2008: 9.6%
2009: 9.2%
2010: 10.4%
2011: 9.3%
2012: 7.7%
2013: 7.7%
2014: 7.4%
2015*: 6.8%
2016*: 6.3%

*Projected % change by International Monetary Fund

Source: Bloomberg
High-Speed Rail in China
全国AQI指数实况图
12月18日20时—19日05时
中央气象台
<table>
<thead>
<tr>
<th></th>
<th>China</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population</td>
<td>1350.4 million</td>
<td>318.9 million</td>
</tr>
<tr>
<td>Gross agricultural production</td>
<td>555.2 billion $</td>
<td>232.4 billion $</td>
</tr>
<tr>
<td>Share of Agriculture in Total GDP</td>
<td>10.0%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Share of Agriculture in Employment</td>
<td>35.0%</td>
<td>2.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>China</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Farmers</td>
<td>241.7 million</td>
<td>3.2 million</td>
</tr>
<tr>
<td>Number of Farms</td>
<td>200.2 million</td>
<td>2.1 million</td>
</tr>
<tr>
<td>Total Farmland Area</td>
<td>406.8 million acres</td>
<td>914.5 million acres</td>
</tr>
<tr>
<td>Corn Production Area</td>
<td>89.7 million acres</td>
<td>87.4 million acres</td>
</tr>
<tr>
<td>Soybean Production Area</td>
<td>16.9 million acres</td>
<td>76.3 million acres</td>
</tr>
<tr>
<td>Wheat Production Area</td>
<td>59.6 million acres</td>
<td>45.3 million acres</td>
</tr>
<tr>
<td>Total Size of Vegetable/Herb Greenhouses</td>
<td>83.6 million sq.ft.</td>
<td>61.8 sq.ft</td>
</tr>
<tr>
<td>Average Farm Size</td>
<td>2.0 acres</td>
<td>433.6 acres</td>
</tr>
</tbody>
</table>
Of Maize and Markets: China’s New Corn Policy

Dollars per bushels

Source: http://www.quandl.com/

IOWA STATE UNIVERSITY
Extension and Outreach
Wu and Zhang 2016
Ag Policy Review
Of Maize and Markets: China’s New Corn Policy

Source: USDA FAS Grain: world markets and trade

Wu and Zhang 2016
Ag Policy Review
Of Maize and Markets: China’s New Corn Policy

Wu and Zhang 2016

Ag Policy Review

http://chinaag.org/services/production/
GMO in China

转基因产品有哪些？
- 大豆
- 玉米
- 油菜
- 棉花
- 番茄
- 木瓜

转基因大豆油占我国九成市场

1995年
- 我国开始进口大豆为非转基因大豆

1996年
- 我国开始进口转基因大豆

1997年
- 进口大豆288万吨

1999年
- 进口转基因大豆5838万吨

2012年
- 全世界12个国家种植转基因植物面积3990万公顷

美国
- 出口占总产量的45%
- 约3730万吨

中国
- 转基因大豆占总产量的93%
- 转基因大豆油占51.7%
- 1160.2万吨

15%认为不安全
- 基因大豆

21%认为安全

64%不确定

60%可以接受

主要作物：
- 玉米、油菜籽、甜菜、水果

中国转基因种植量居世界第四
GMO in China: Controversy/Divide

China Wants GMOs. The Chinese People Don't.

After Decades Of Wariness, China To Grow GMOs

The Chinese have long been wary of genetically modified organisms. The country allows imports of genetically modified corn and soybeans for animal feed. But it’s held off on domestic commercialization of those crops.

Over the past year, China has signaled it would relax that stance. This week it released its latest five-year plan for science and technology, saying it would push for the commercialization of biotech corn and soybeans in the next few years.
GMO in China: Controversy/Divide

Yongyuan Cui

Larry King in China; Key critique of GMO

GMO corn illegal
## Crop Insurance in China

**world’s 2\textsuperscript{nd} largest market 2007-2014**

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acres Covered for major crops (US acres)</td>
<td>37.9 million</td>
<td>182.2 million</td>
</tr>
<tr>
<td></td>
<td>Corn: 67.3%</td>
<td>Rice: 64.9%</td>
</tr>
<tr>
<td></td>
<td>Wheat: 61.8%</td>
<td></td>
</tr>
<tr>
<td>Premiums (US $)</td>
<td>0.69 billion</td>
<td>5 billion</td>
</tr>
<tr>
<td># Households Insured</td>
<td></td>
<td>214 million</td>
</tr>
<tr>
<td>Indemnity Paid (US $)</td>
<td></td>
<td>3.4 billion</td>
</tr>
</tbody>
</table>

2013 flood in Heilongjiang: paid $900 per household, 62% of annual average income; 59.7% insured households get payments

Source: Wenhui Chen 2014
Crop Insurance in China
world’s 2nd largest market 2007-2014

How it works now?
- Insures based on production cost
- Pay-up coverage level: 75% of production cost
- Risk covered: weather (not market)
- Vegetable, pork price loss insurance trial
- 2nd insurance market (similar to FarmerMac)

Future developments/trials
- Weather-based index insurance
- Price-based index insurance
- Yield/revenue-based insurance

Source: Wenhui Chen 2014
A Primer on China’s Political System and Reform Logic

At the highest level, anyone who reaches the age of 68 before or during a party national congress cannot, under normal circumstances, be a candidate for the Politburo Standing Committee. Five of its seven current members — everyone except President Xi Jinping and Premier Li Keqiang — fall into this category ahead of next year’s 19th National People’s Congress.

<table>
<thead>
<tr>
<th>Over the limit</th>
<th>Under</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AGE: 71</strong></td>
<td><strong>AGE: 61</strong></td>
</tr>
<tr>
<td>Yu Zhengsheng</td>
<td>Li Keqiang</td>
</tr>
<tr>
<td>Chairman of the Chinese People’s Political Consultative Conference</td>
<td>Premier</td>
</tr>
<tr>
<td><strong>AGE: 68</strong></td>
<td><strong>AGE: 63</strong></td>
</tr>
<tr>
<td>Liu Yunshan</td>
<td>Xi Jinping</td>
</tr>
<tr>
<td>Propaganda chief</td>
<td>President, General Secretary of the Communist Party of China</td>
</tr>
<tr>
<td><strong>AGE: 69</strong></td>
<td><strong>AGE: 68</strong></td>
</tr>
<tr>
<td>Zhang Gaoli</td>
<td>Wang Qishan</td>
</tr>
<tr>
<td>Vice Premier</td>
<td>Secretary of the Central Commission for Discipline Inspection</td>
</tr>
<tr>
<td><strong>AGE: 69</strong></td>
<td></td>
</tr>
<tr>
<td>Zhang Dejiang</td>
<td></td>
</tr>
<tr>
<td>Chairman of the Standing Committee of the National People’s Congress</td>
<td></td>
</tr>
</tbody>
</table>

Source: Asian Times 2016
China’s Experimentalist Approach: Local Trial & Error + (RDA) Regional Tournament Competition for promotion

- Operating rights of leased rural land & Rural residence as collateral: 300 [3000] counties
- Bundling reform “rural land reclamation + rural residential land owned by collectives + rural residence rights system”: 33 [333] cities

Each trial area has a different approach, has a potential to become national policy

Source: Xinhua News 2016; Xu 2011 JEL
Federal Reserve raises interest rates for second time in a decade, expects 3 hikes in 2017

_by Jim Tankersley_ December 14 at 3:30 PM
Is China a Currency Manipulator?

Real effective exchange rate: inflation-adjusted exchange rate against all trading partners, weighted by trade volume
Growing Trade deficit w China

The US's trade deficit with various regions:
- Rest of the world: 33%
- China: 50%
- Rest of East Asia: 17%

The trade deficit shifted from other East Asian economies to China during that time.

East Asia held 2/3 of the US trade deficit last year and 20 years ago.
China’s Importance in U.S. and Iowa Ag Trade

Source: Hart and Lee 2015
Impact of Trade War with China and Mexico on US economy

45% tariff on China, 35% on Mexico
Aborted in one year

Source: Peterson Institute
U.S.-China trade war games?

Figure 16: China’s imports from the US, by sector, 2015

<table>
<thead>
<tr>
<th>Import values (billion USD)</th>
<th>Share in US’s exports (%)</th>
<th>Share in China’s imports (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical machinery</td>
<td>19.8</td>
<td>7.0</td>
</tr>
<tr>
<td>Aircraft</td>
<td>17.6</td>
<td>11.8</td>
</tr>
<tr>
<td>Mechanical appliances</td>
<td>15.9</td>
<td>6.0</td>
</tr>
<tr>
<td>Automobile</td>
<td>13.2</td>
<td>8.6</td>
</tr>
<tr>
<td>Seeds and fruits</td>
<td>13.0</td>
<td>47.0</td>
</tr>
<tr>
<td>Optical products, incl. LCDs</td>
<td>11.3</td>
<td>6.0</td>
</tr>
<tr>
<td>Chemicals</td>
<td>7.0</td>
<td>6.9</td>
</tr>
<tr>
<td>Plastics</td>
<td>6.3</td>
<td>8.2</td>
</tr>
<tr>
<td>Nonferrous metal products</td>
<td>4.0</td>
<td>13.9</td>
</tr>
<tr>
<td>Pulp</td>
<td>3.9</td>
<td>39.1</td>
</tr>
<tr>
<td>Pharmaceutical products</td>
<td>3.3</td>
<td>4.2</td>
</tr>
<tr>
<td>Cereals</td>
<td>2.8</td>
<td>12.9</td>
</tr>
<tr>
<td>Mineral fuels</td>
<td>2.7</td>
<td>2.3</td>
</tr>
<tr>
<td>Prepared animal food</td>
<td>2.3</td>
<td>10.1</td>
</tr>
<tr>
<td>Wood products</td>
<td>2.2</td>
<td>23.3</td>
</tr>
<tr>
<td>Ores, slag and ash</td>
<td>1.7</td>
<td>14.5</td>
</tr>
<tr>
<td>Leather</td>
<td>1.6</td>
<td>45.2</td>
</tr>
<tr>
<td>Steel products</td>
<td>1.5</td>
<td>8.1</td>
</tr>
<tr>
<td>Rubber</td>
<td>1.0</td>
<td>16.7</td>
</tr>
<tr>
<td>Cotton</td>
<td>0</td>
<td>10.8</td>
</tr>
</tbody>
</table>

Source: Deutsche Bank, UN COMTRADE
China's Worldwide Reach

Sub-Saharan Africa sees very heavy Chinese construction activity. In investment, Australia holds a narrow lead over the U.S., followed by Canada and Brazil.

**NORTH AMERICA**
(excluding U.S.) $49.1
Canada $37.6
Cuba $5.0

**EUROPE**
$82.5
- Britain $17.8
- France $9.2
- Switzerland $8.2

**WEST ASIA**
$84.9
- Iran $18.6
- Russian Federation $17.0
- Kazakhstan $14.1

**EAST ASIA**
$98.0
- Indonesia $25.8
- Vietnam $11.2
- Malaysia $9.9

**UNITED STATES**
$57.8

**SOUTH AMERICA**
$77.0
- Brazil $28.2
- Venezuela $14.7

**SUB-SAHARAN AFRICA**
$119.7
- Nigeria $18.5
- Ethiopia $10.2
- South Africa $8.7

**ARAB WORLD**
$60.2
- Saudi Arabia $13.6
- Algeria $11.5
- United Arab Emirates $8.5

**AUSTRALIA**
$59.2

China has set a March 31 deadline for nations to become founding members of the Asian Infrastructure Investment Bank (AIIB).
Technology in China

China’s tech trailblazers

Coming of Age
The aggregate size of the Chinese internet industry has ballooned since 2006 as China shifts to a consumption-led economy. Tencent, Alibaba and Baidu have played key roles in driving the explosive growth.

Chinese Internet Companies (aggregate):

<table>
<thead>
<tr>
<th>Year</th>
<th>Market cap</th>
<th>Revenue</th>
<th>Net income</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>$15 billion</td>
<td>$1 billion</td>
<td>$424 million</td>
</tr>
<tr>
<td>2015</td>
<td>$545 billion</td>
<td>$91 billion</td>
<td>$22 billion</td>
</tr>
</tbody>
</table>

Source: Capital Group
Our Business + Affiliate Businesses

DIGITAL MEDIA & ENTERTAINMENT
- Youku
- UC Browser
- TMall TV
- Alibaba Music
- Alibaba Sports

CORE COMMERCE
- Taobao.com
- Tmall.com
- Juhuasuan.com
- Alibaba.com
- AliExpress
- Tmall Global
- Lazada

LOCAL SERVICES
- Alibaba.com
- Alibaba 1688.com
- Alibaba.com
- AliExpress
- 天猫国际
- LAZADA

PAYMENT & FINANCIAL SERVICE
- Alipay
- Ant Financial

LOGISTICS
- Cainiao

DATA CREATION
- Alimama.com

MARKETING SERVICES
DATA MANAGEMENT PLATFORM

CLOUD COMPUTING
- Alibaba Cloud
Iowa Farmland Value Portal
www.card.iastate.edu/farmland

twitter
#ISUlandvalue
Thank You!

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