

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

Wendong Zhang

Assistant Professor of Economics and Extension Economist

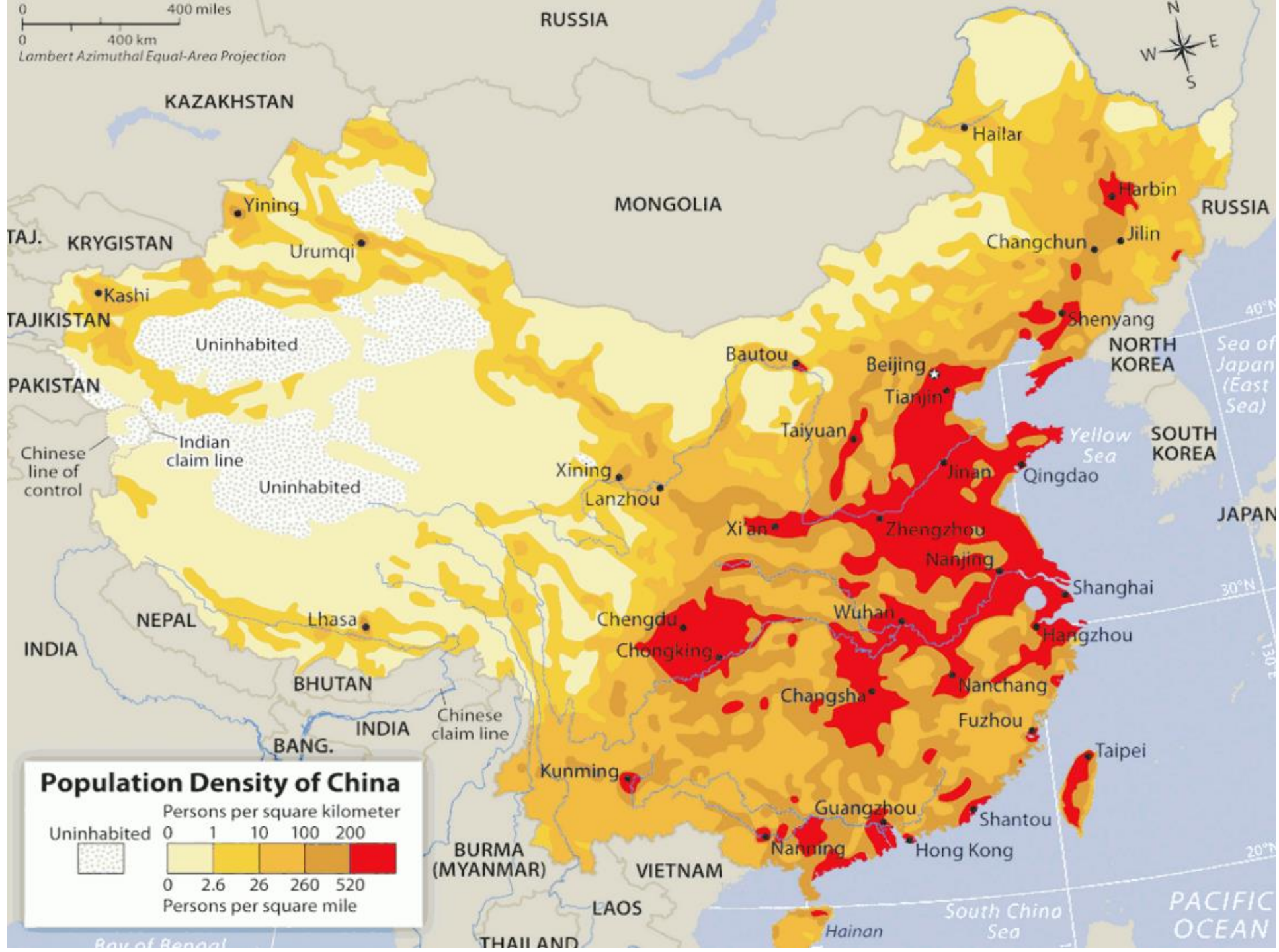
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ASFMRA Annual Conference

Chandler, Arizona November 1, 2018

A Quick Introduction about myself

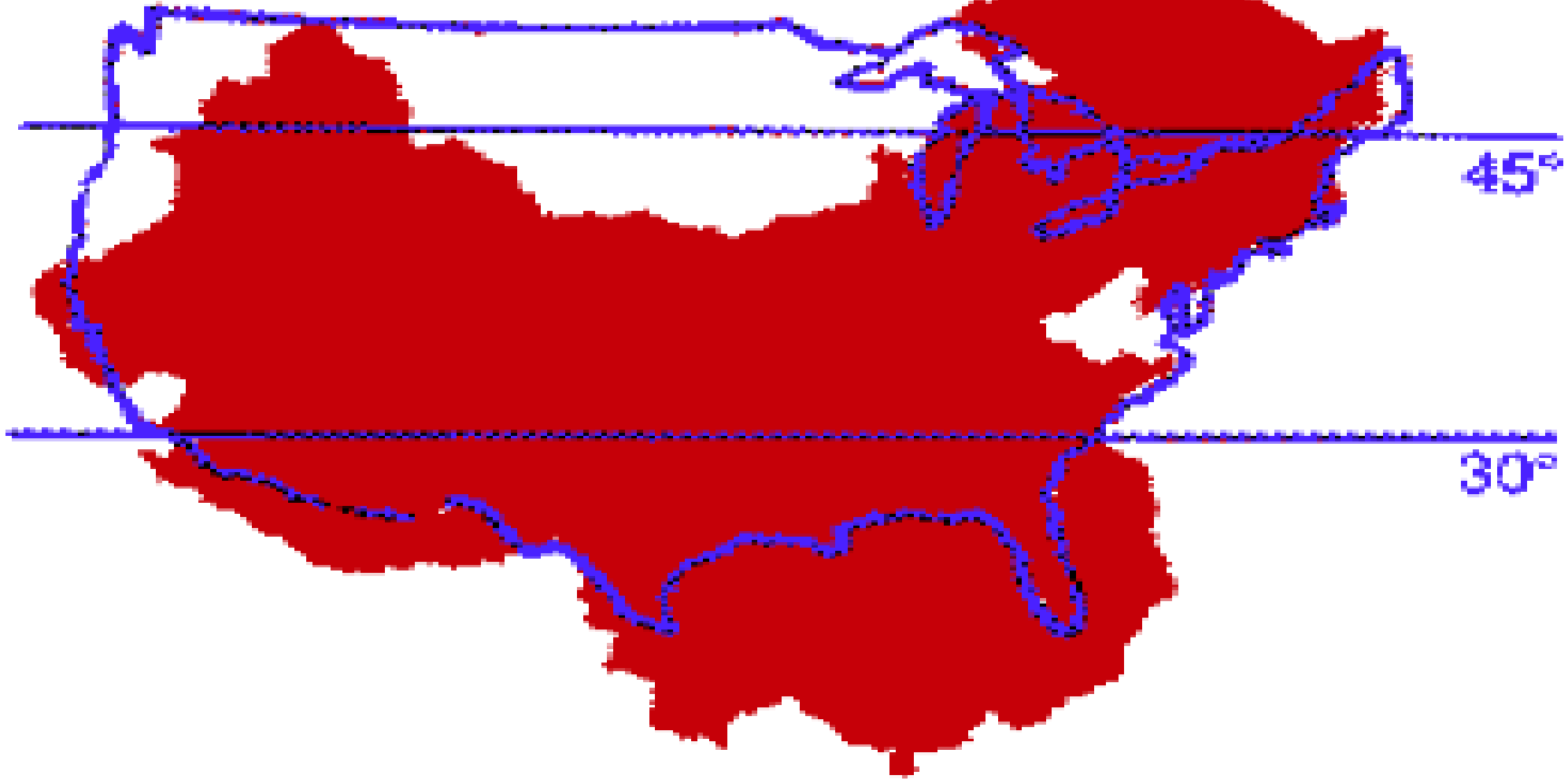
- Grown up in a rural county in NE China
- Attended college in Shanghai and Hong Kong
- Ph.D. in Ag Econ in 2015 from Ohio State
- 2012 summer intern at USDA-ERS on farm economy and farmland values
- **Academic Vice President, Iowa Chapter ASFMRA**
- Research and extension interests:
land value/ownership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



China's Provinces

My Hometown

Mainland China vs. US



My hometown: Shenxian, Shandong Province

Greenhouse – plastic film - Shandong Province





Under Secretary of Agriculture for Farm and Foreign Agricultural Services

Incumbent

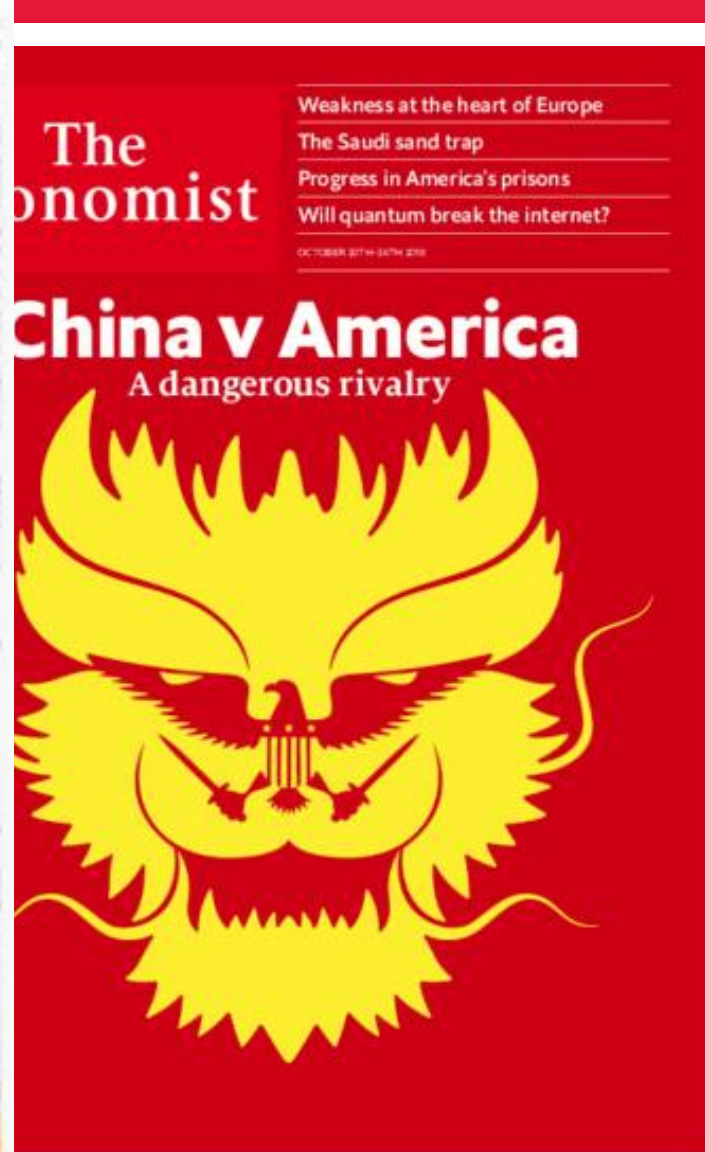
Assumed office
March 6, 2018



WORLD NEWS

OCTOBER 1, 2018 / 10:14 AM / A MONTH AGO

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



Extension and Outreach

Why Care About China?

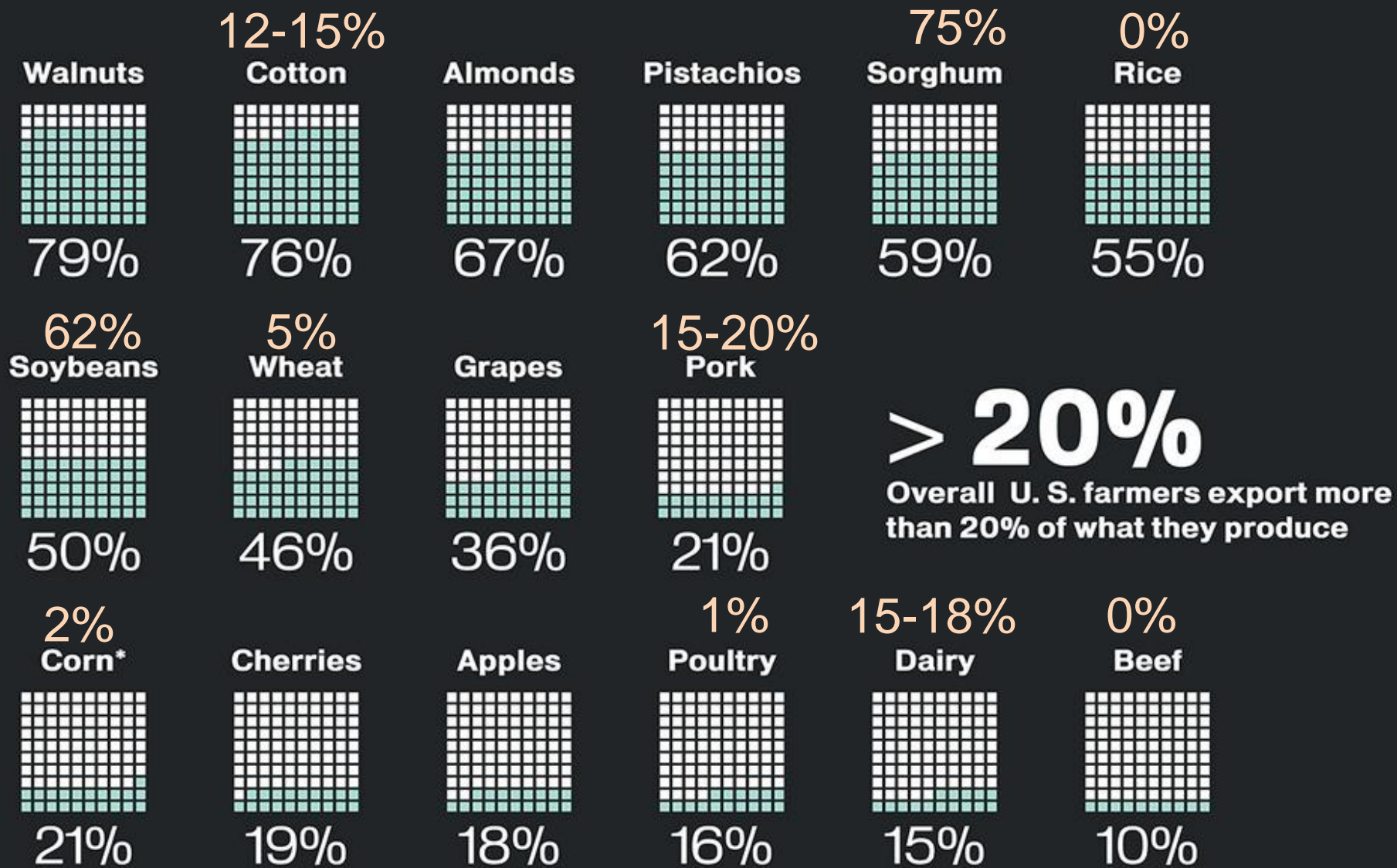
Reason 1: China is a huge market for US



US holds a large and consistent ag trade surplus with China



Percentage of U.S. Agricultural Production Exported



*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



CARD
Natural and Rural Development

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

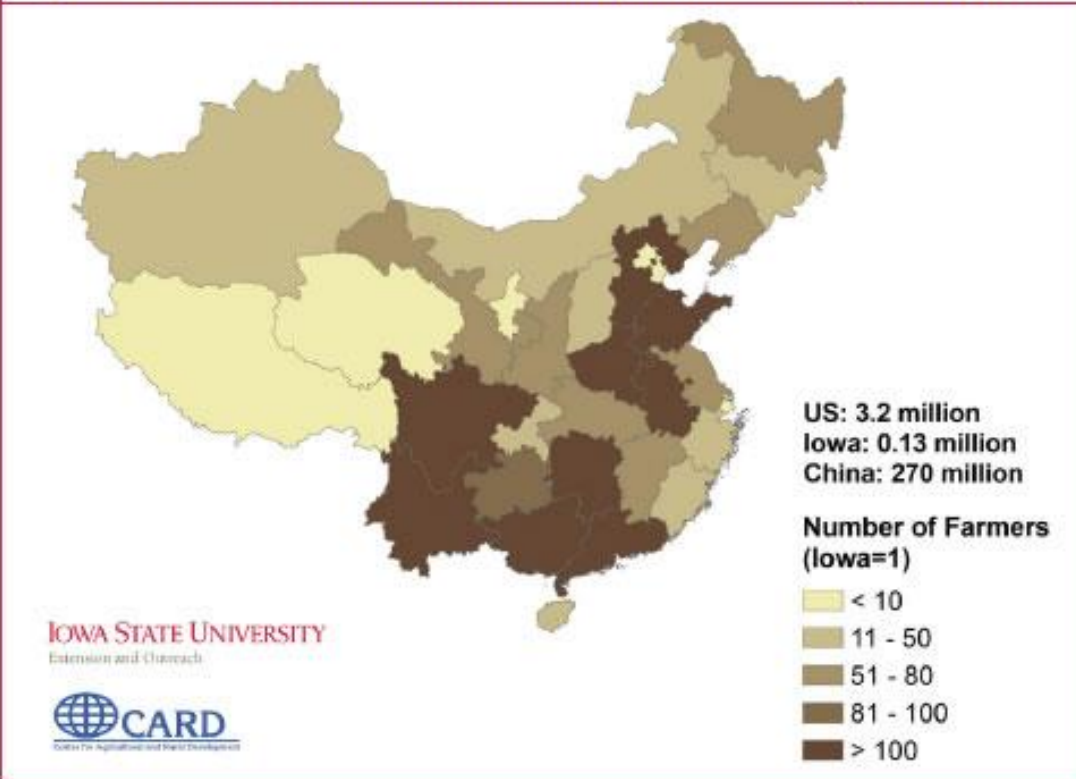
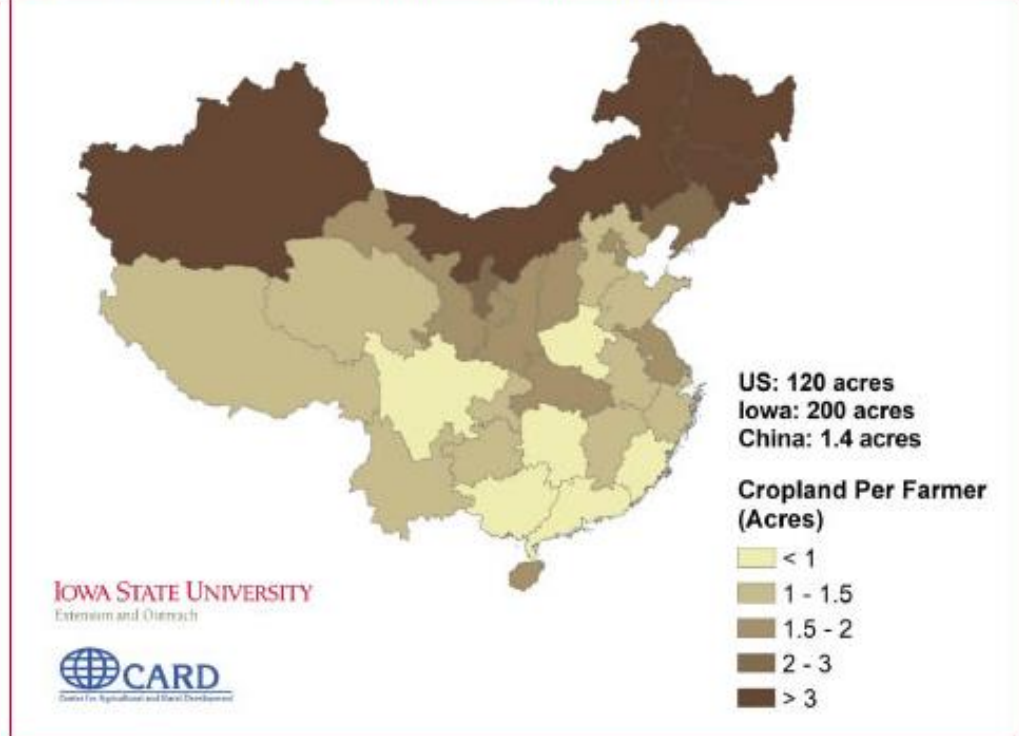
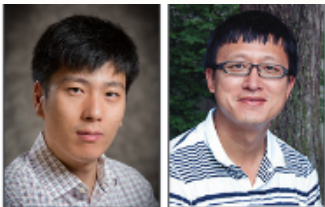


Figure 2. Crop land per farmer in China in acres



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

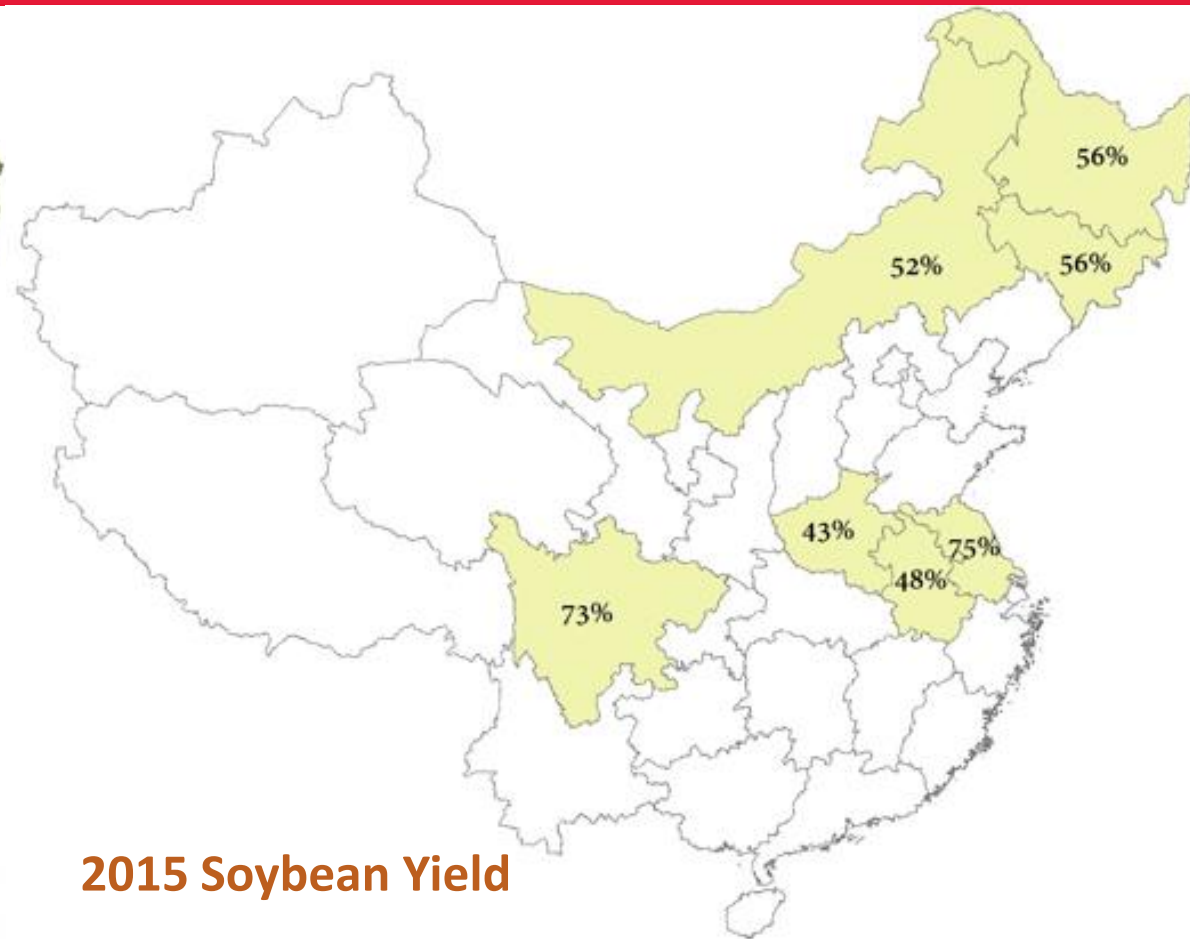
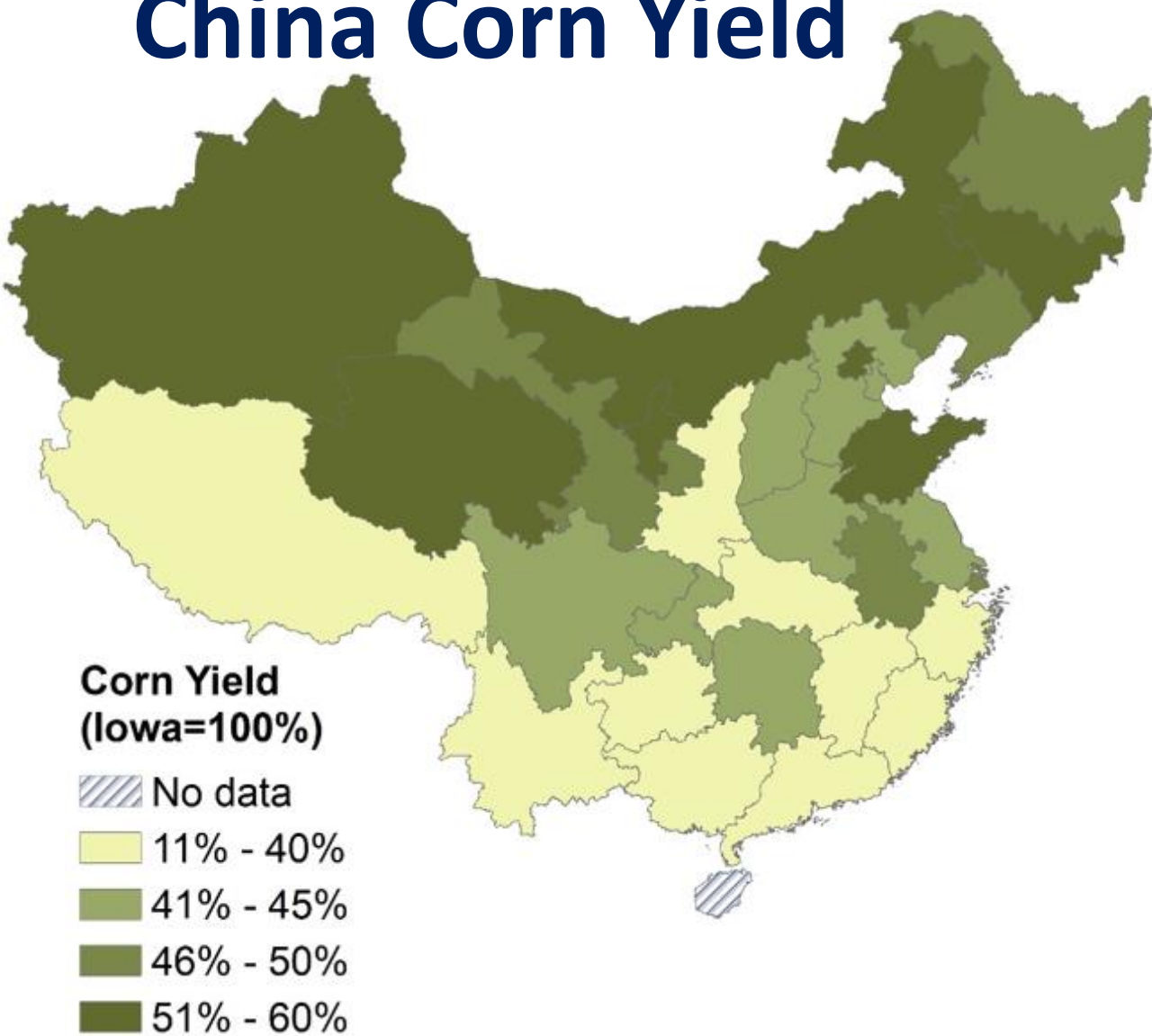
Number of parcels

Minghao Li, Wendong Zhang, and Dermot Hayes.
2018. ["Can China's Rural Land Policy Reforms Solve its Farmland Dilemma?"](#) *Agricultural Policy Review*. Center for Agricultural and Rural Development, Iowa State University.

All family members

承包地总面积(亩)		3.05		承包地块总数(块)		8块	
承包地块情况	地块名称	面积(亩)	等级	地类	四 至		
	秧田	0.32		水田	东: 水沟	南: 乾菜	
					西: 亚花	北: 清明	
	苏营井	0.67		:	东: 好菜	南: 路	
					西: 清明	北: 好妹	
	东平田	0.76		:	东: 清明	南: 地金	
					西: 提地	北: 公路	
	公路园	0.32 0.32		:	东: 好风	南: 清明	
					西: 好风	北: 乾菜	
	清明园	0.75		:	东: 清明	南: 乾菜	
				西: 世昌	北: 水沟		
长排地	0.20		:	东: 好风	南: 乾菜		
				西: 好风	北: 水沟		
新市井	0.26		:	东: 水沟	南: 好菜		
				西: 黑田	北: 正兰		
大甘地	0.11		:	东: 好地	南: 才金		
				西: 好地	北: 乾菜		

China Corn Yield



2015 Soybean Yield

US: 48 Bu/acre
Iowa: 56 Bu/acre
China: 26 Bu/acre

China Soybean Yield

Even on purchasing
Chinese person still l
ward food consu
surp of U.S.

1992
GDP per capita (PPP)
\$37,283

United States

\$1,846

China

U.S. GDP per capita was
20.2 times that of China

2016
GDP per capita (PPP)
\$53,417

United States

\$14,275

China

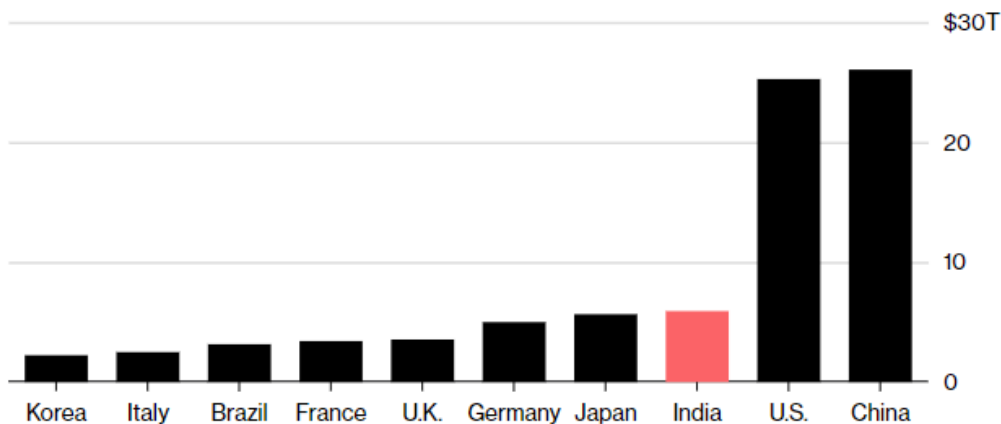
U.S. GDP per capita was
3.7 times that of China

Bloomberg

New Giant

India is set to be third-largest economy in just over a decade

■ Estimated GDP in 2030

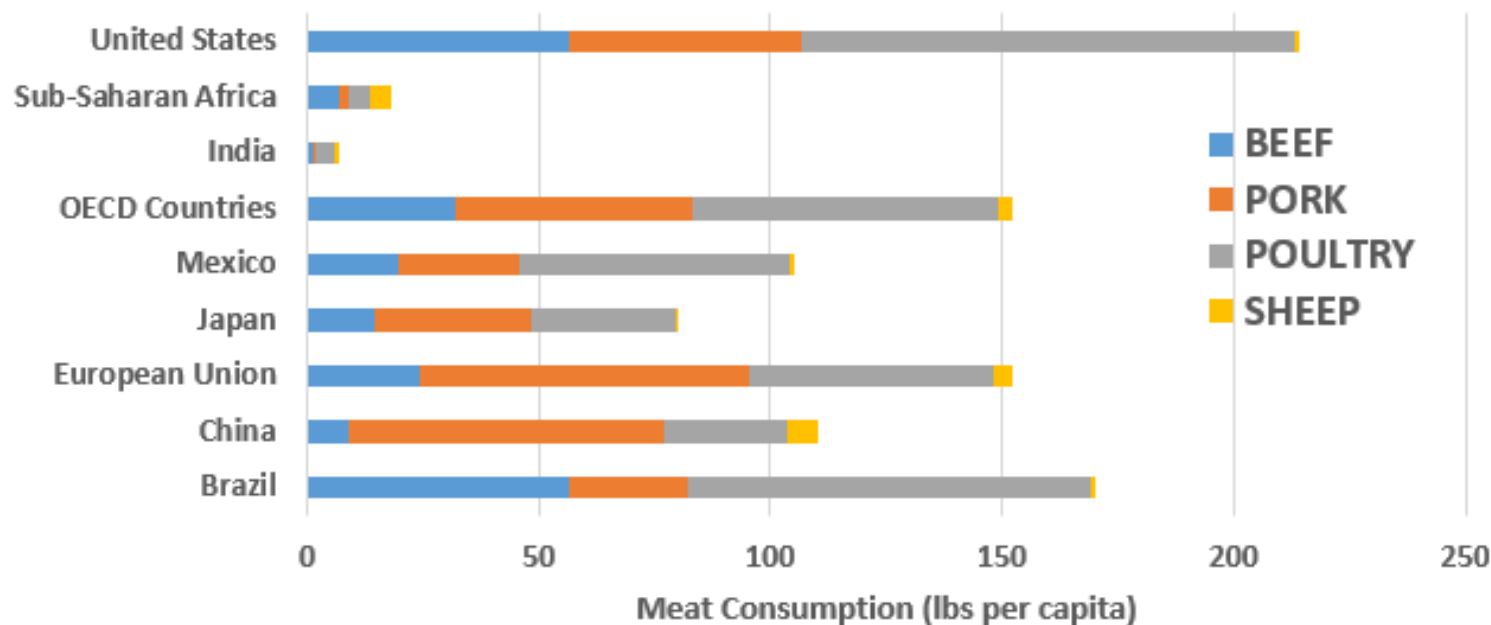


Source: HSBC

Why Care About China?

Reason 3: Chinese People Are Getting Richer, and will need more protein and better environment

Per-capita Meat Consumption by Country 2016 - OECD



88 percent of the next billion entrants into the middle class will be in Asia

By 2030, Asia could represent 2/3 of the global middle class population.



350m
in CHINA

380m
in INDIA

210m
in rest of ASIA

130m
in rest of the WORLD

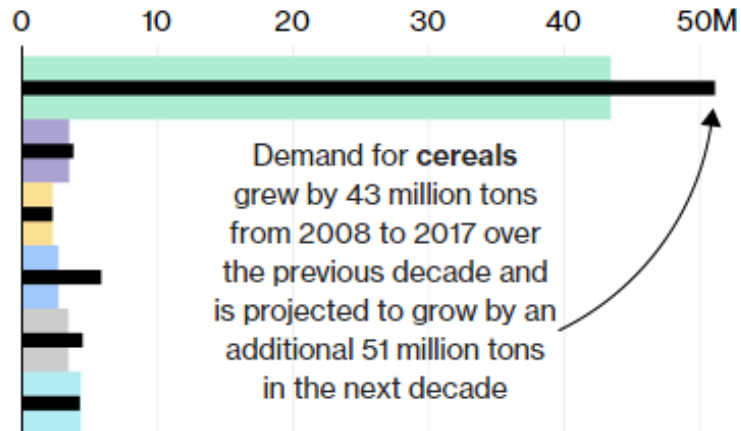
BROOKINGS

Food Demand Growth

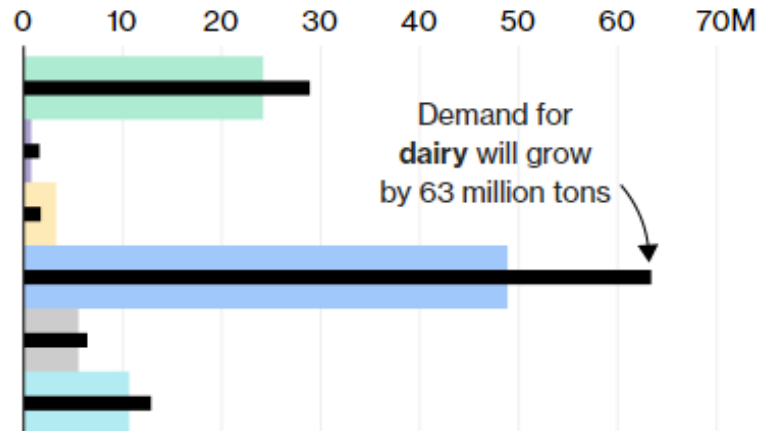
Compared by decade, in tons

Cereal Meat Fish Fresh dairy Sugar Vegetable oils 2018-2027

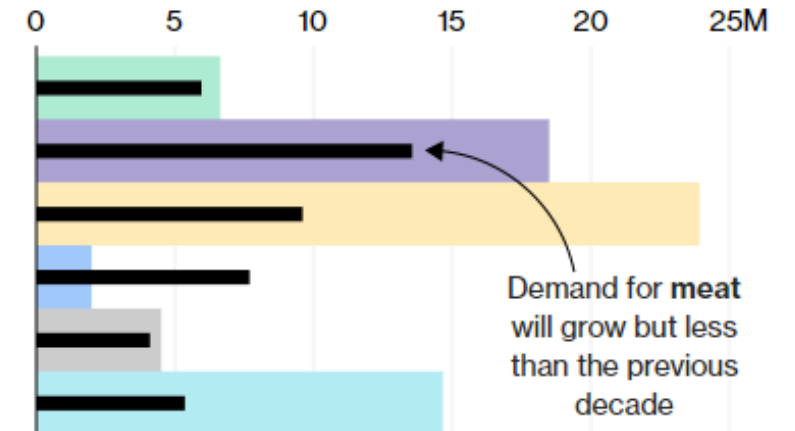
Sub-Saharan Africa



India



China



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



By [Justine Testado](#)

Oct 23, '18 7:47 PM EST

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Follow

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



Photo via Twitter.



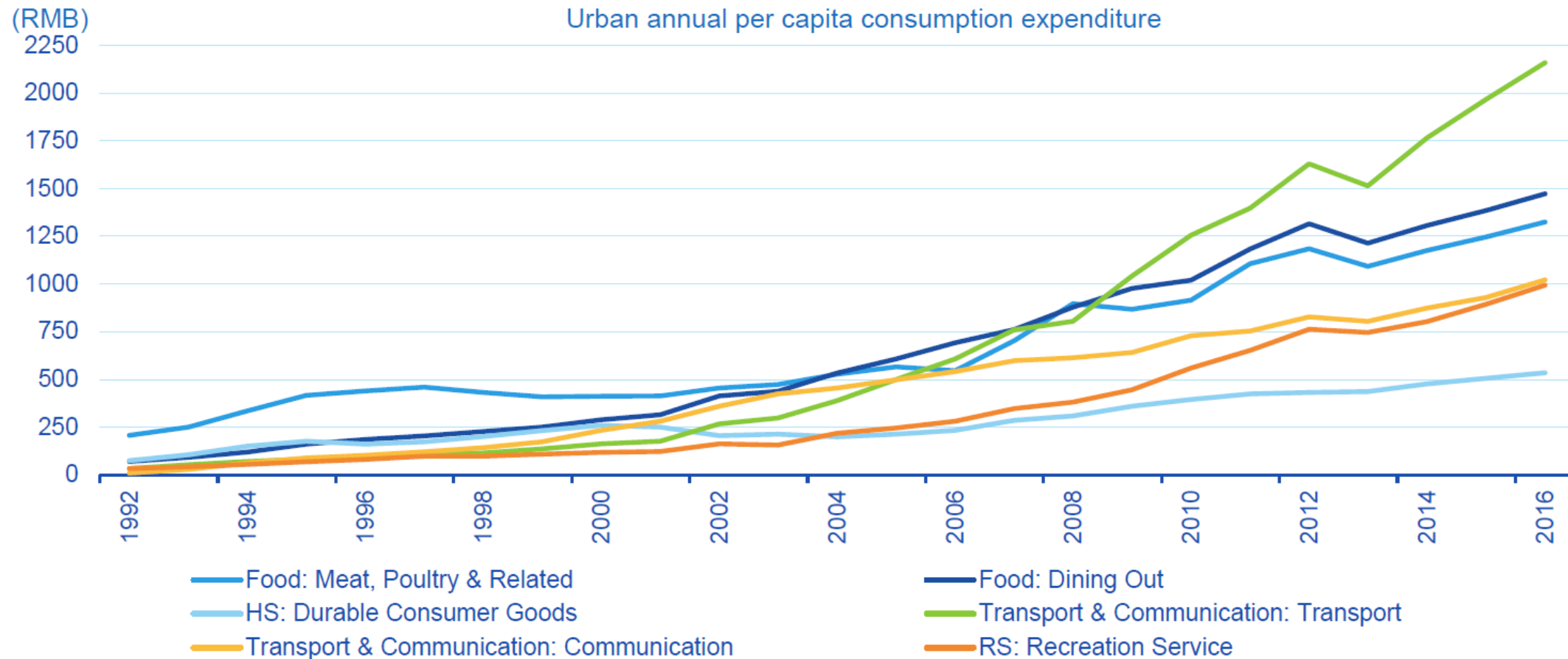
How does China's Greater Bay Area compare to its rivals?*

	 Population	 Total GDP (billion)	 GDP per capita
China's Greater Bay Area	68 million	\$1,390	\$20,000
Tokyo Bay Area	44 million	\$1,860	\$42,000
New York Bay Area	20 million	\$1,680	\$82,000
San Francisco Bay Area	7.7 million	\$780	\$101,000

Source: Hong Kong Legislative Council

*All data is for 2016, except Tokyo which is 2014

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

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

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 the status quo and avoid dispute escalations. As the two cases above demonstrate, China targets agricultural 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 domestic production. Half of the U.S. broiler products were chicken feet, a replaceable commodity commonly used for feed and can be replaced by corn or other coarse grains. In terms of

Inflict Economic and Political Costs

From the perspective of China's government, the ultimate goal of retaliatory tariffs is to pressure politically influential interest groups in the United States, turning them into lobbyists. For retaliation measures to be effective, China's market as an export destination for U.S. products must be important for U.S. producers, as is the case for broiler products and sorghum. Furthermore, the 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.

UPDATE 1-CHINA SAYS NEW ANIMAL FEED STANDARDS WILL CUT CHUNK OUT OF APPETITE FOR SOY

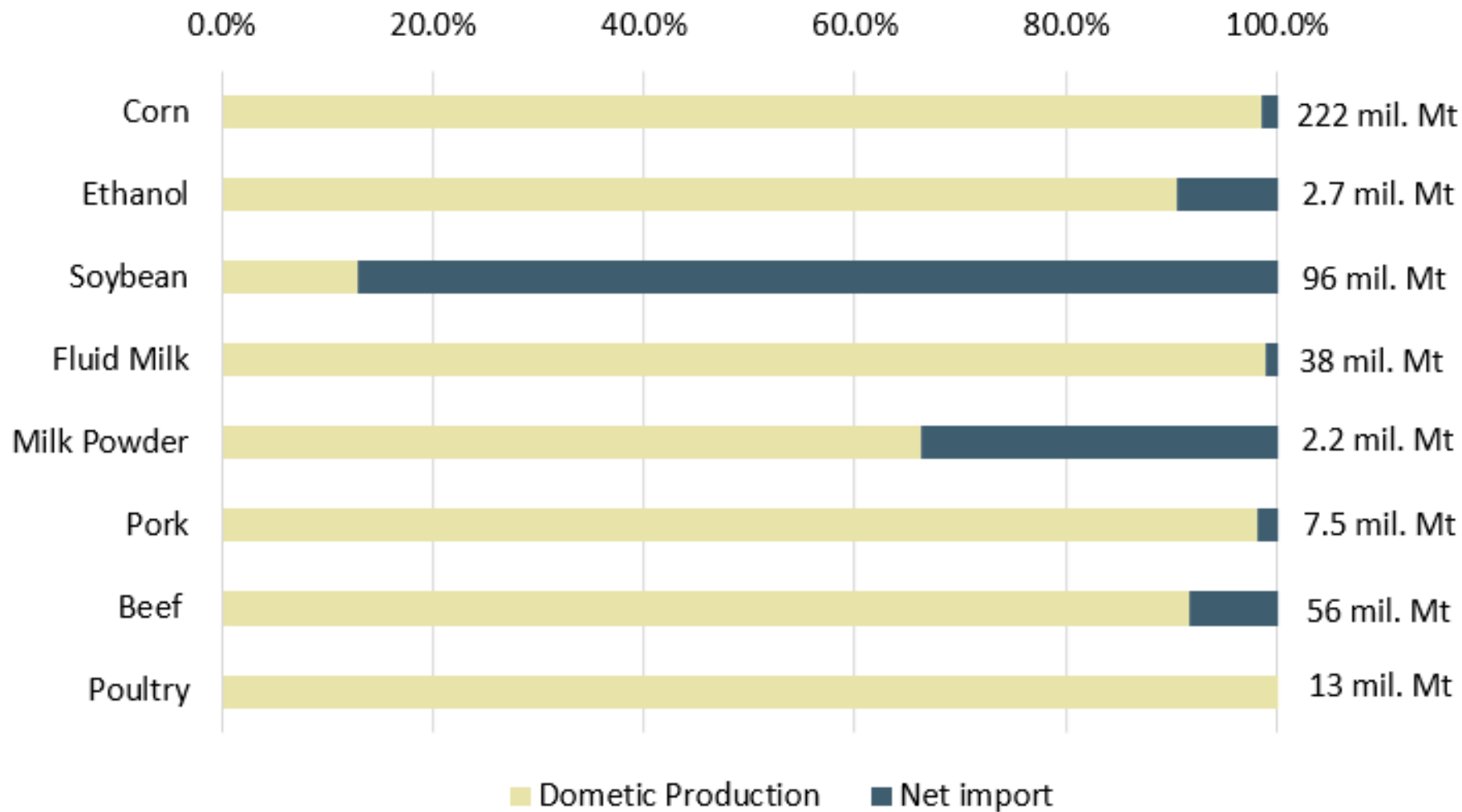
10/28/2018

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**

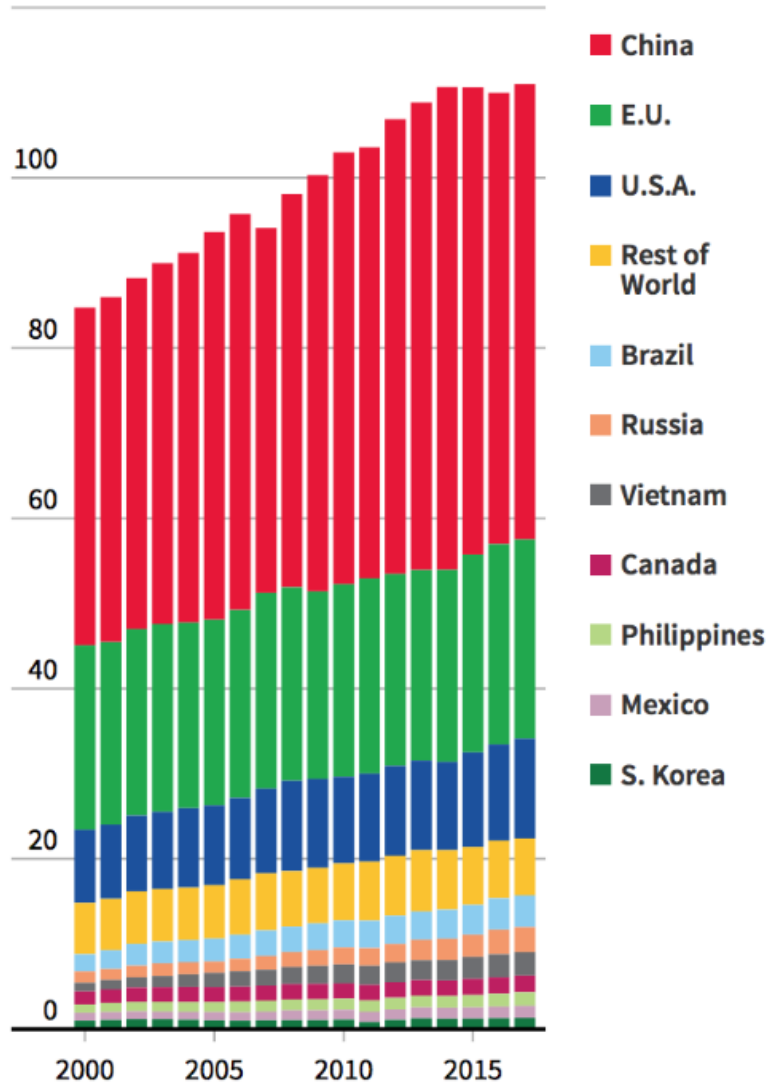
Total supply of selected ag. products in China (2013~17)



PORK OUTPUT BY COUNTRY

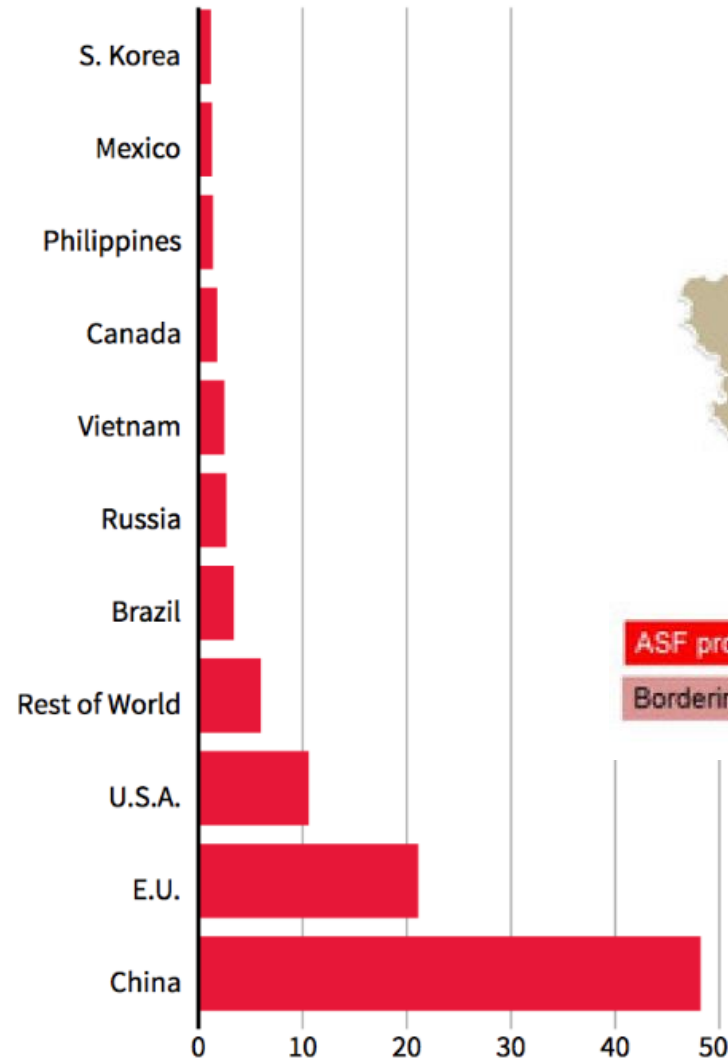
Pork output by top 10 producers plus rest of world

120 million tonnes

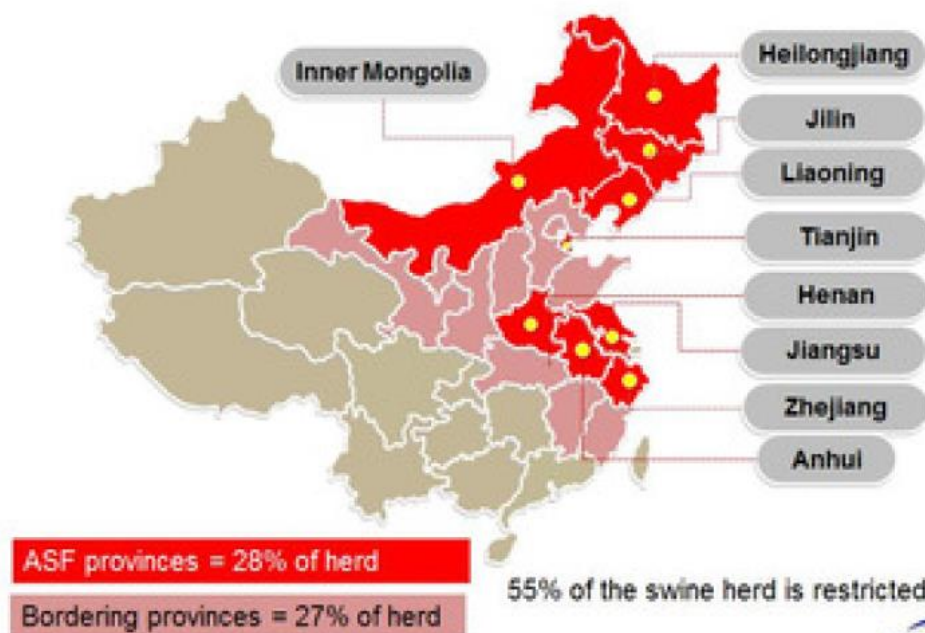


TOP PORK PRODUCERS BY SHARE

In percent as share of total in 2017



China ASF



Global AgriTrends

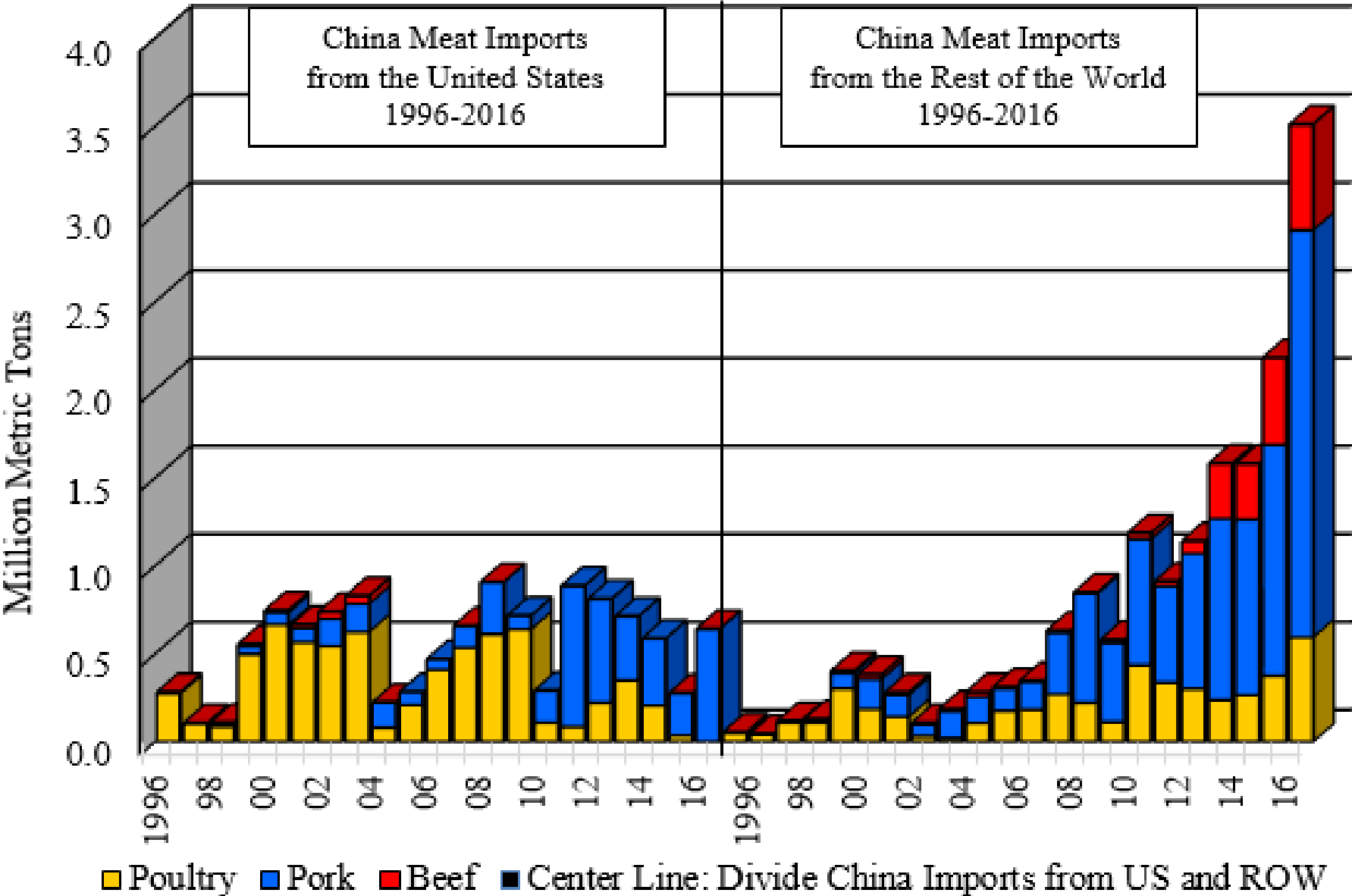
ASF penetrates China's south

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

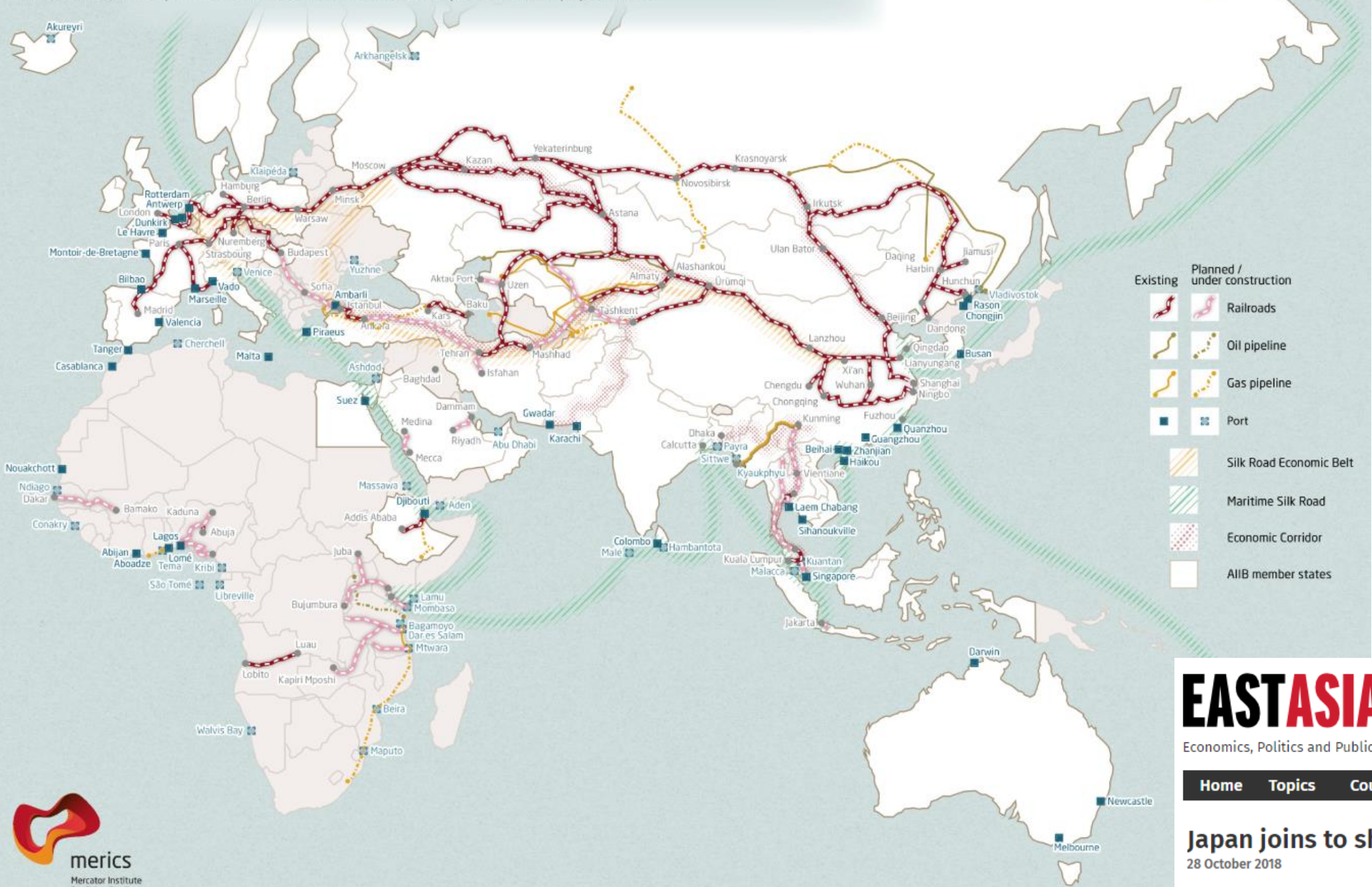
**US Loses
Market Share
as China
Increases
Meat Imports
from the
World**

Source: Choices
2017 Q2 Issue



The Belt and Road Initiative creates a global infrastructure network

China uses, acquires and builds railroads, ports and pipelines



China's Belt and Road Initiative

EASTASIAFORUM

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Japan joins to shape China's Belt and Road

28 October 2018

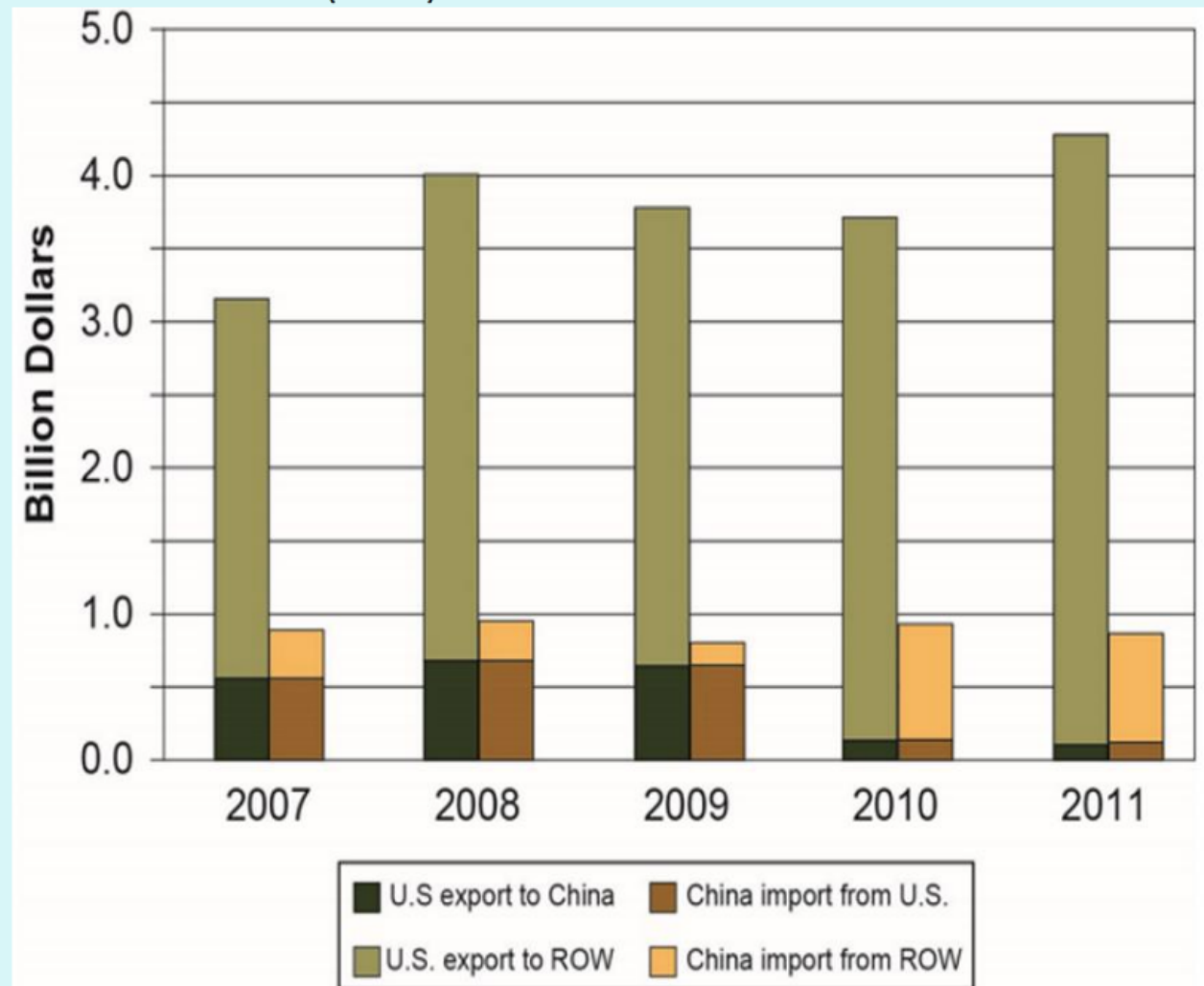
Author: Shiro Armstrong, ANU

Why Care About China?

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

with pork?

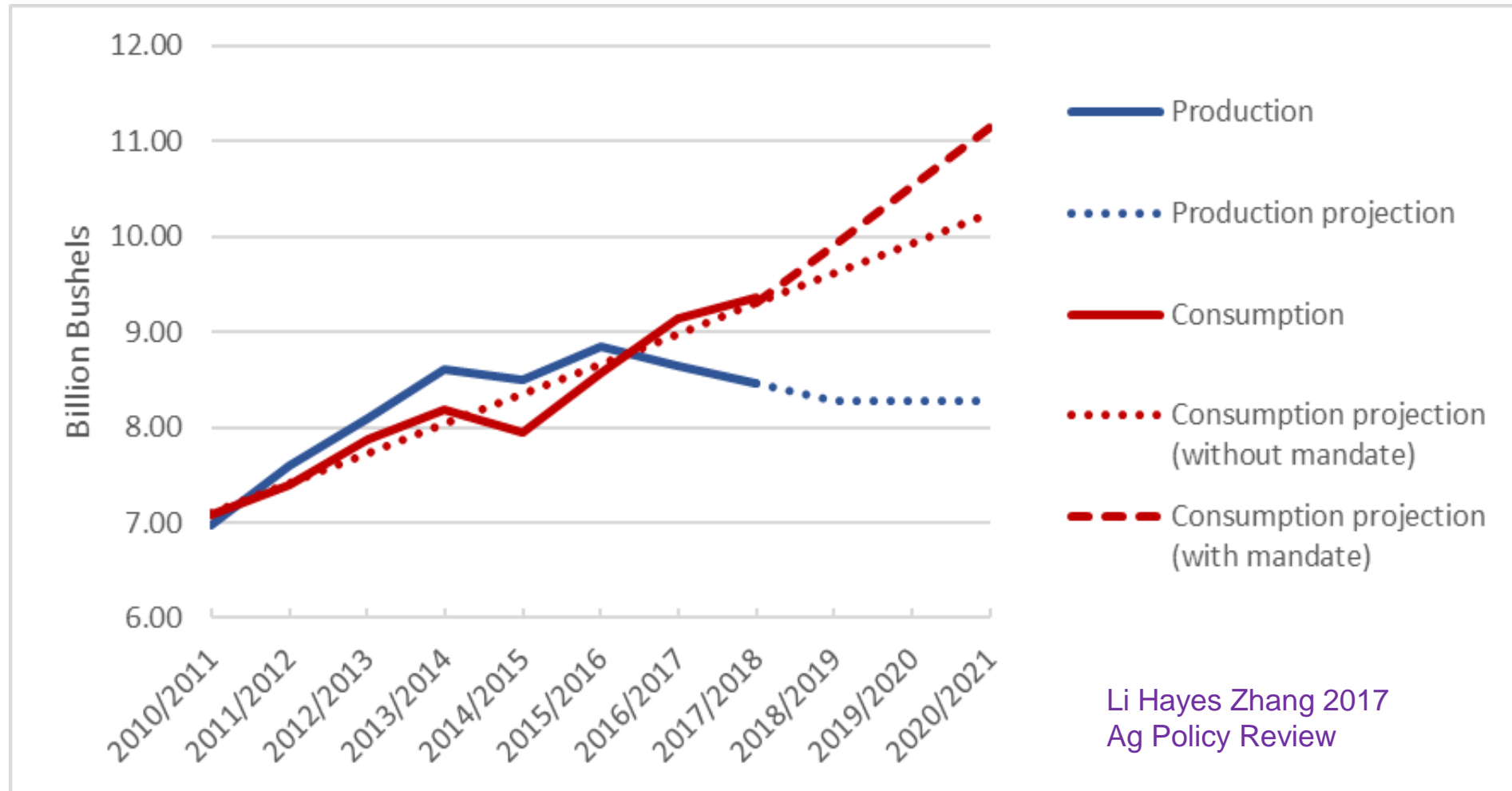
Figure 1. Chicken Trade between the United States, China, and the Rest of the World (ROW)



Sources: USDA-FAS (2018b), USDA (2018), and UN (2018).

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

Minghao Li, Wendong Zhang, Dermot Hayes, Riley Arthur, Yantao Yang, and Xiudong Wang. 2017. "[China's New Nationwide E10 Ethanol Mandate and Its Global Implications.](#)" *Agricultural Policy Review*. Center for Agricultural and Rural Development, Iowa State University.

China cannot produce enough ethanol domestically to fulfill the 2020 E10 ethanol mandate

4th largest producer – 1 Bil gal.

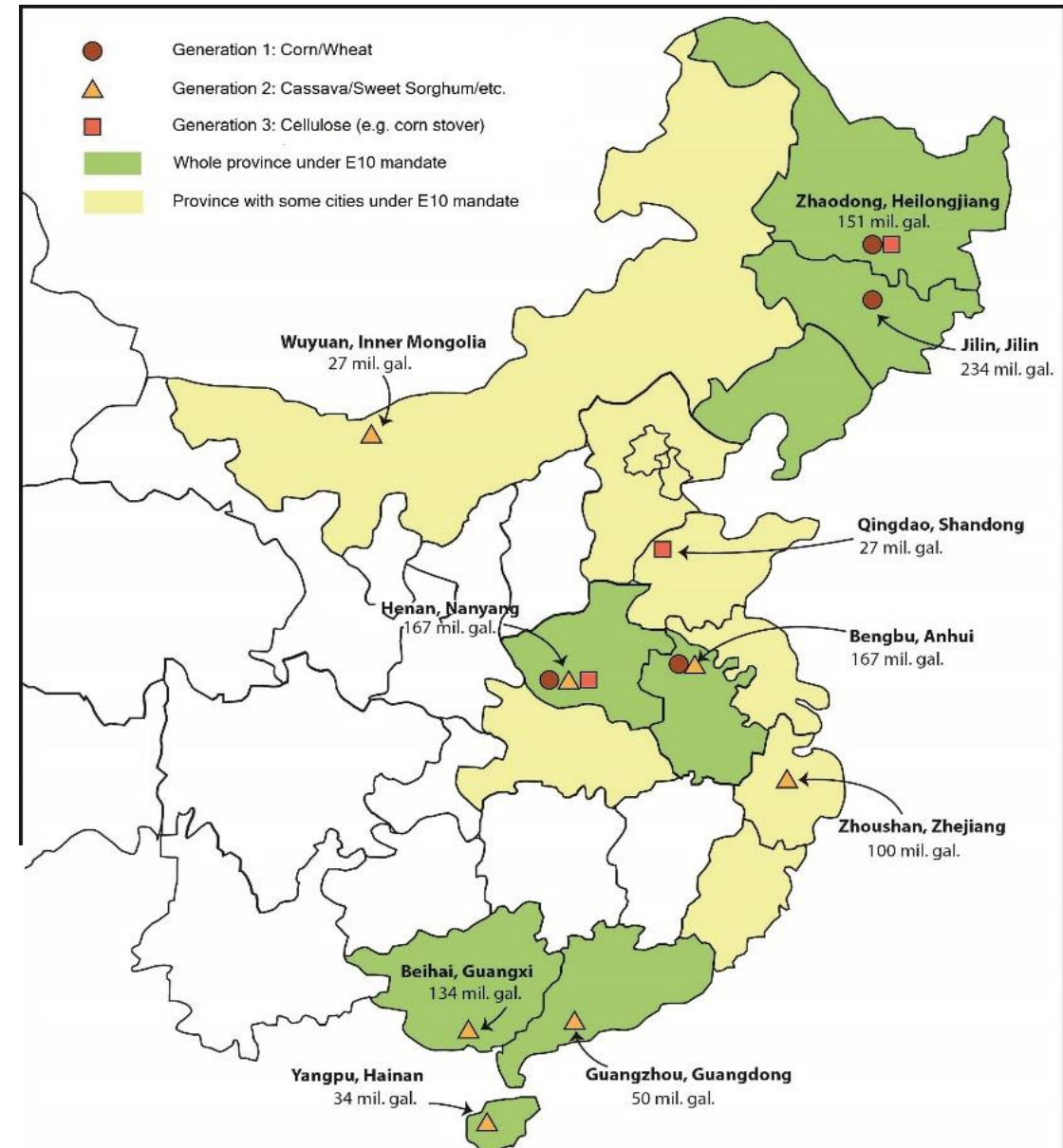
- After US, Brazil and EU
- Corn ethanol 64%
- Also uses cassava, sorghum, corn stover
- Imported 225 mil. gal, mainly from U.S.
- Tariff rose from 5% to 30%

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

#ENVIRONMENT SEPTEMBER 12, 2017 / 8:26 PM / 2 MONTHS AGO

China sets 2020 target for nationwide ethanol use to cut corn stocks

China's Ethanol Trial





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

Ag Decision Maker

CNN politics

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 myFT

US-China trade dispute + Add to myFT

China retaliates against new US tariffs as trade war escalates

Beijing slaps duties of up to 10 per cent on \$60bn of American imports

IOWA STATE UNIVERSITY
Extension and Outreach

Table 1. Market Facilitation Program Payment Details

Commodity	Payment Rate	Estimated Total Payments
Corn	\$0.01 per bushel	\$96 million
Cotton	\$0.06 per pound	\$276.9 million
Dairy	\$0.12 per hundredweight	\$127.4 million
Pork	\$8.00 per head	\$290.3 million
Sorghum	\$0.86 per bushel	\$156.8 million
Soybeans	\$1.65 per bushel	\$3.63 billion
Wheat	\$0.14 per bushel	\$119.2 million

RD
Development

CARD Policy Briefs

September 2018
18-PB 25

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 billion industry).
- 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

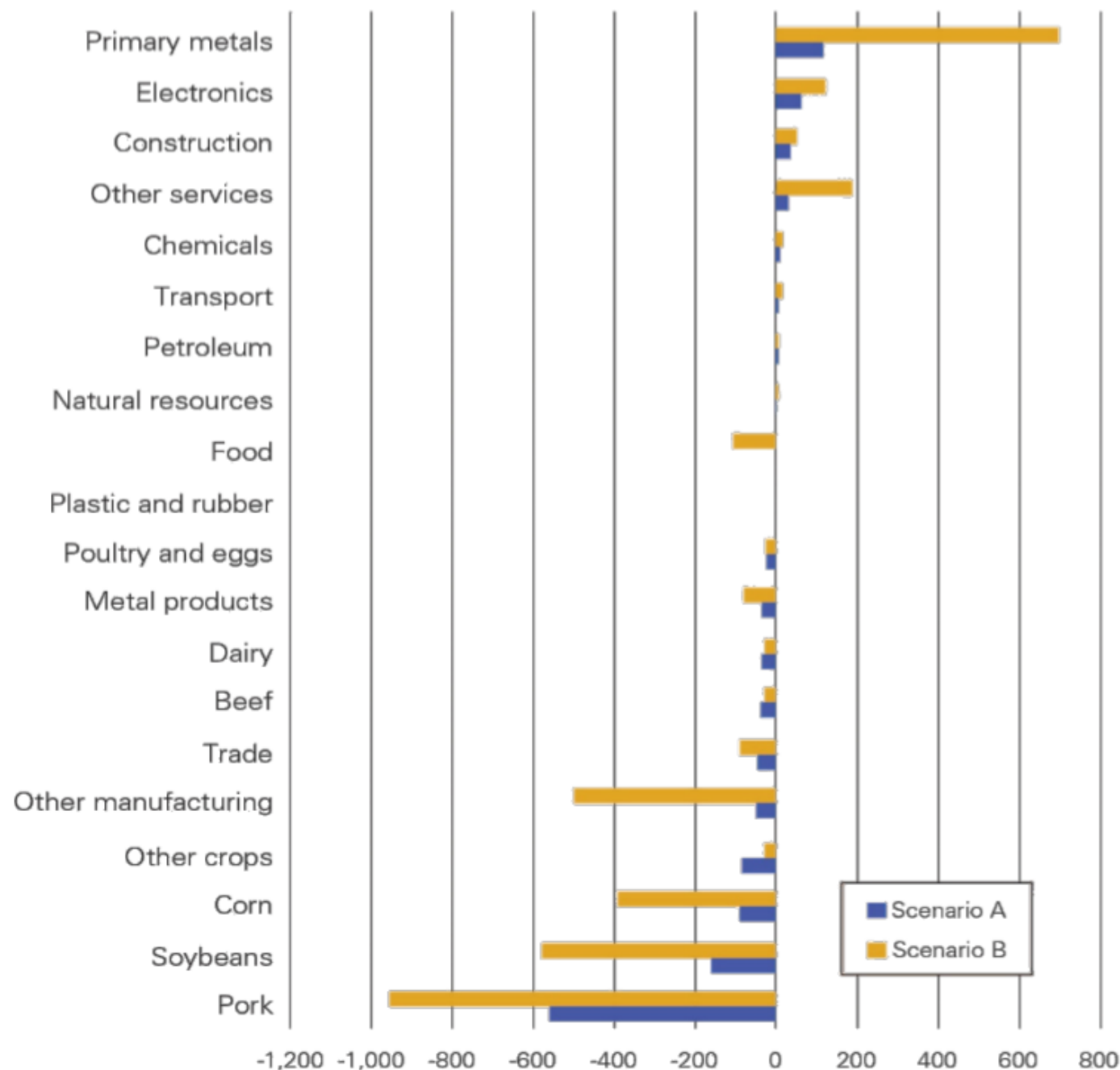


Figure 5. Gross output (revenue) impacts for Iowa industries.

Trade Dispute Impacts – Price Changes

Cash Crop Prices	05/31/2018	08/15/2018	% Change	Source
Corn	\$ 3.52	\$ 3.21	-8.8%	USDA-AMS
Soy	\$ 9.48	\$ 7.83	-17.4%	USDA-AMS
Ethanol	\$ 1.41	\$ 1.35	-4.3%	USDA-AMS

Trade Dispute Impacts – Iowa Revenue Loss

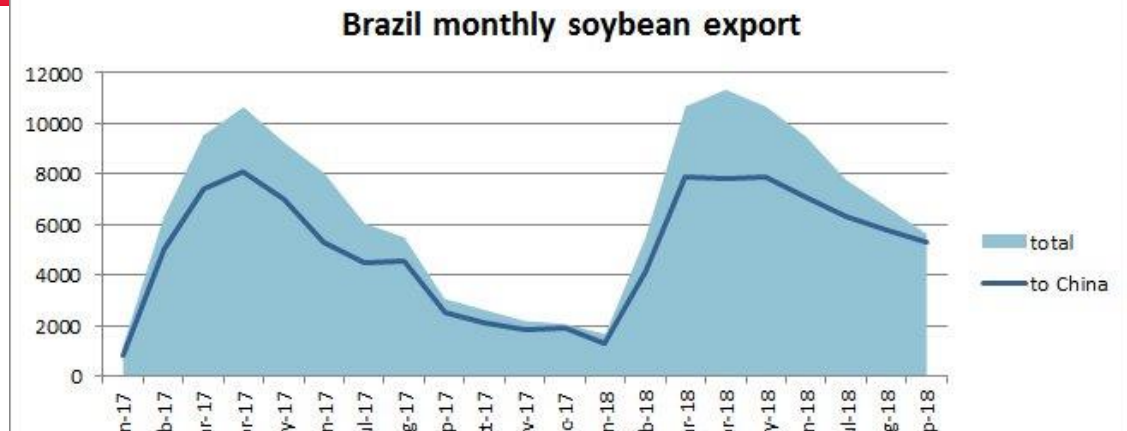
Commodity	Price damage w elasticity	Per-unit price drop due to China trade dispute	Iowa production	Revenue loss due to China trade dispute (mil. Dollars)
Corn	-4%	- \$ 0.13	2.60 bil. bu	-\$ 325 mil.
Soy	-10%	- \$ 0.95	0.58 bil. bu	-\$ 551 mil.
Ethanol	-2%	- \$ 0.03	4.20 bil. gal.	-\$ 105 mil.
Hog	-11%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



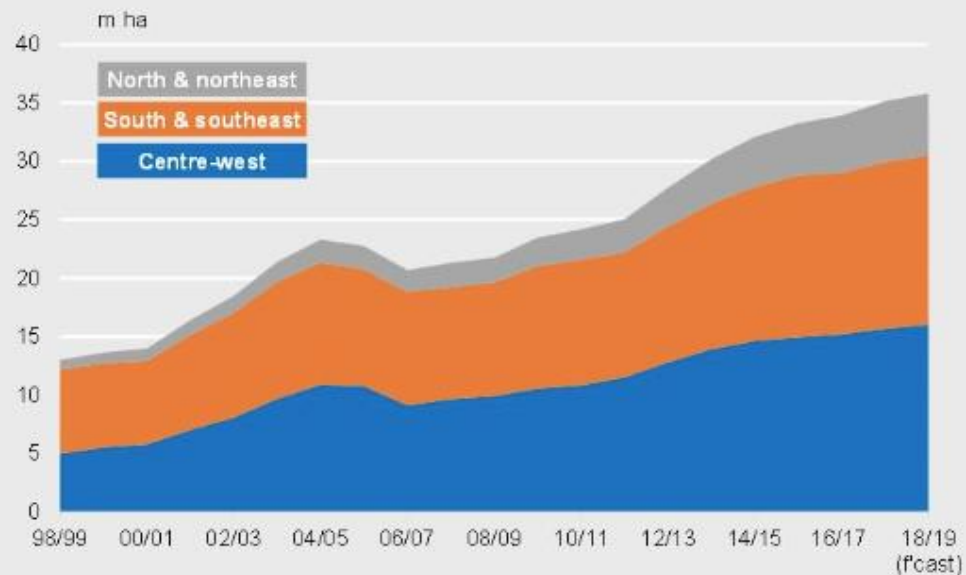
Bolsonaro wins Brazilian presidency

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

Soy Stats Worrying

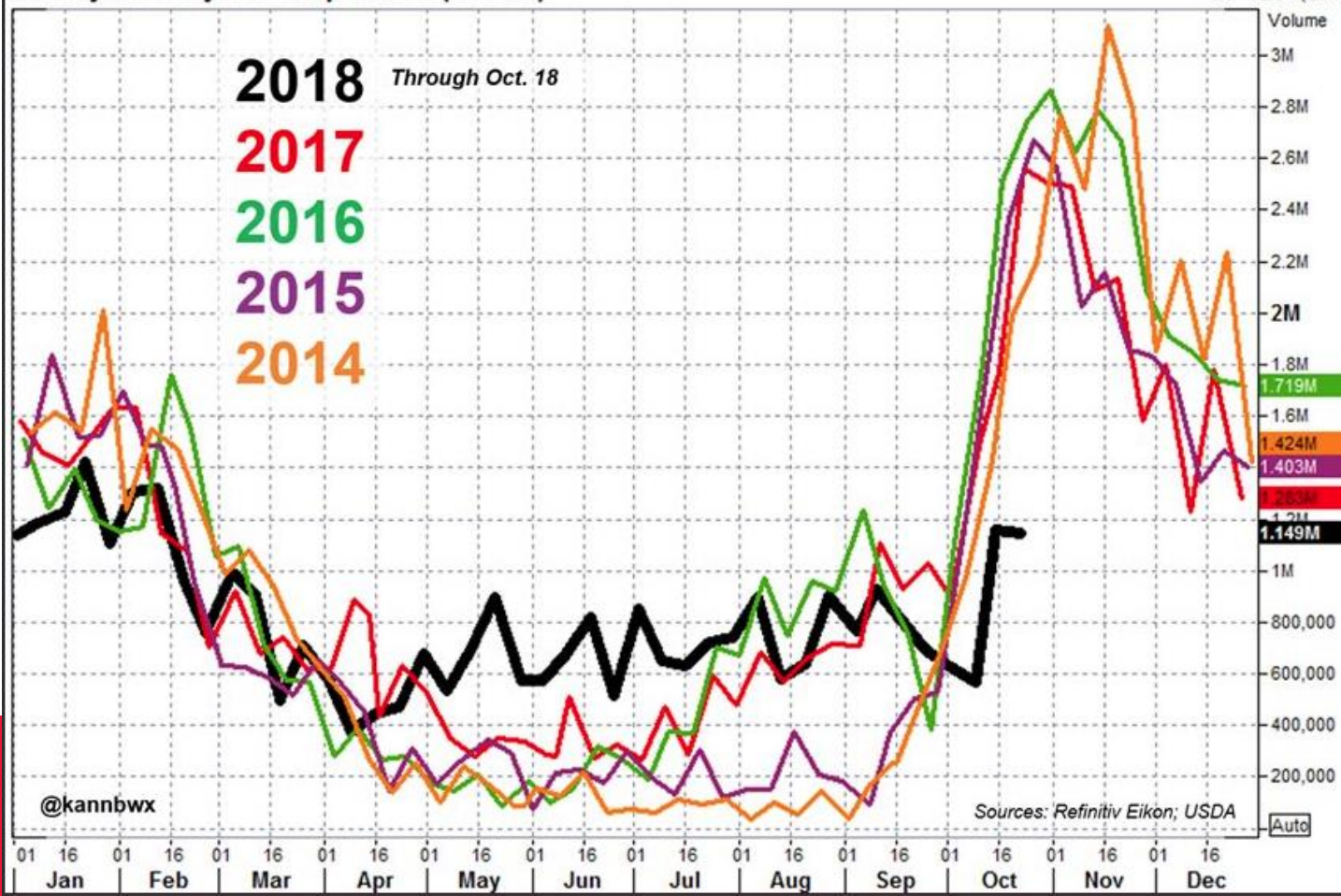


Soybeans: Brazilian area by region*



* Source: Conab, IGC estimates

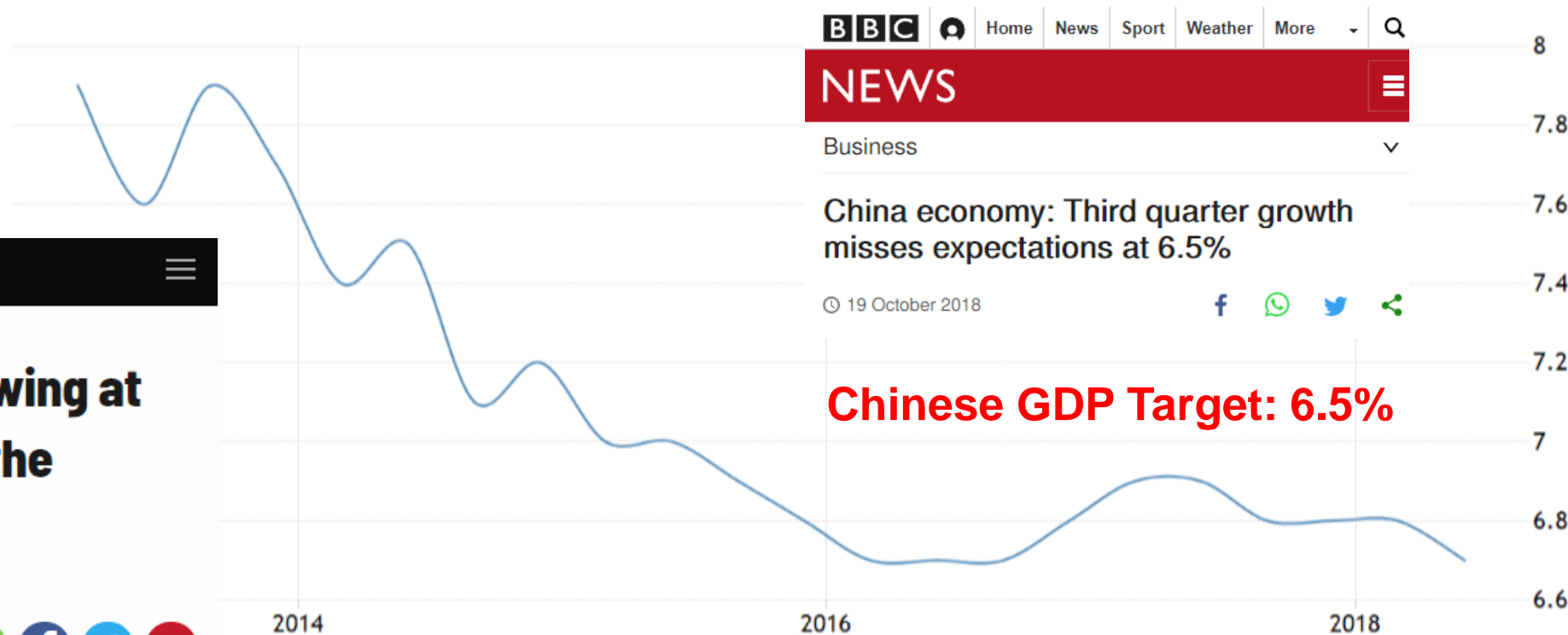
Weekly U.S. Soybean Inspections (tonnes)



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

China GDP Annual Growth Rate 1989-2018 | Data | Chart | Calendar

The Chinese economy advanced 6.7 percent year-on-year in the second quarter of 2018, easing from a 6.8 percent growth in the previous period and matching market consensus. It was the weakest pace of expansion since the third quarter of 2016 amid intensifying tariff battle with the US and efforts to deleverage debt and financial risks. GDP Annual Growth Rate in China averaged 9.61 percent from 1989 until 2018, reaching an all time high of 15.40 percent in the first quarter of 1993 and a record low of 3.80 percent in the fourth quarter of 1990.



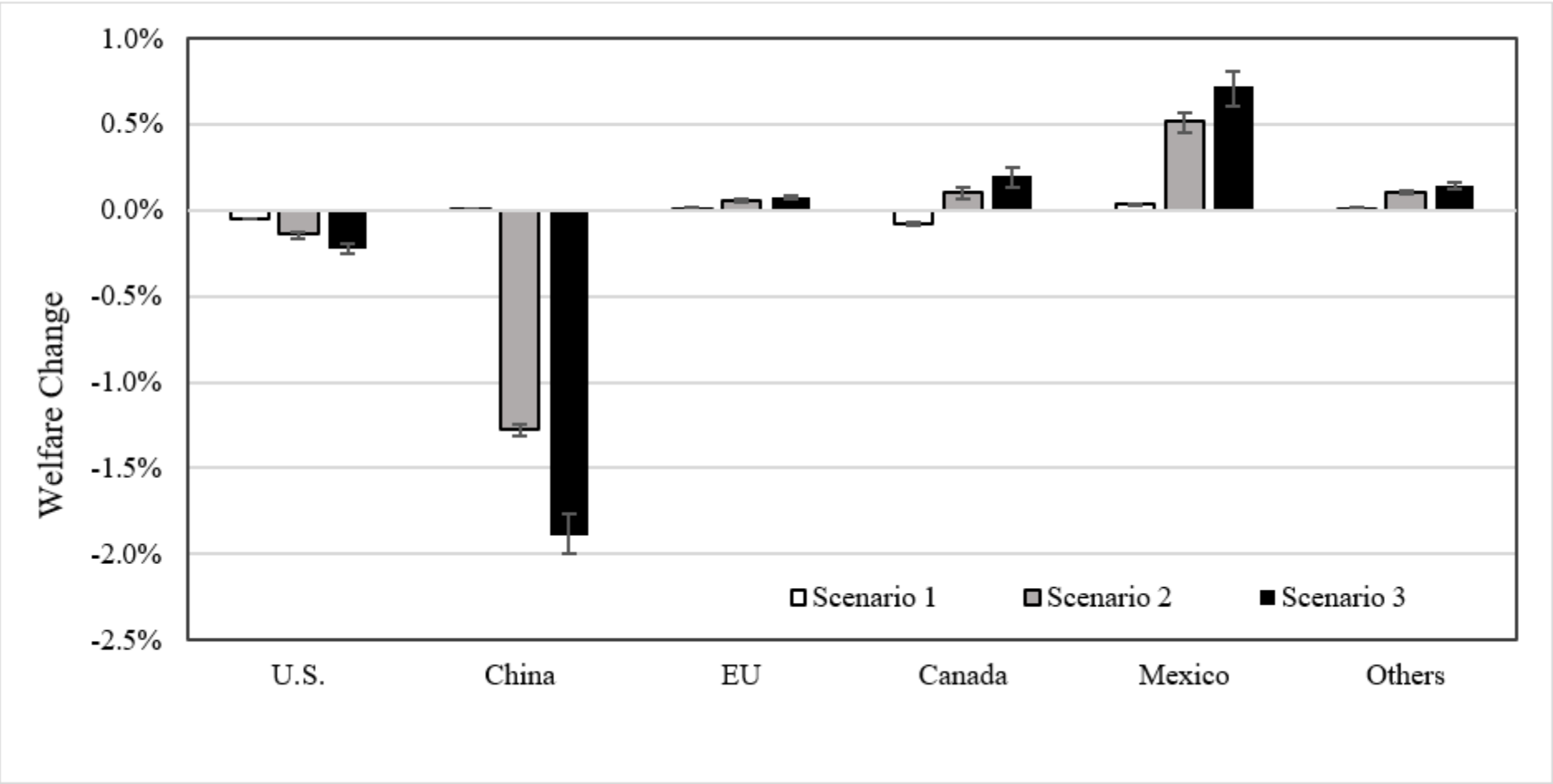
SOURCE: TRADINGECONOMICS.COM | NATIONAL BUREAU OF STATISTICS OF CHINA

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

Figure 1. Welfare changes in selected countries.



Impacts of trade disruptions in 2018 on global economy

**Edward Balistreri, Minghao Li,
Dermot Hayes, Wendong 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

SHI:SHH

PRICE (CNY)	TODAY'S CHANGE	SHARES TRADED	1 YEAR CHANGE	52 WEEK RANGE
2,542.10	↓ -56.74 / -2.18%	134.24k	↓ -25.60%	2,449.20 - 3,587.03

Data delayed at least 15 minutes, as of Oct 29 2018 07:13 BST.

Summary Charts Historical prices



S&P 500 INDEX

INX:IOM

PRICE (USD)	TODAY'S CHANGE	SHARES TRADED	1 YEAR CHANGE	52 WEEK RANGE
2,641.25	↓ -17.44 / -0.66%	2.95bn	↑ 2.33%	2,532.69 - 2,940.91

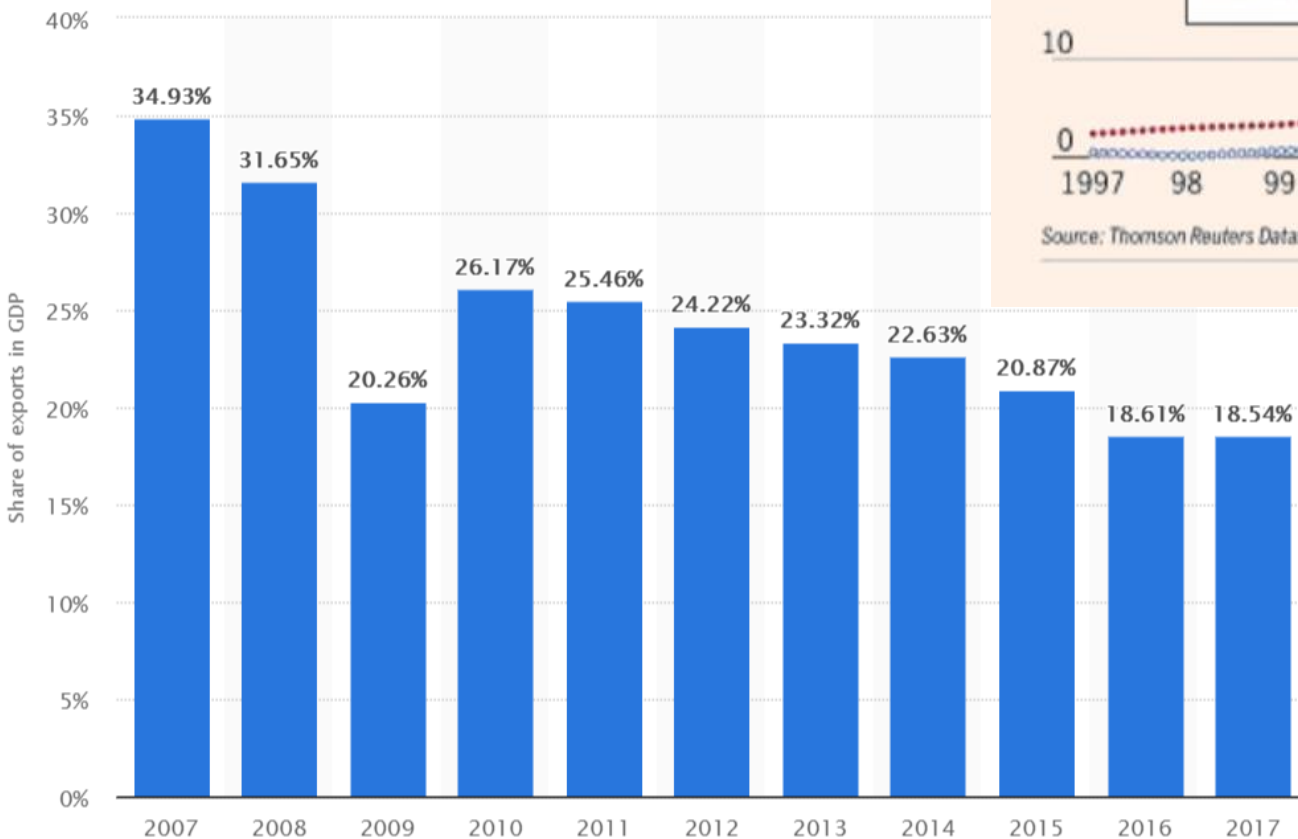
Data delayed at least 15 minutes, as of Oct 29 2018 20:20 BST.

Summary Charts Historical prices

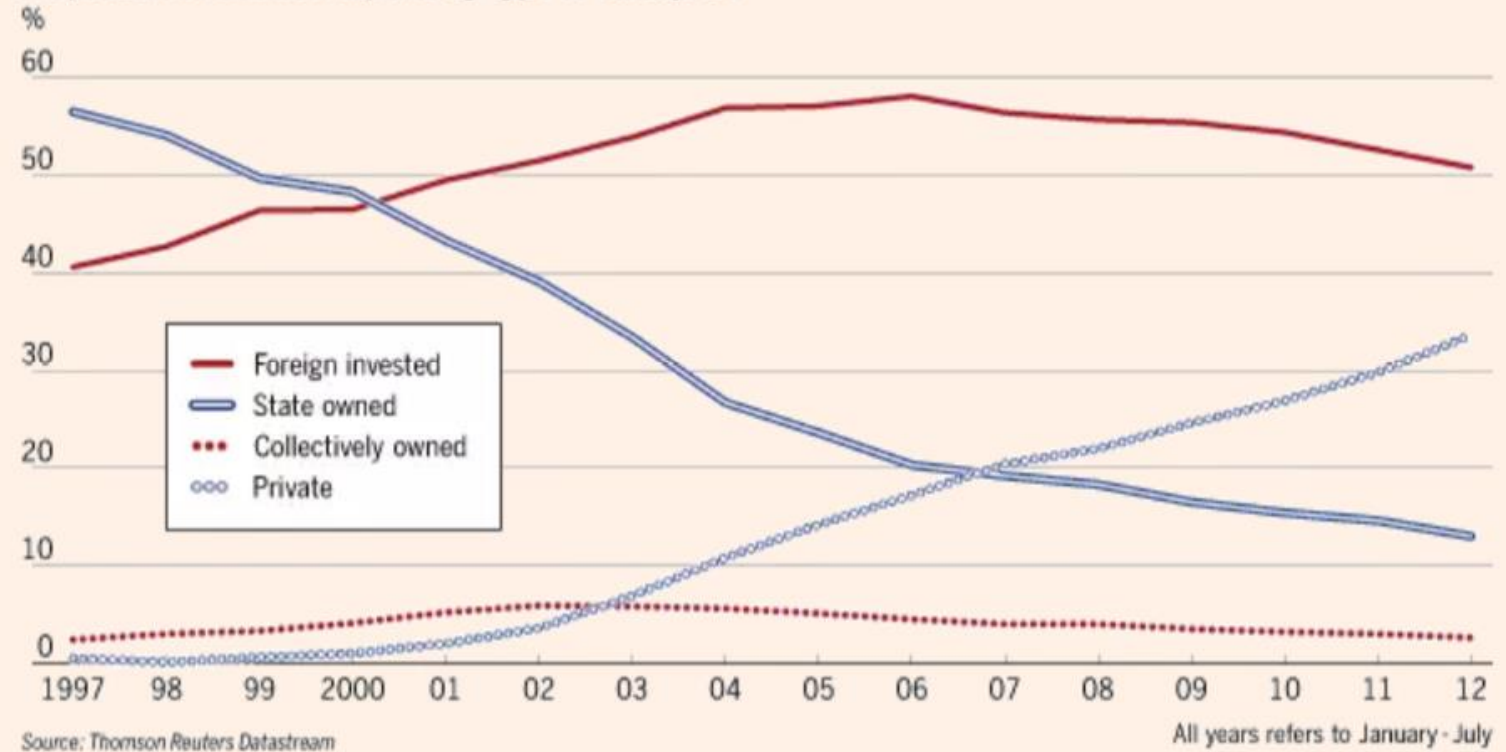


Will China be hurt enough to talk?

But...



Proportion of Chinese exports by type of enterprise



who makes China's exports

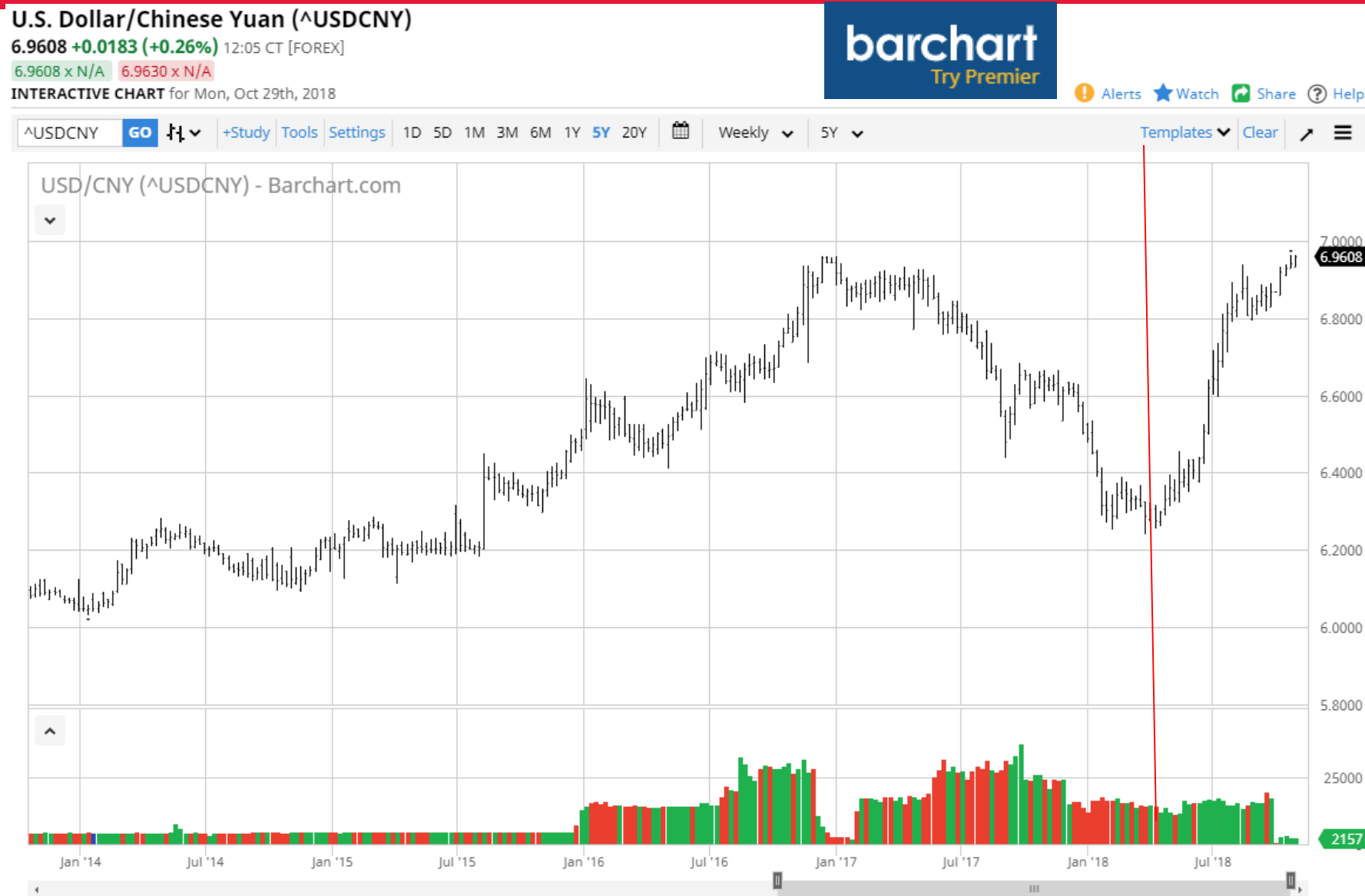
FINANCIAL TIMES

Ag Center
te.edu/china

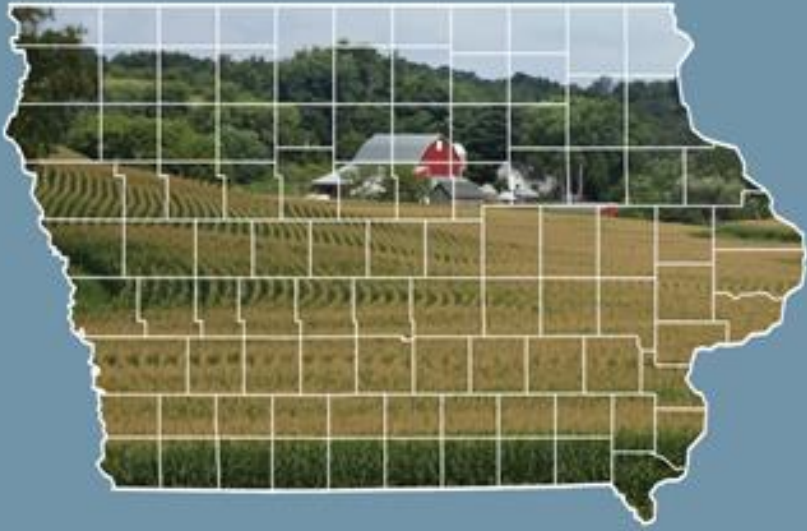
Will China be hurt enough to talk?

But...

China does not want to manipulate RMB, but trade concerns de facto result in a cheaper currency which facilitates exports



Iowa Farmland Ownership and Tenure Survey, 1982-2017: **A Thirty-Five Year Perspective**



IFA 1883 August 2018

IOWA STATE UNIVERSITY
Extension and Outreach

- 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>

Thank You!

Wendong Zhang

515-294-2536

wdzhang@iastate.edu

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