

# US-China Ag Trade & US Farmland Values: A New Paradigm

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AgExcellence & CoExcellence Meeting, Denver, CO, September 9, 2022



Dyson  
Cornell  
SC Johnson College of Business

# A Quick Introduction: Dr. Wendong Zhang

- Grew up in a rural county in Shandong Province, China
- Attended college in Shanghai and Hong Kong
- Ph.D. in Ag Econ from Ohio State in 2015
- Worked at Iowa State for 7 years, leading the Iowa Land Value Survey
- Moved to Cornell University Dyson School of Applied Economics & Mgmt in July 2022 (50% extension appointment)
- Research and extension interests:

**land value/ownership** <https://www.card.iastate.edu/farmland>

**ISU China Ag Center** <https://www.card.iastate.edu/china>

Cornell Institute for China Economic Research (CICER)

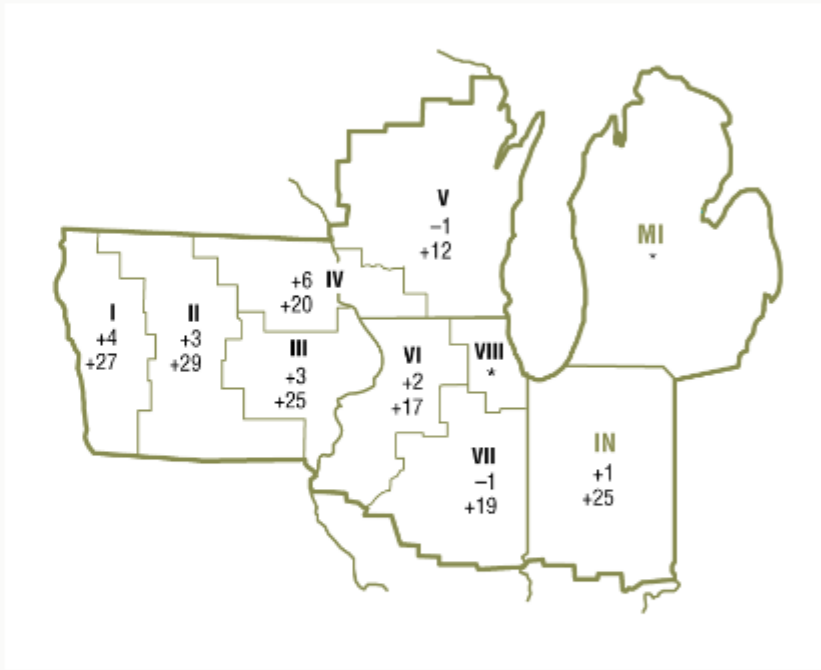
<http://china.dyson.cornell.edu/>



By David Oppedahl

### Percent change in dollar value of "good" farmland

	April 1, 2022 to July 1, 2022	July 1, 2021 to July 1, 2022
<b>Illinois</b>	0	+18
<b>Indiana</b>	+1	+25
<b>Iowa</b>	+4	+26
<b>Michigan</b>	*	*
<b>Wisconsin</b>	-1	+13
<b>Seventh District</b>	+2	+22



*Top: April 1, 2022 to July 1, 2022*

*Bottom: July 1, 2021 to July 1, 2022*

July 13, 2022

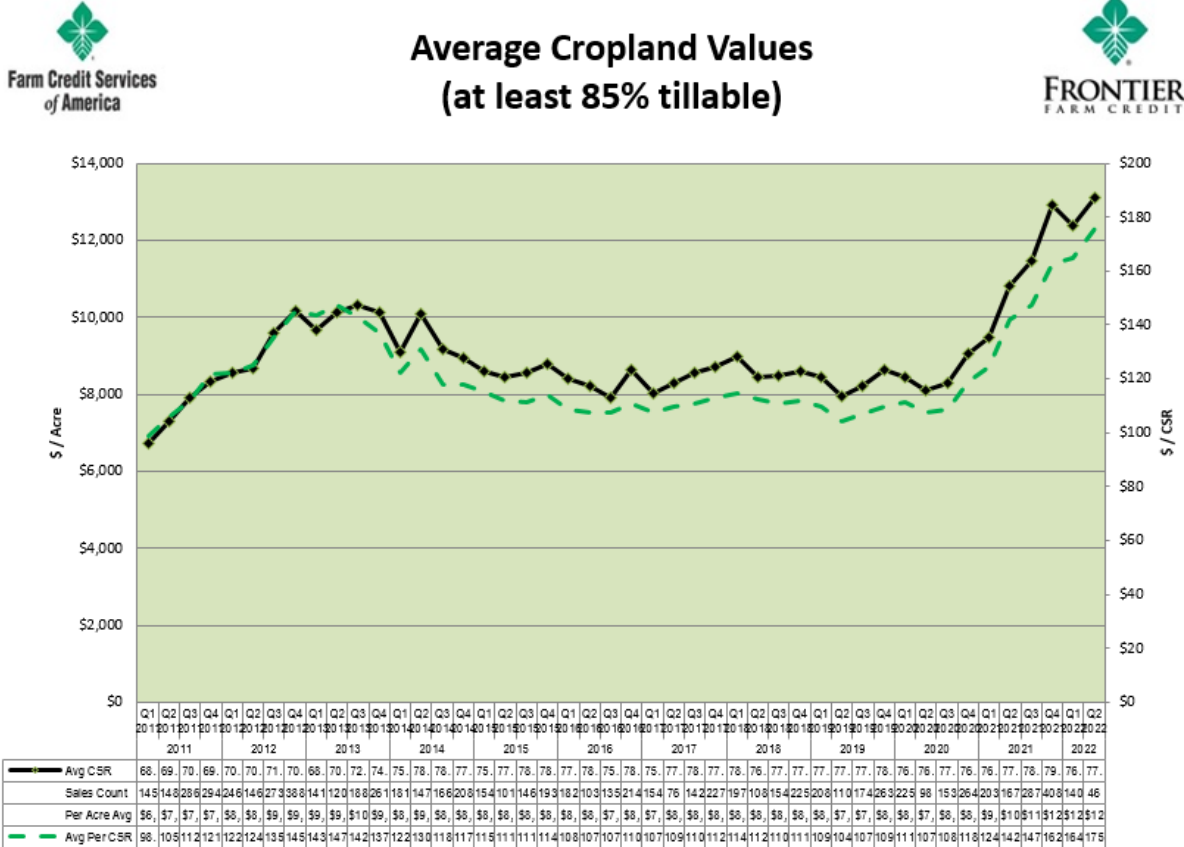
1340-A GEORGETOWN ROAD, QUARRYVILLE (24.656 ACRES)

24.656 Acre +/- Dairy Farm w/Stream & Pond – 2- **\$2,194,384**  
 Family Farmhouse – Bank Barn – Dairy Barn – Heifer  
 Barn – Tobacco Barn – Corn Barn – Garage/Shop/Barn  
 – Silos – Manure Pit – **Zoned General Business** –  
 Georgetown/Nine Points/Green Tree Area

BROCHURE | MAP | PHOTOS | TOPOGRAPHICAL | ONLINE BIDDING



Average Cropland Values  
 (at least 85% tillable)

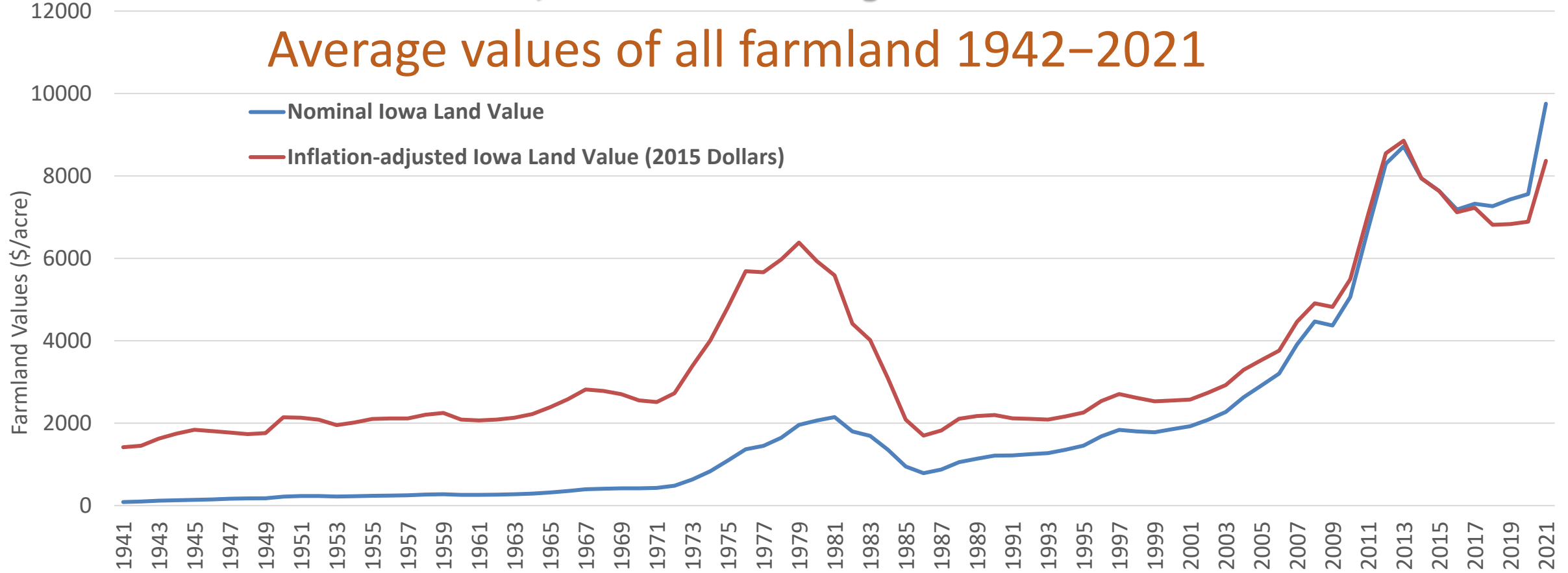


Iowa Cropland Values

Source: Kirk Manker, Farm Credit Services of America

<http://www.klinekreidergood.com/past-auctions>

# Nominal Iowa land values reach historic high But inflation-adjusted values are still lower than 2012, 2013 Nominal values +29%; Inflation-adjusted values +21%



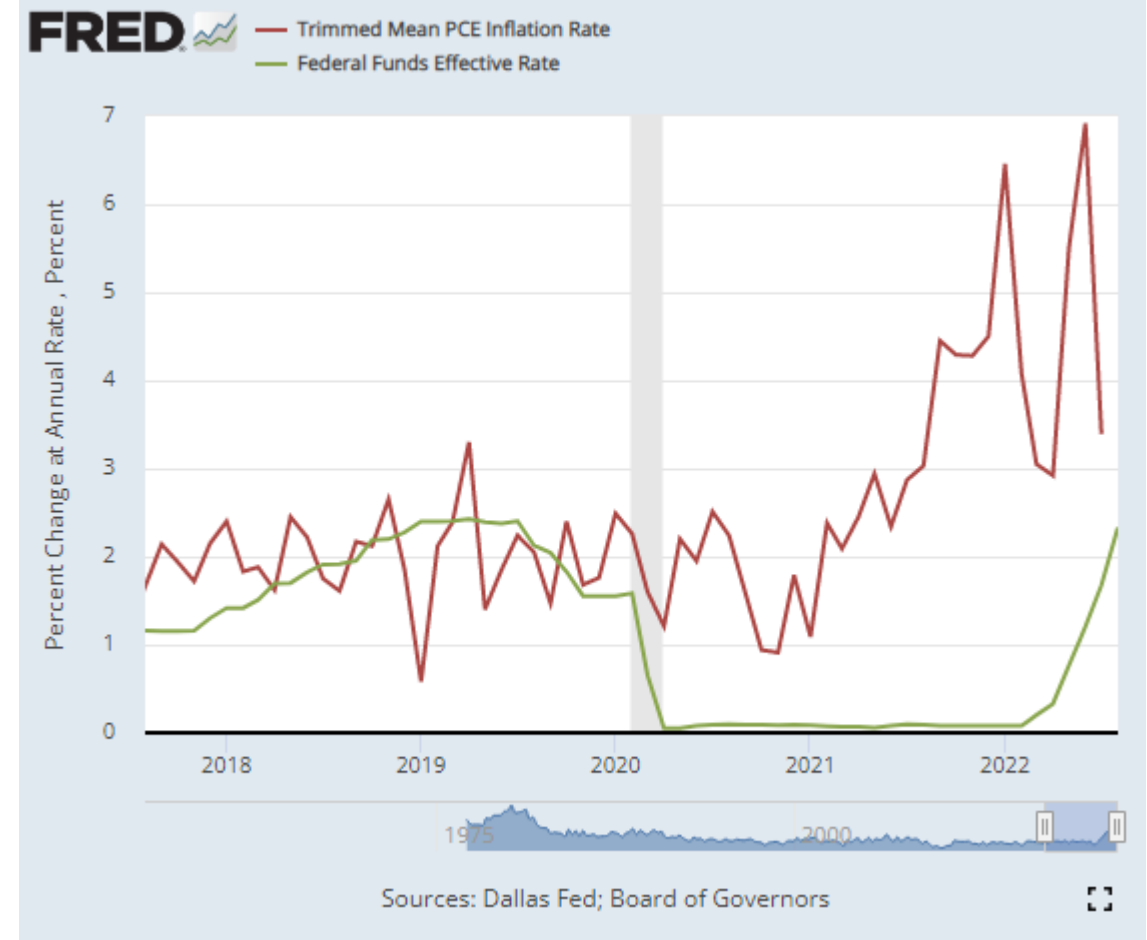
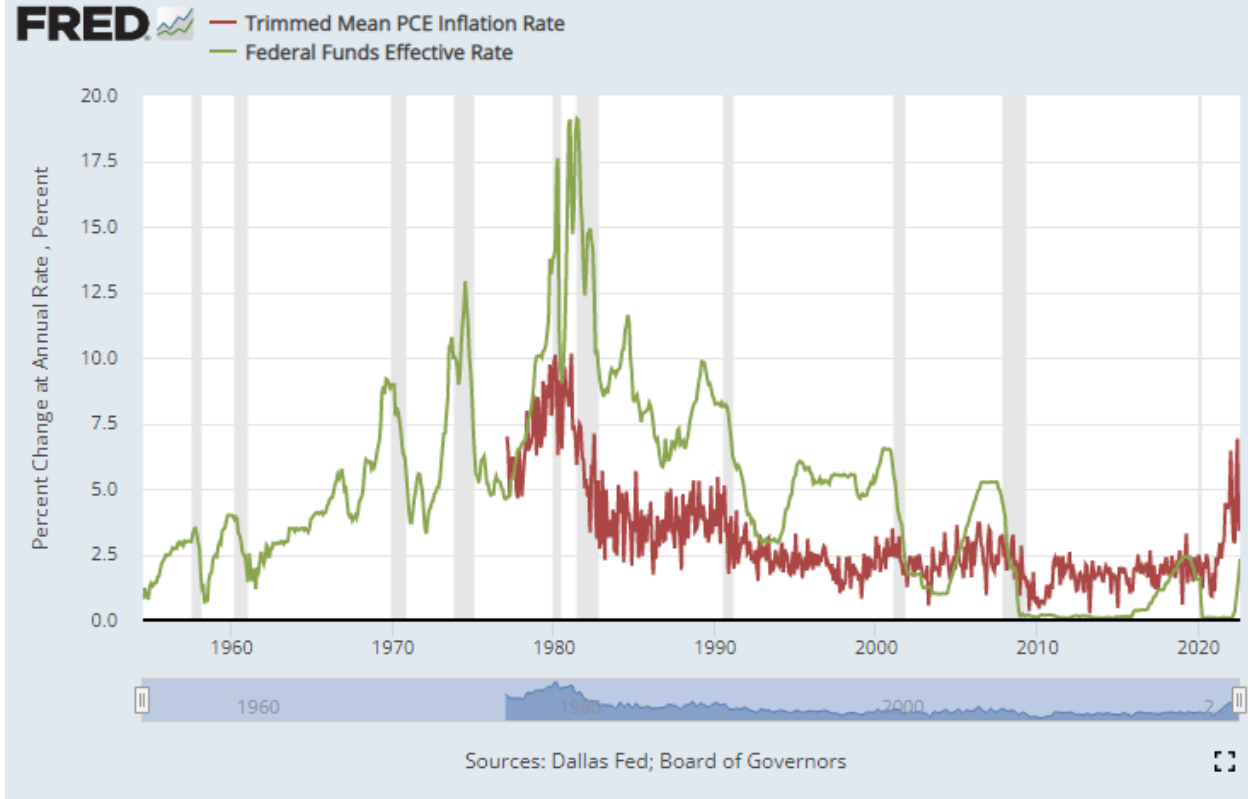
# **Local Land Supply and Demand**

## **Explain Variations in Land Market**

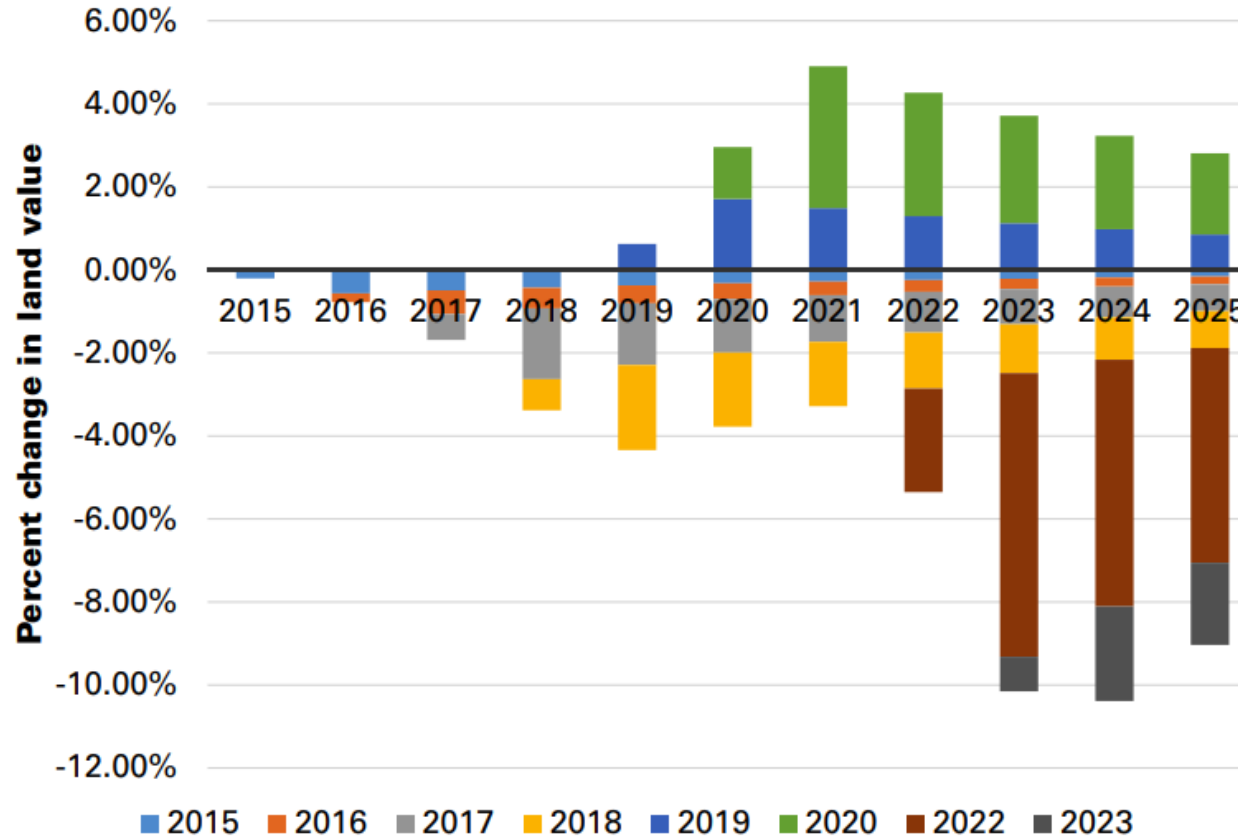
**Land Value = localized net  
income / universal interest rate**

# Federal Reserve raises interest rates amid stubbornly high prices and recession concerns

Jul 27, 2022 6:55 PM EDT



**Figure 1. The short- and long-term impacts of recent Federal Reserve interest rate moves on I-states' farmland values**

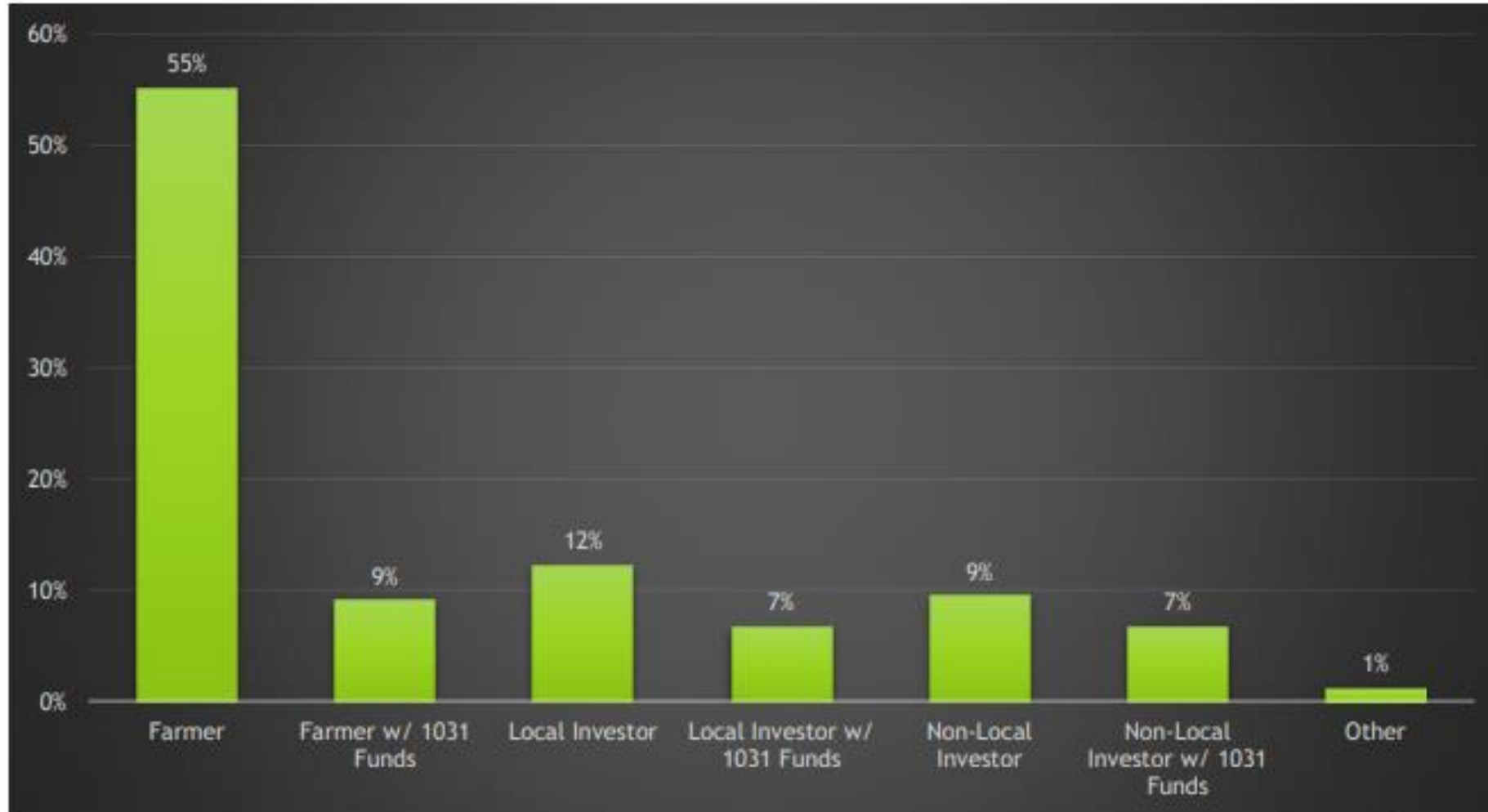


Note: the legend shows the policy years during which the Federal Reserve made changes in the benchmark federal funds rates. The 2022 and 2023 projections assume twelve and four hikes based on the Federal Reserve Dot Plot, or 3-percentage-point and 1-percentage-point increase.



# Who is Buying Iowa Farmland?

March - 2022



Realtor  
Land  
Institute

# Why Investors Buy Farmland?

- Beta

- The risk of a well-diversified portfolio depends on the market risk of the investments included in the portfolio
- Beta ( $\beta$ ) measures the sensitivity of an individual investment to market movements (Market: S&P 500)
- Farmland, Indiana: 0.107
- Individual Farms, Kansas: 0.064

## Excess Returns

- Farmland, Indiana:
  - 0.06 to 0.08
- Individual Farms, Kansas:
  - Average = 0.018
  - Top quartile = 0.057

# Predicted Cap Rate & Cash Rent – May 2022 for Northwest Iowa

	Avg % Change Since May 2022		Cap Rate (Rent to Value Ratio)
	Land Value	Cash Rent	
<b>Nov 2022</b>	2.8%	5.7%	2.5%
<b>Nov 2023</b>	1.9%	6.8%	2.5%
<b>Nov 2024</b>	-1.7%	4.9%	2.6%
<b>Nov 2025</b>	2.4%	9.9%	2.6%
<b>Nov 2040</b>	37.4%	36.7%	2.5%

[ISU 2022 Soil Management Land Valuation \(SMLV\) Conference  
https://www2.econ.iastate.edu/faculty/zhang/smlv/2022/](https://www2.econ.iastate.edu/faculty/zhang/smlv/2022/)

## Cash Rental Rates for Iowa 2022 Survey

*Ag Decision Maker*

File C2-10

### 2018-2022 Overall Average of Typical Cash Rents for Corn and Soybean Acres by Iowa Crop Reporting District (\$ per tillable acre)

	2018	2019	2020	2021	2022
District 1	\$237	\$231	\$239	\$242	\$270
District 2	225	219	225	238	261
District 3	244	237	248	253	278
District 4	236	235	237	247	276
District 5	237	231	232	245	271
District 6	235	229	232	243	265
District 7	207	207	203	214	243
District 8	174	174	176	188	203
District 9	203	210	205	221	240
<b>State</b>	<b>\$222</b>	<b>\$219</b>	<b>\$222</b>	<b>\$232</b>	<b>\$256</b>

<b>2022 SMLV Estimated Land and Commodity Price Forecasts</b>					
<b>LAND</b>	<b>AVG ESTIMATE OF % CHANGE SINCE MAY 2022</b>				
	<b>NW</b>	<b>NE</b>	<b>SW</b>	<b>SE</b>	<b>STATE</b>
<b>Nov 2022</b>	2.8%	1.4%	4.7%	4.5%	<b>2.9%</b>
<b>Nov 2023</b>	1.9%	0.5%	5.3%	7.8%	<b>3.0%</b>
<b>Nov 2024</b>	-1.7%	1.8%	4.8%	12.3%	<b>2.5%</b>
<b>Nov 2025</b>	2.4%	7.8%	11.5%	15.8%	<b>7.5%</b>
<b>Nov 2040</b>	37.4%	39.6%	67.5%	63.1%	<b>47.1%</b>
<b>Commodity Cash Prices (\$/bushel)</b>					
	<b>CORN</b>		<b>SOYBEAN</b>		
<b>May 2022</b>	\$	7.84	\$	16.08	
<b>Nov 2022</b>	\$	7.17	\$	14.83	
<b>Nov 2023</b>	\$	6.36	\$	13.52	
<b>Nov 2024</b>	\$	5.81	\$	12.68	

# The current farm downturn vs the 1920s and 1980s farm crises: An economic and regulatory comparison

Wendong Zhang, [Kristine Tidgren](#) ▼

[Agricultural Finance Review](#)

ISSN: 0002-1466

Article publication date: 5 March 2018

[Reprints & Permissions](#)

DOWNLOADS



287

Variable	Golden eras			Crises and declines		
	1910-1920	1973-1981	2003-2013	1921-1933	1981-1987	2013-2017
<i>Average annual percent change in nominal terms (%)</i>						
Iowa land value	9.3	19.5	13.7	-8.9	-14.0	1.1
US gross income	9.0	9.8	7.1	-4.7	2.1	-2.4
US net income	8.4	5.3	10.7	-3.6	7.3	-6.4
<i>Average annual percent change in inflation-adjusted terms (%)</i>						
Iowa land value	1.7	9.6	11.0	-5.8	-15.0	-0.1
US gross income	1.1	0.7	4.5	-2.0	-2.4	-3.7
US net income	0.5	-3.4	8.2	-1.3	2.7	-7.6

**Table I.** Golden eras vs crises and declines: average annual percentage change in nominal and inflation-adjusted Iowa land values and US farm income

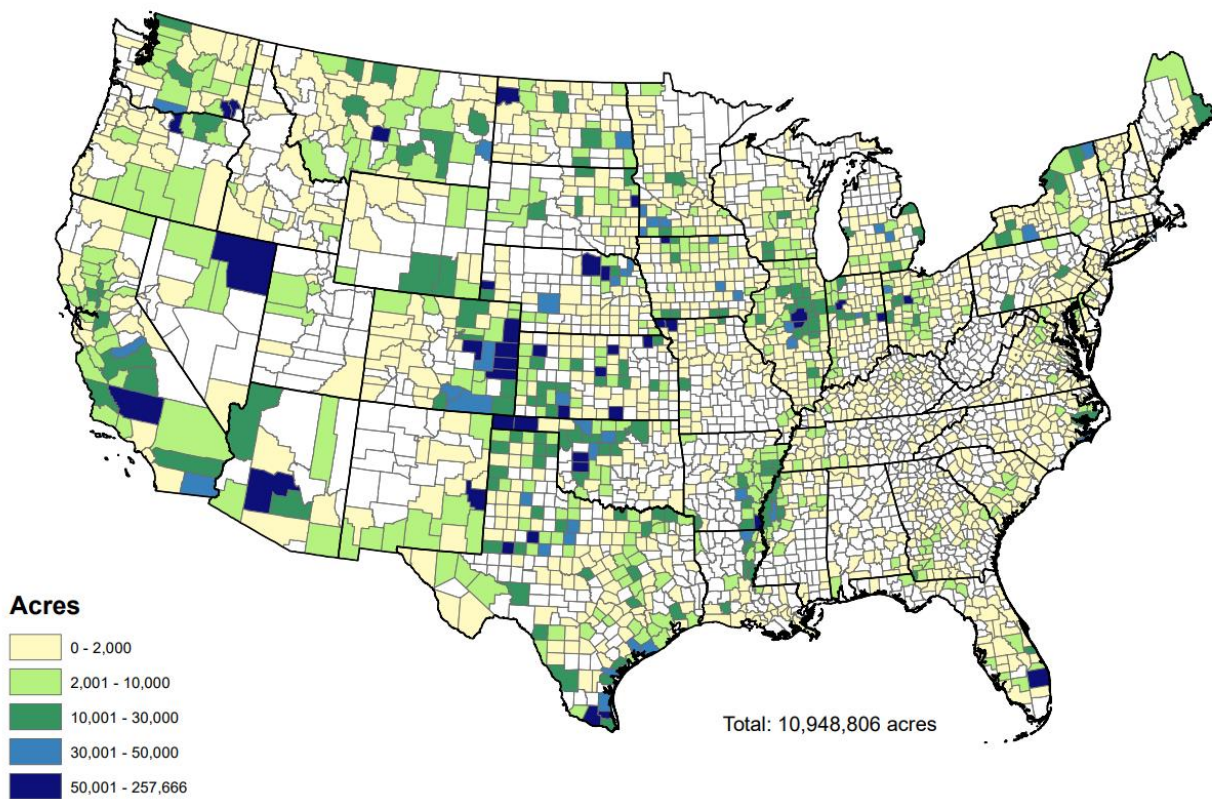
**Sources:** Iowa state average land values are based on USDA Census of Agriculture and USDA NASS Land Value and Cash Rent Survey (USDA NASS, 2017), while the data on US gross and net farm income are from the USDA Economic Research Service Farm Income and Wealth Statistics database (USDA ERS, 2017)



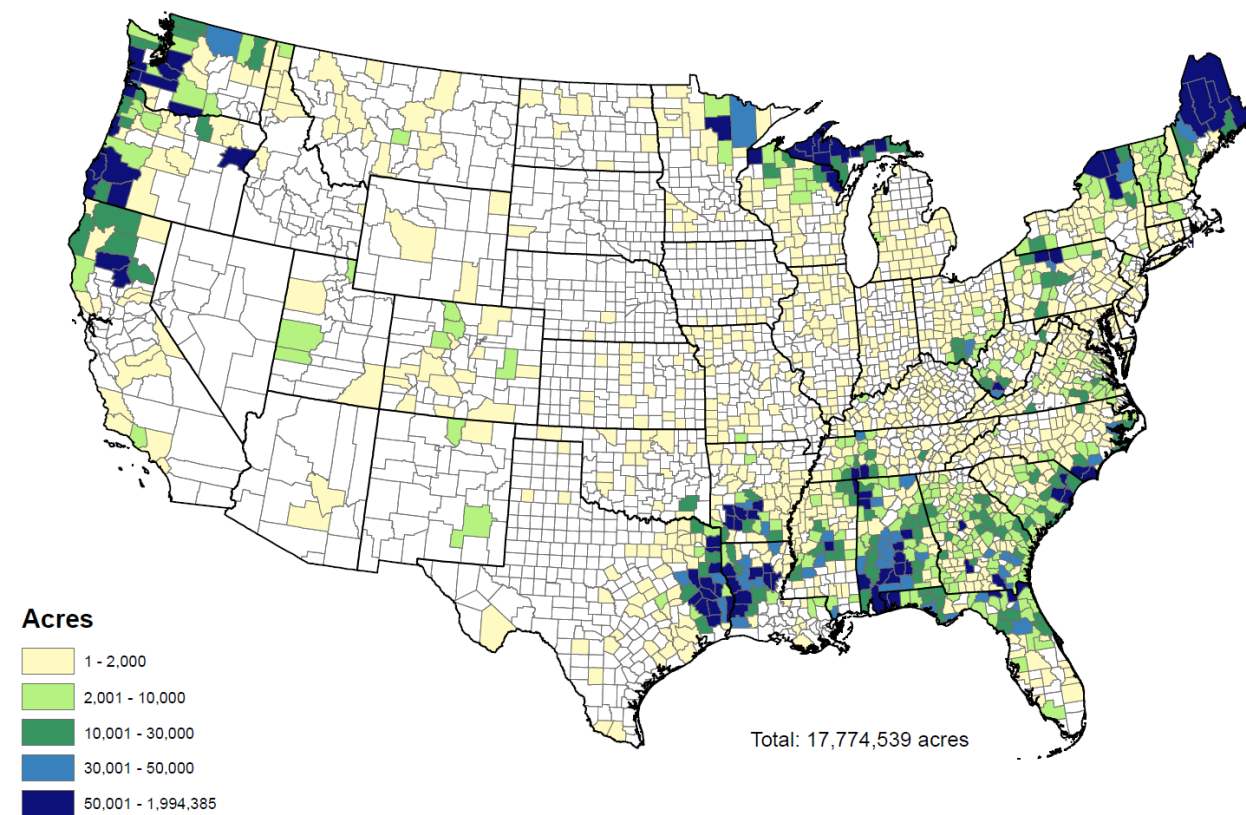
# Foreign holdings of cropland and forest land as of December 2020

- USDA AFIDA report

**Figure 4** County Concentration of Foreign Holdings of Crop Land as of December 31, 2020



**Figure 6** County Concentration of Foreign Holdings of Forest Land as of December 31, 2020



# Foreign ownership of US farmland



Florida Gov. Ron DeSantis calls out the Chinese Communist Party for buying giant chunks of farmland and property in his state, saying it's a 'huge problem'

By Stephen M. Lepore For Dailymail.Com  
15:57 EDT 23 Jul 2022 , updated 21:12 EDT 23 Jul 2022



Forbes

## Why A Secretive Chinese Billionaire Bought 140,000 Acres Of Land In Texas

John Hyatt Forbes Staff

*I write about wealth, billionaires and their companies.*

Follow

Aug 9, 2021, 07:10am EDT



The inside story of Sun Guangxin's plan for a wind farm in the Lone Star state and how it incurred the wrath of U.S. lawmakers and environmentalists, becoming a flashpoint in U.S.-China relations.



**TOM COTTON**  
SENATOR FOR ARKANSAS

AUGUST 02, 2022

## COTTON, TUBERVILLE INTRODUCE BILL TO PROHIBIT THE CHINESE COMMUNIST PARTY FROM PURCHASING AMERICAN LAND

FOR IMMEDIATE RELEASE

Contact: [James Arnold](#) or [Mary Collins Atkinson](#) (202) 224-2353

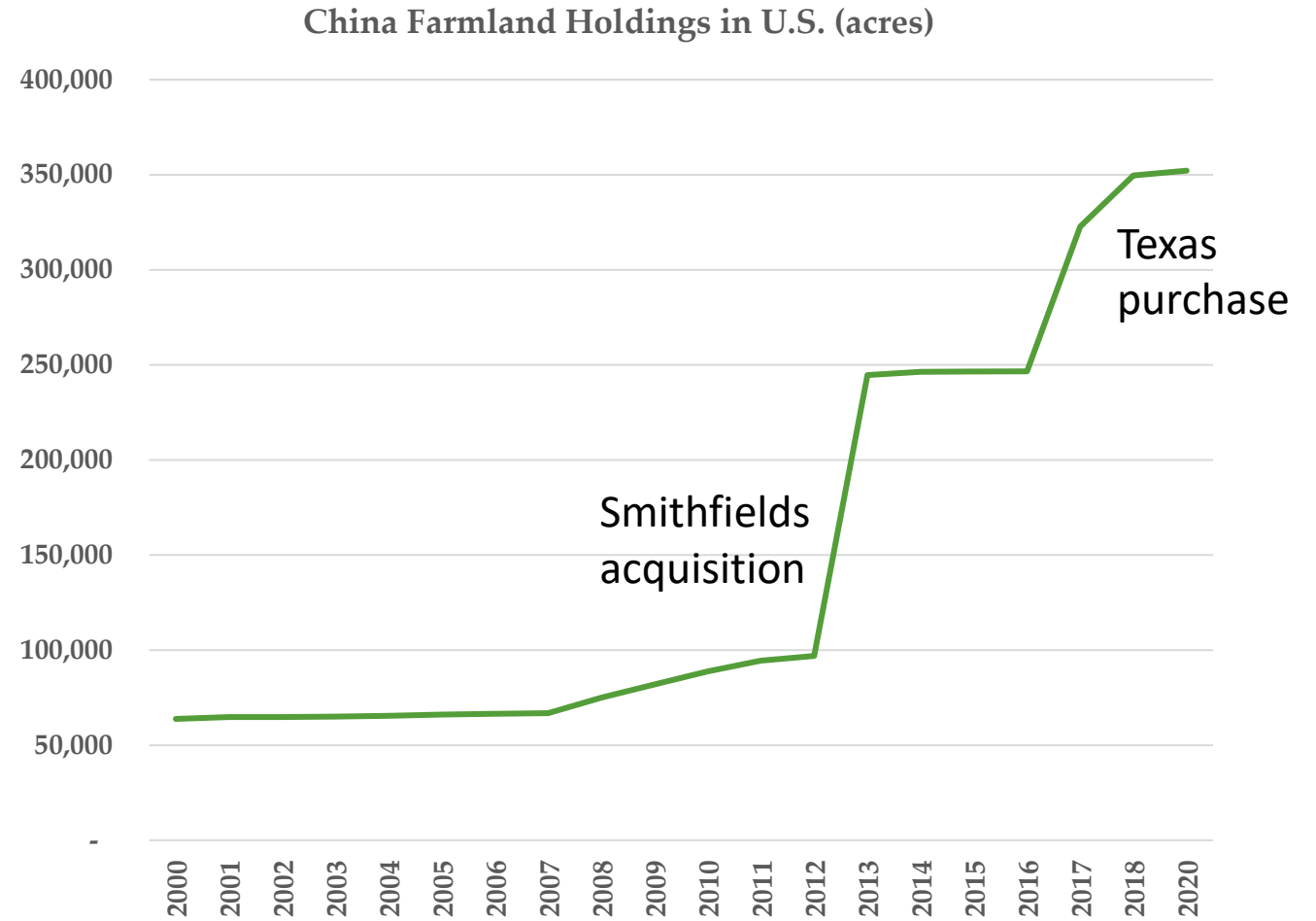
August 2, 2022

## AFIDA Cropland holdings

Country	Holdings (acres)
Canada	3,860,595
Italy	1,672,283
Portugal	794,067
Germany	603,871
United Kingdom	601,886

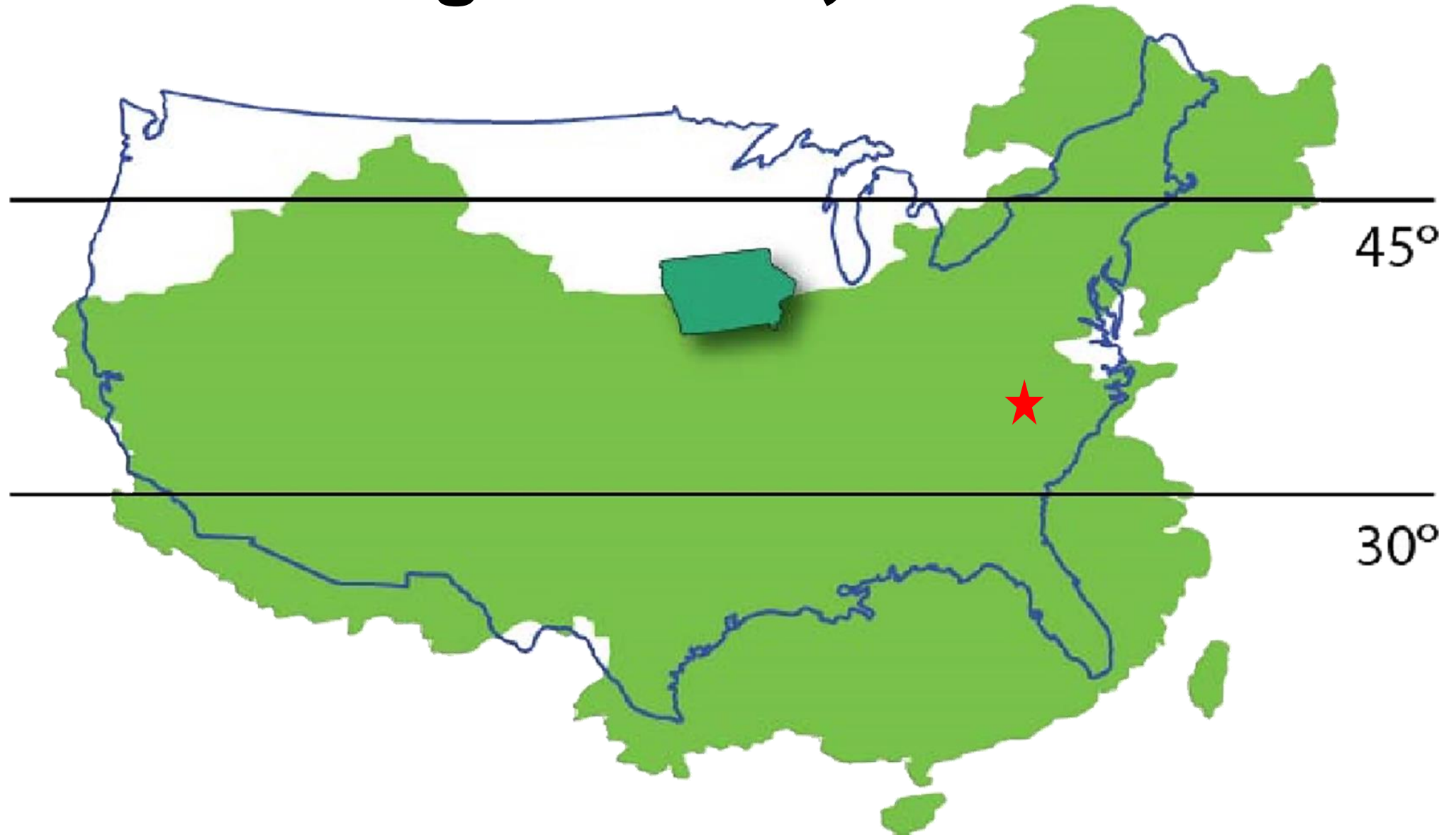
## AFIDA total land holdings

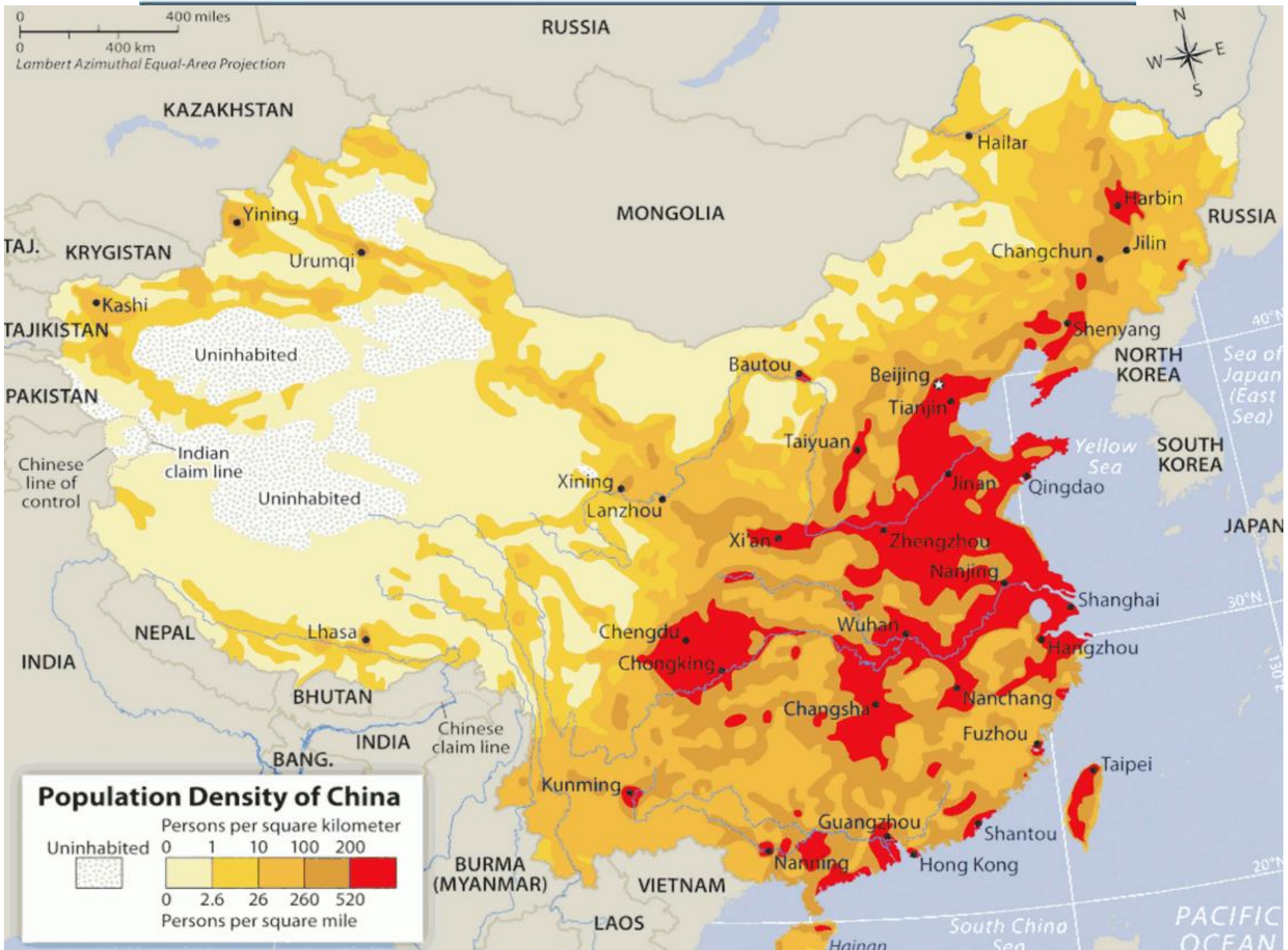
Country	Holdings (acres)
Canada	12,361,087
Netherlands	4,944,700
Italy	2,702,871
United Kingdom	2,329,952
Germany	2,063,406





# Commodity Agriculture is Comparative Advantage for U.S., not China





0 400 miles  
0 400 km  
Lambert Azimuthal Equal-Area Projection



RUSSIA  
KAZAKHSTAN  
MONGOLIA  
TAJ. KRYGISTAN  
TAJIKISTAN  
PAKISTAN  
NEPAL  
INDIA  
BHUTAN  
INDIA  
BURMA (MYANMAR)  
VIETNAM  
LAOS  
RUSSIA  
NORTH KOREA  
SOUTH KOREA  
JAPAN  
Sea of Japan (East Sea)  
Yellow Sea  
Taipei  
Shanghai  
Hangzhou  
Nanchang  
Fuzhou  
Guangzhou  
Shantou  
Hong Kong  
Hainan  
South China Sea  
PACIFIC OCEAN  
40°N  
30°N  
20°N  
130°E

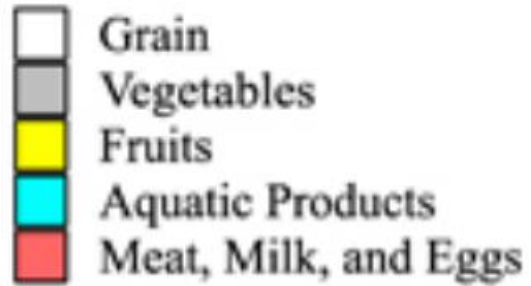
Hailar  
Harbin  
Jilin  
Changchun  
Shenyang  
Beijing  
Tianjin  
Bautou  
Taiyuan  
Xining  
Lanzhou  
Xi'an  
Zhengzhou  
Nanjing  
Wuhan  
Chengdu  
Chongking  
Changsha  
Kunming  
Nanning

Yining  
Urumqi  
Kashi  
Uninhabited  
Uninhabited  
Chinese line of control  
Indian claim line  
Chinese claim line  
Chinese claim line

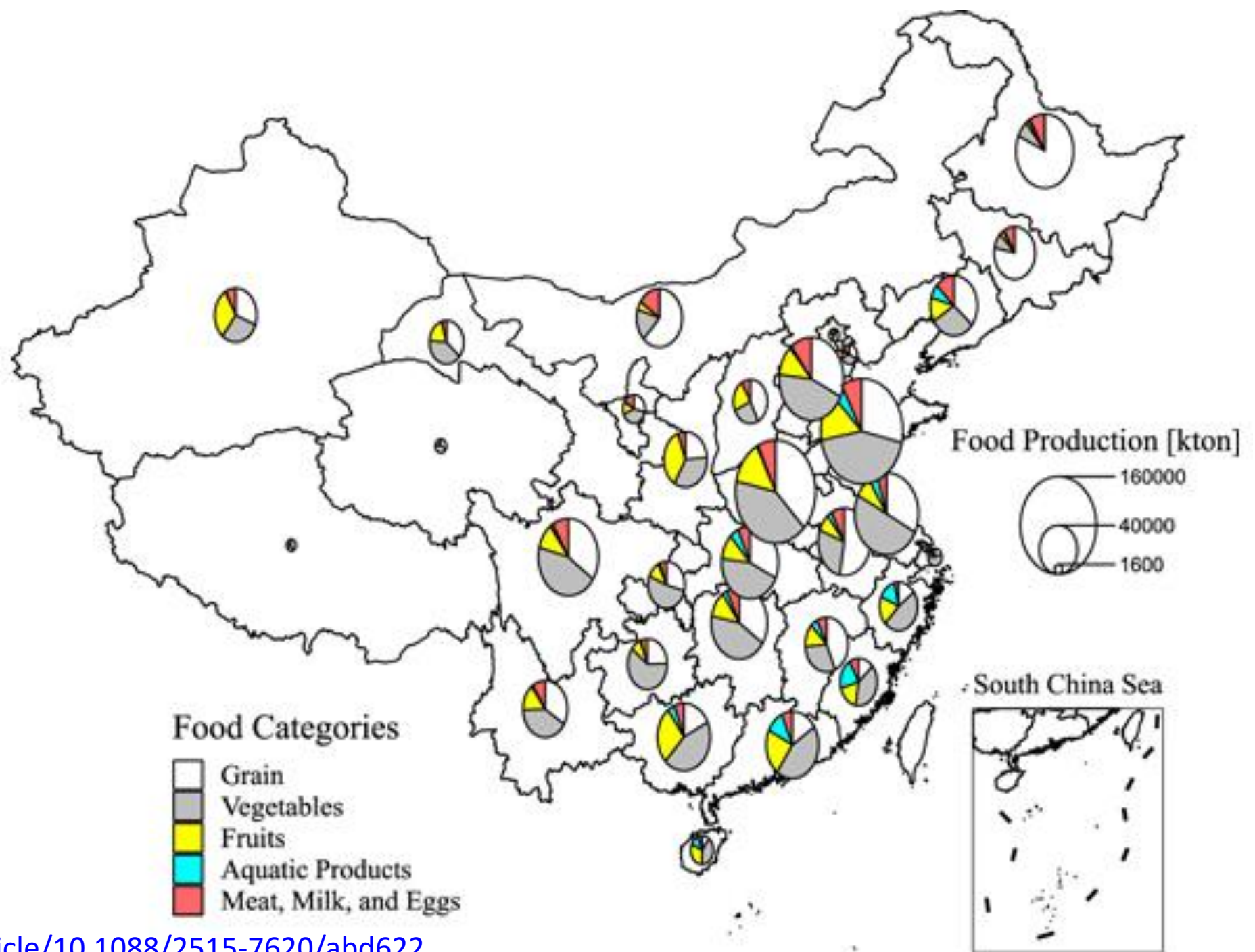
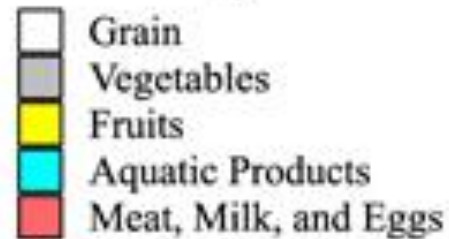


# Food Production in China, 2018

## Food Categories



## Food Categories





# Changes in my hometown?

Greenhouse – plastic film - Shandong Province

A promotional video for Shenxian Vegetables. The video features a man in a suit, identified as the county leader of Shandong Licheng, Shenxian County, Gao Zhiguo. He is surrounded by women who are holding mobile phones, suggesting a focus on mobile commerce. The video includes a logo for 'Shenxian Vegetables' (莘县蔬菜) and the slogan 'Shenxian Vegetables, Healthy Ecology' (莘县蔬菜·健康生态). The video also mentions a 'Shandong Licheng (Shenxian County) Horticultural Expo Cloud' and a 'Shenxian Agricultural Product Regional Brand Launch Conference'. The video is promoting a 'Welfare for Babies' (给宝宝们送福利) campaign, with a phone number 1618861693 and a QR code for more information. The video also mentions 'Spring 816 Buy Buy Buy' (新粉! 春天816 买买买).

莘县蔬菜  
SHENXIAN VEGETABLES  
| 中国蔬菜第一县 |

莘县蔬菜·健康生态

山东聊城(莘县) 蔬菜博览会云  
莘县农产品区域品牌发布会

山东聊城莘县县长  
高志国

给宝宝们送福利

新粉! 春天816 买买买

In China, 500+ million consumers shop on mobile phones, even before the coronavirus

# US Agricultural Exports to China during the Phase One Trade Deal: Larger Pie, Smaller Slice?

Xi He, Dermot Hayes, and Wendong Zhang  
*xihe@iastate.edu; dhayes@iastate.edu; wdzhang@iastate.edu*

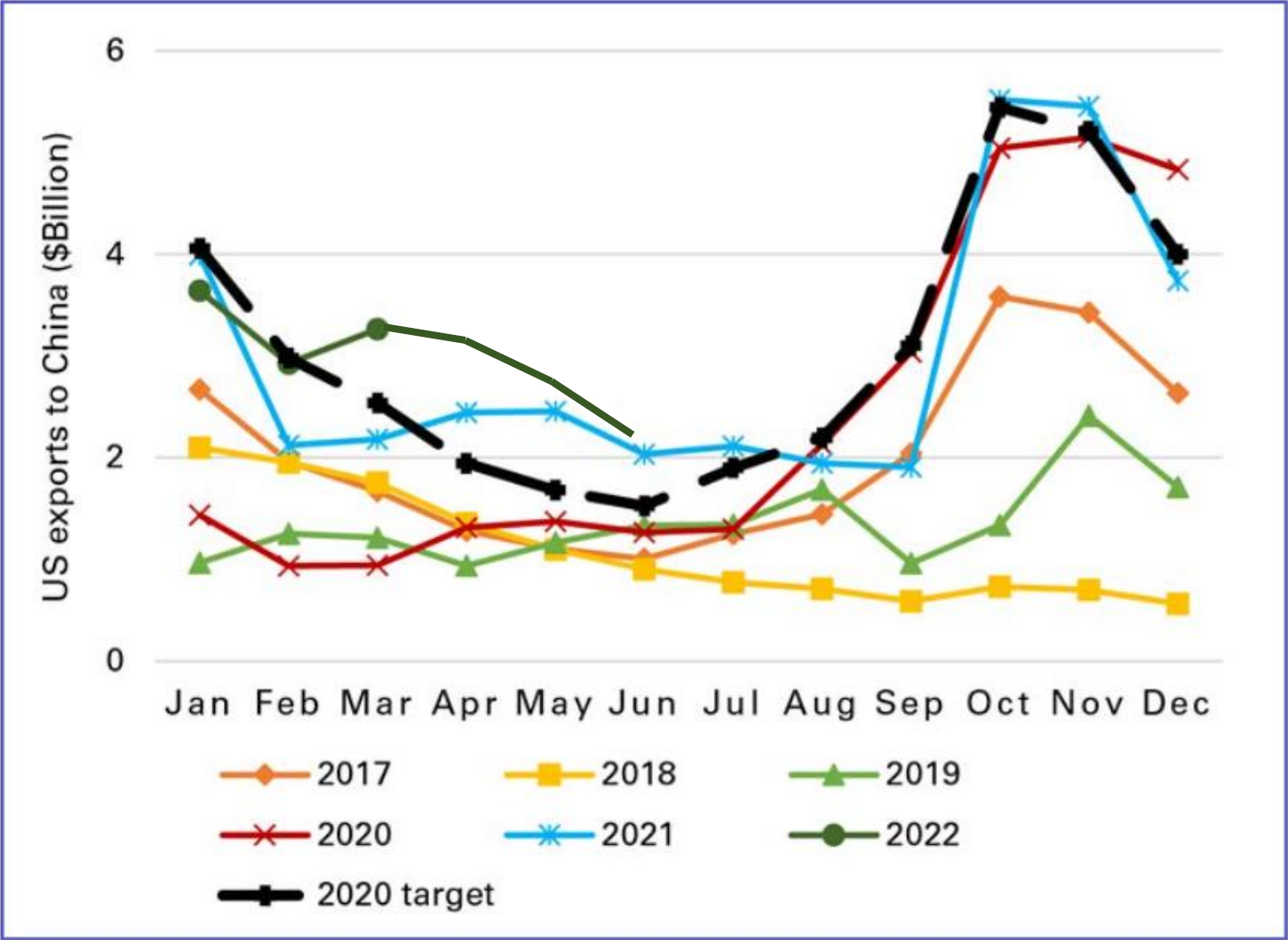


Figure 1. US monthly agricultural exports to China, January 2017 to March 2022.

Source: USDA GATS (2022).



# USTR Receives Requests for Continuation of China 301 Tariffs

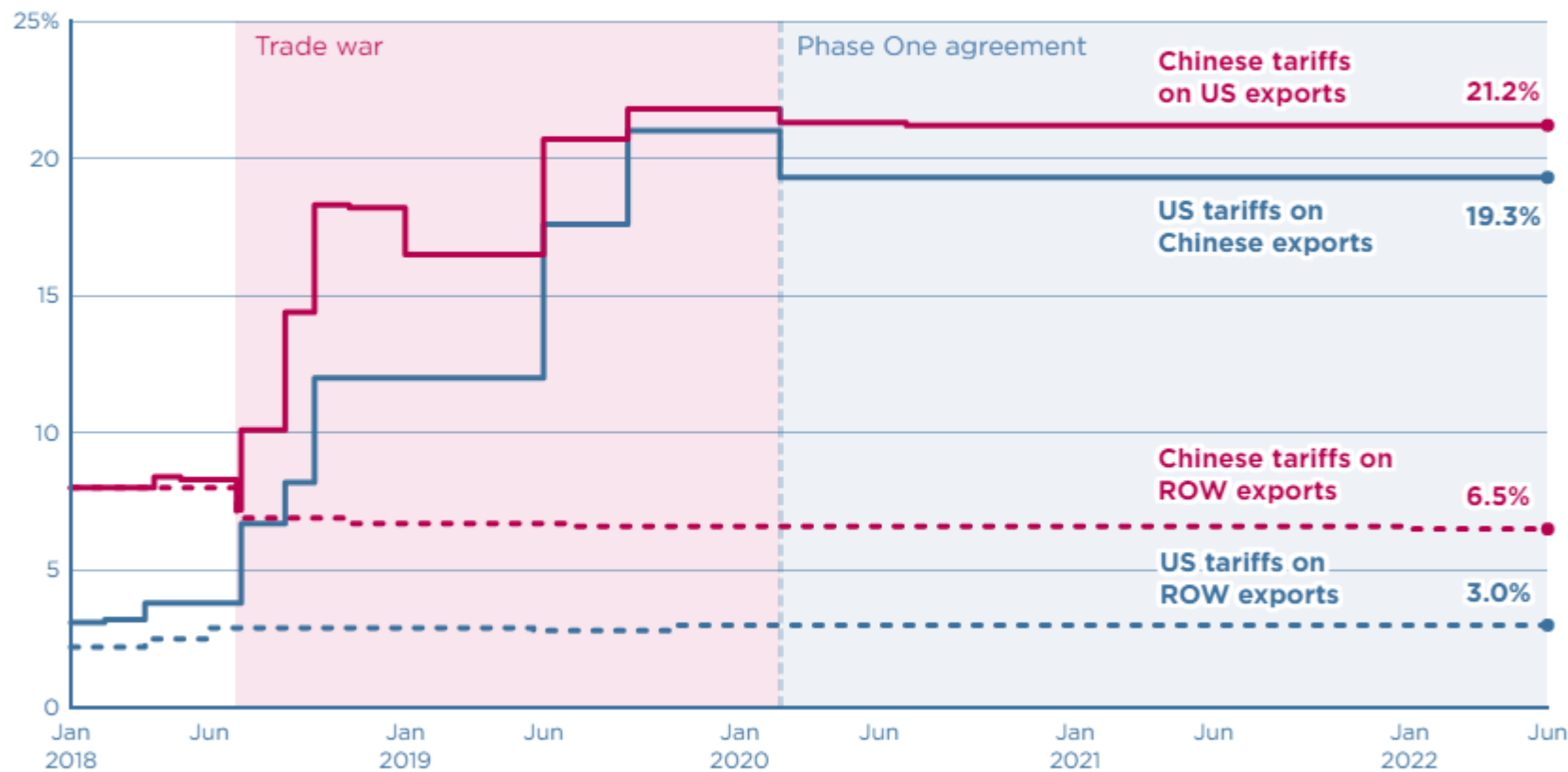


OFFICE *of the* UNITED STATES TRADE REPRESENTATIVE  
EXECUTIVE OFFICE OF THE PRESIDENT

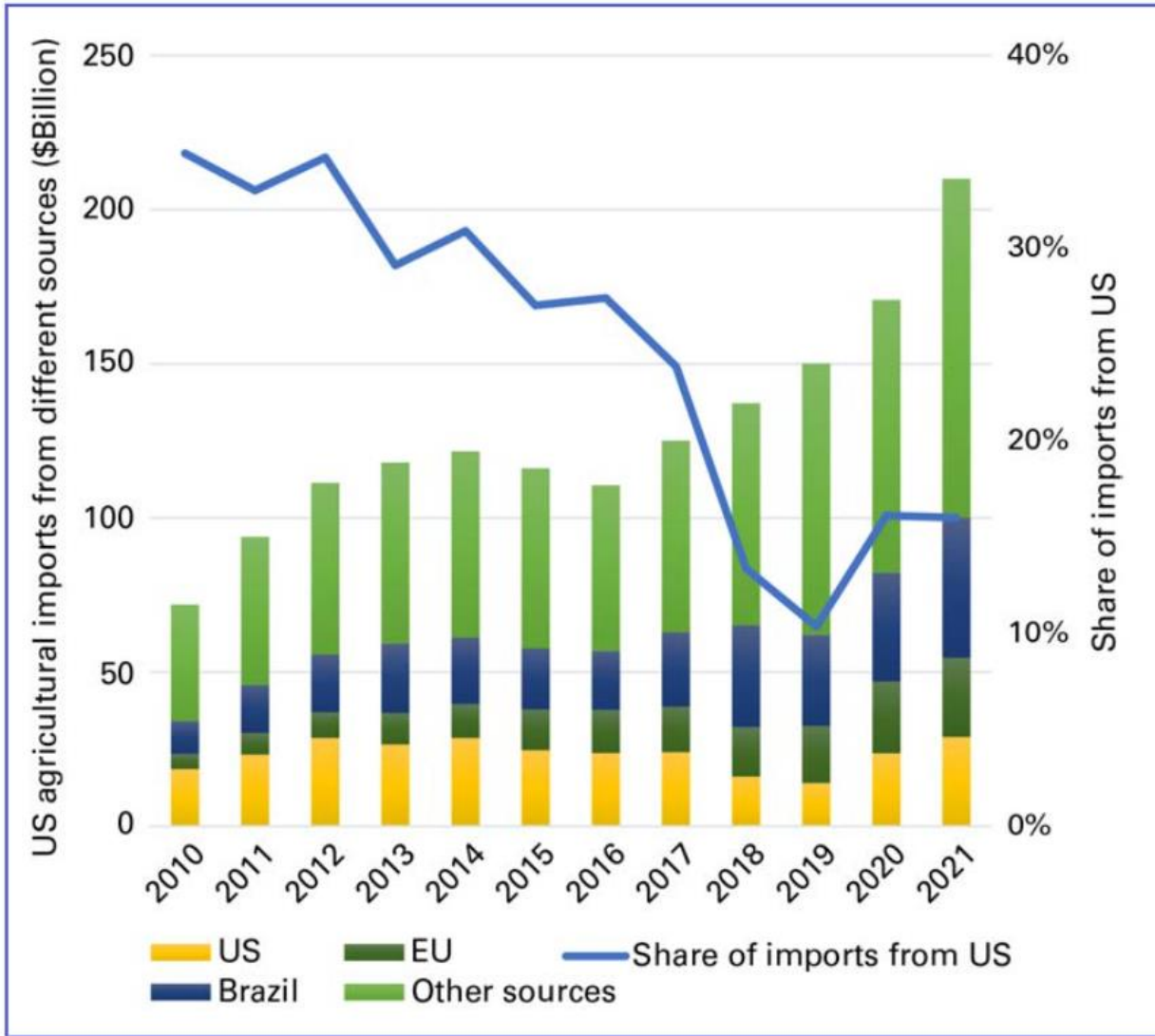
September 02, 2022

## US-China trade war tariffs: An up-to-date chart

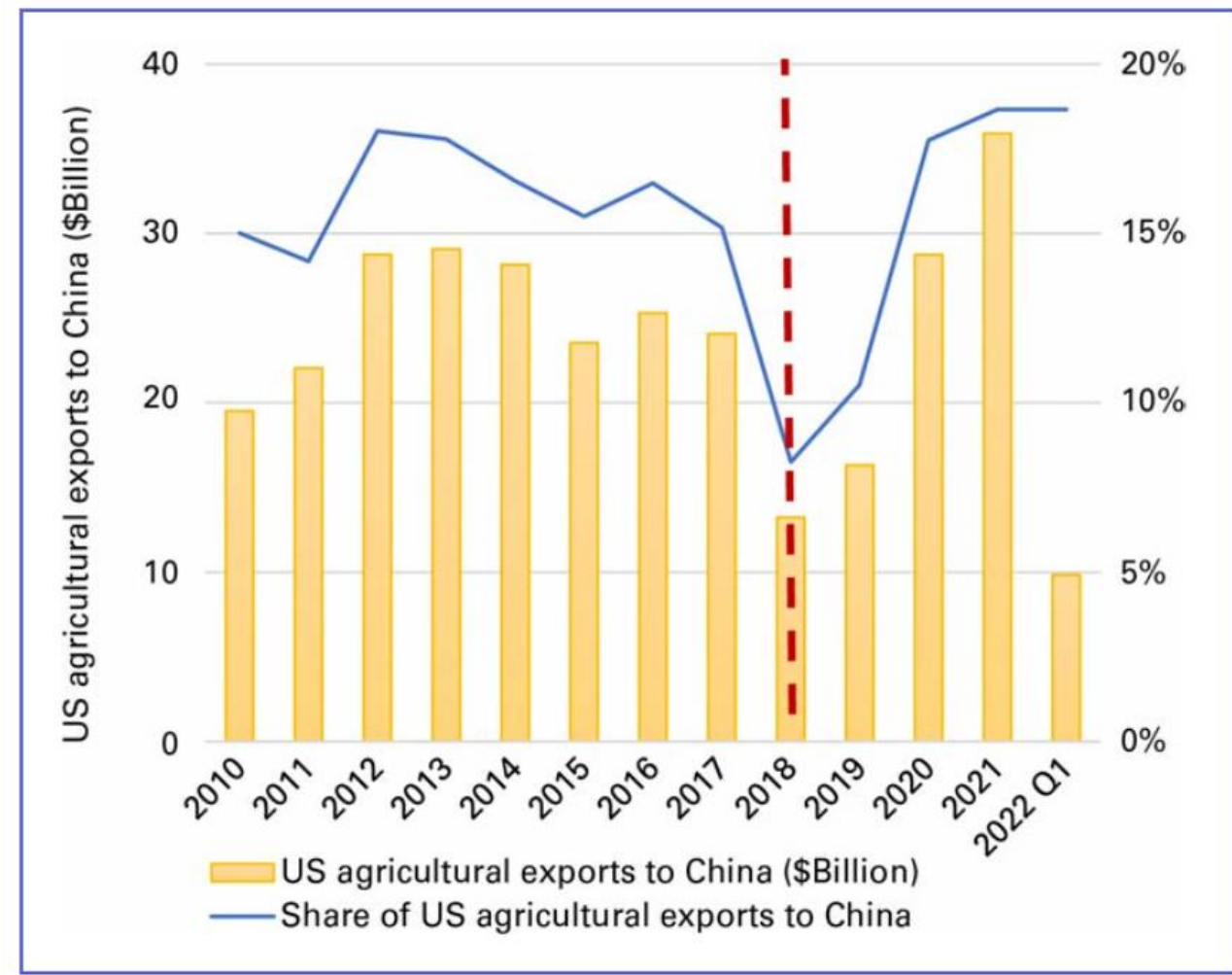
a. US-China tariff rates toward each other and rest of world (ROW)



Chad P. Bown (PIIE)  
April 22, 2022



**Figure 3. China's agricultural imports from the United States, EU, Brazil, and other sources.**  
 Source: China's General Administration of Customs (2022).



**Figure 2. US agricultural exports to China.**  
 Source: USDA GATS (2022). Data in 2022 is for the first quarter.

**Table 1. China's Imports and US Exports of Major Commodities to China before the Trade War and during the Phase One Trade Deal**

<b>Commodity</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b><i>Panel C: US Share in Total Chinese Imports (%)</i></b>					
Soybeans	33.2%	9.4%	25.5%	34.1%	28.4%
Corn	28.7%	8.3%	6.5%	62.4%	66.4%
Pork & Pork Products	25.3%	18.5%	27.3%	17.4%	14.5%
Beef & Beef Products	0.4%	0.7%	0.6%	2.0%	8.1%
Seafood Products	16.1%	11.3%	7.7%	7.4%	8.3%
Wheat	34.3%	12.8%	6.8%	26.9%	28.0%
Dairy Products	15.2%	13.0%	6.6%	10.1%	11.1%
Share of US in China's import value of selected commodities	62.4%	17.8%	25.3%	35.7%	38.2%

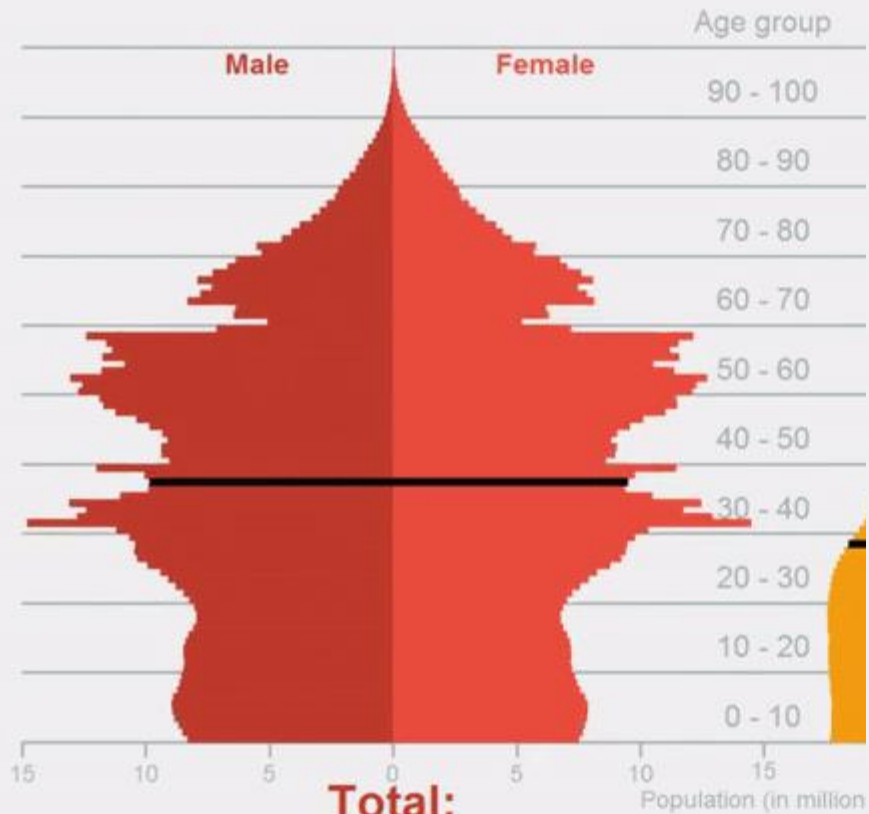
*Source: USDA GATS (2022) and China's General Administration of Customs (2022).*



# Chinese Population is Aging, but Income Growth is More Important

Population projection  
2021

China

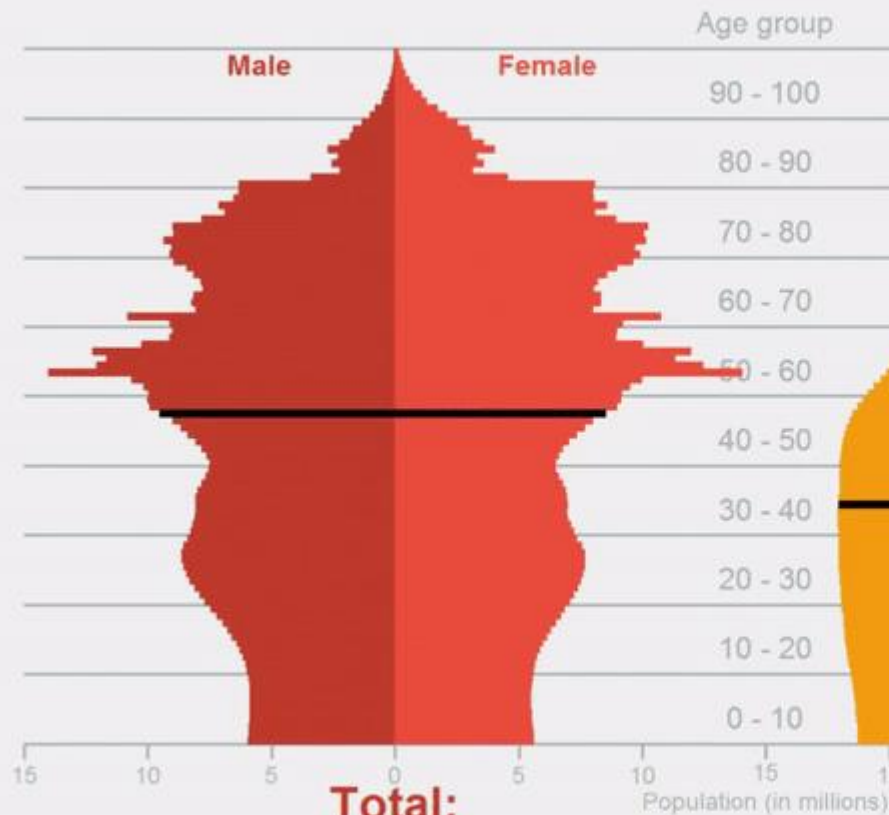


Total:  
1,397,852,872

■ Median age

Population projection  
2043

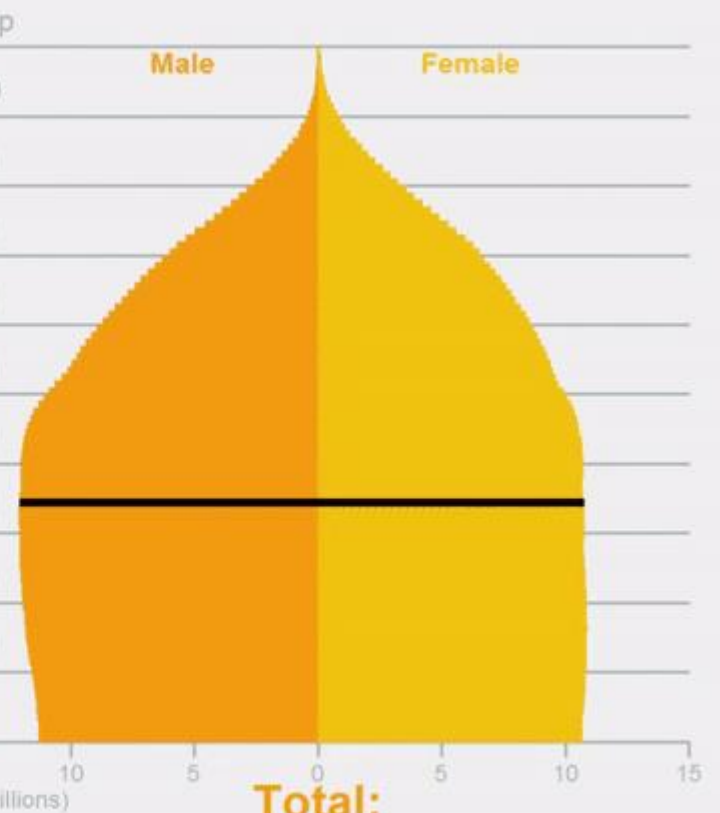
China



Total:  
1,348,012,910

■ Median age

India

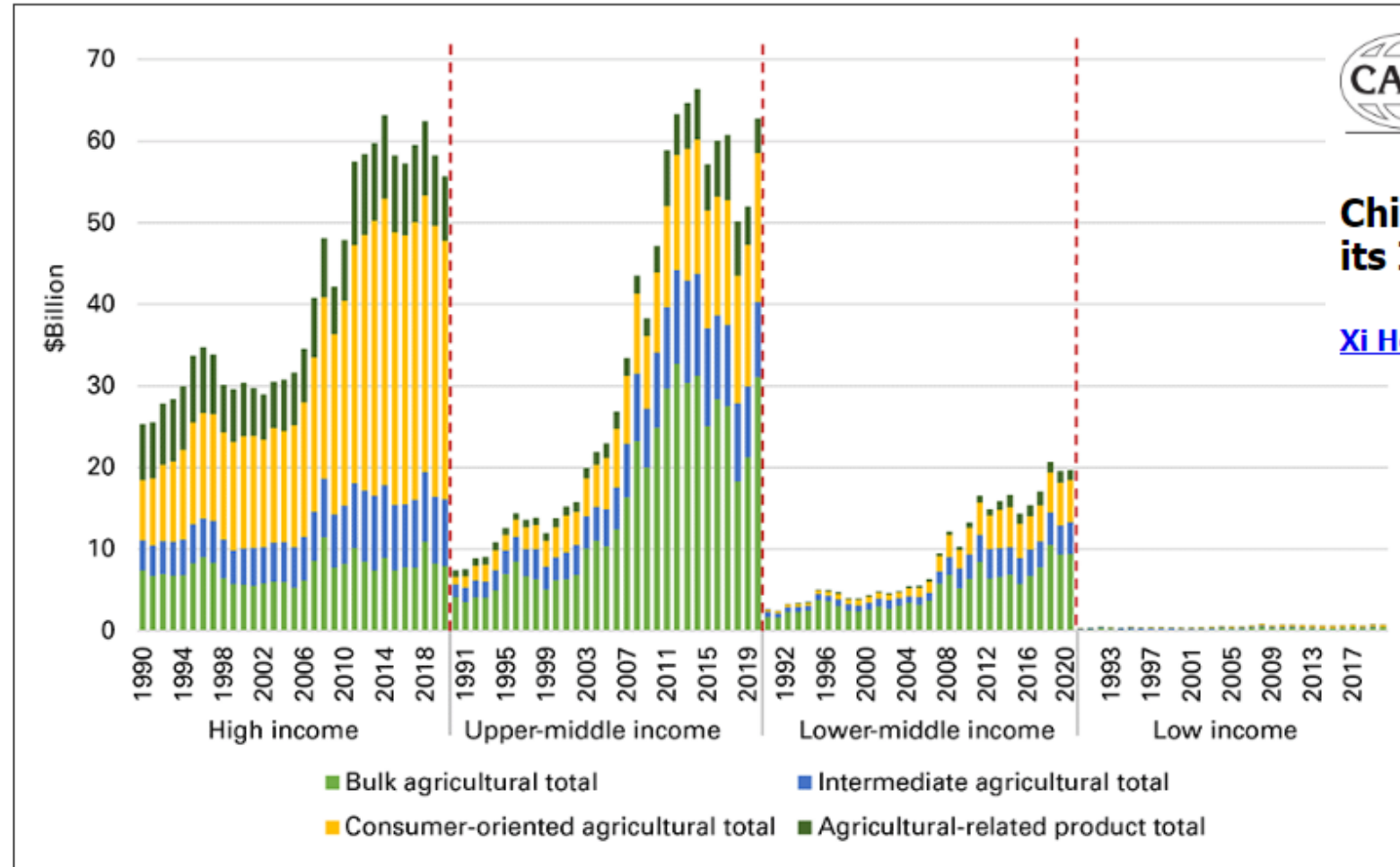


Total:  
1,599,824,662



Data source: US Census Bureau IDB  
Visualization by @aronstrandberg

States. Figure 2 illustrates US exports of four agricultural categories—bulk (e.g., corn, soybeans, wheat), intermediate (e.g., soybean meal and soybean oil), consumer-oriented (e.g., pork and beef products), and agriculture-related products (e.g., seafood and forestry products)—to high-income, upper-middle-income, lower-middle-income, and low-income countries from 1990 to 2020.



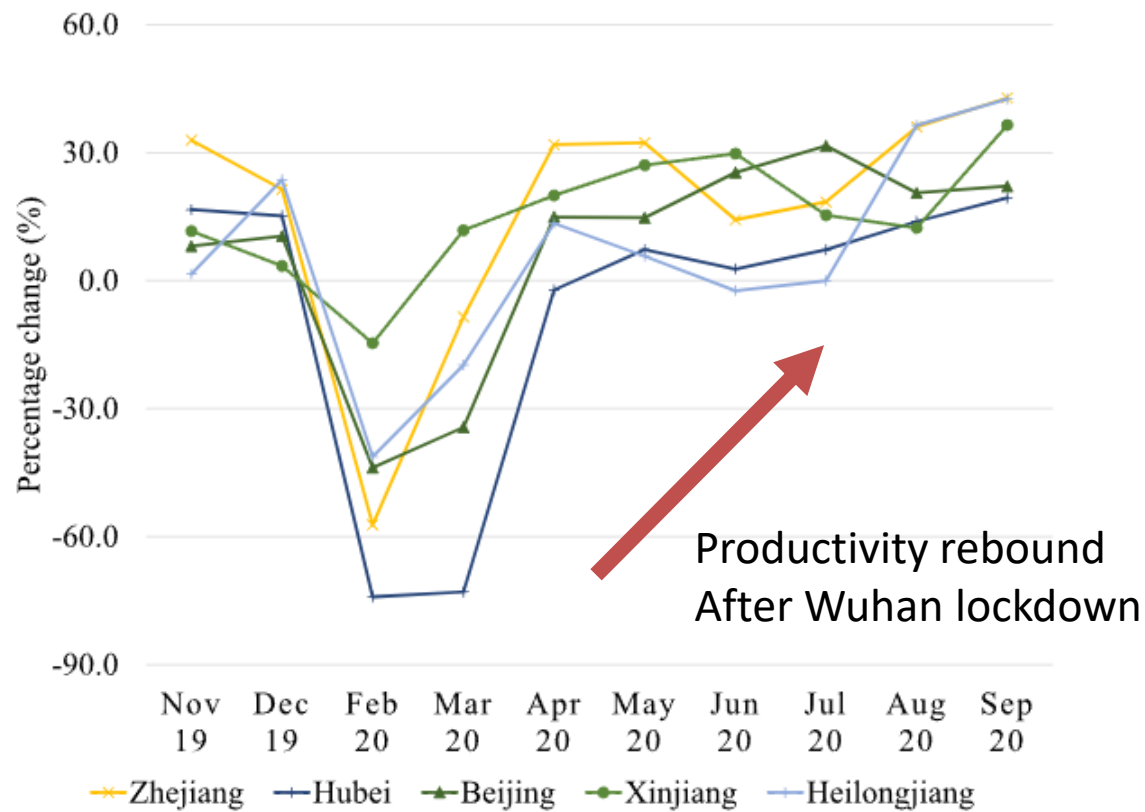
## China's Changing Population Structure and its Implications for US Agricultural Exports

Xi He and Wendong Zhang

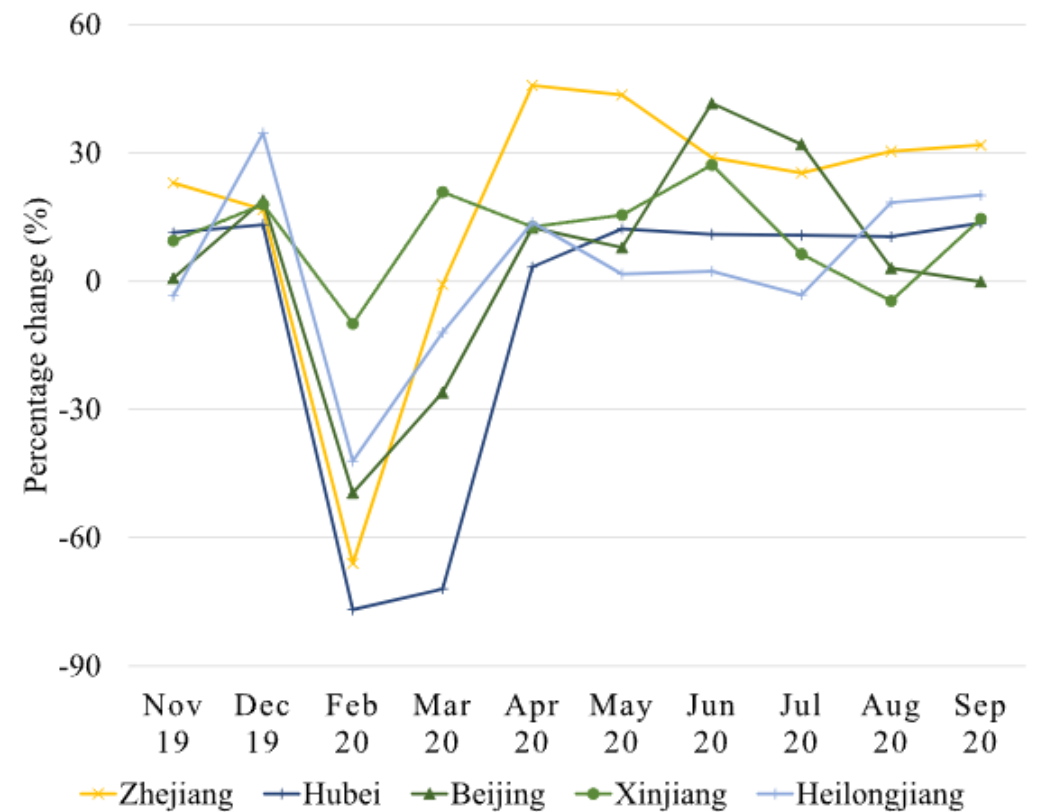
[https://www.card.iastate.edu/ag\\_policy\\_review/article/?a=122](https://www.card.iastate.edu/ag_policy_review/article/?a=122)

**Figure 2. US exports of agricultural commodities to countries with different income levels.**

*Note:* Based on data from USDA GATS (2021). We use World Bank's classification to classify countries into different income groups and use USDA's definition of agricultural products and classification of agricultural product categories.



(a) Without trade shocks



(b) With trade shocks

**Fig. 2** Labor productivity shock estimates in five typical provinces with and without trade shocks (%)

## Chinese economy is still resilient

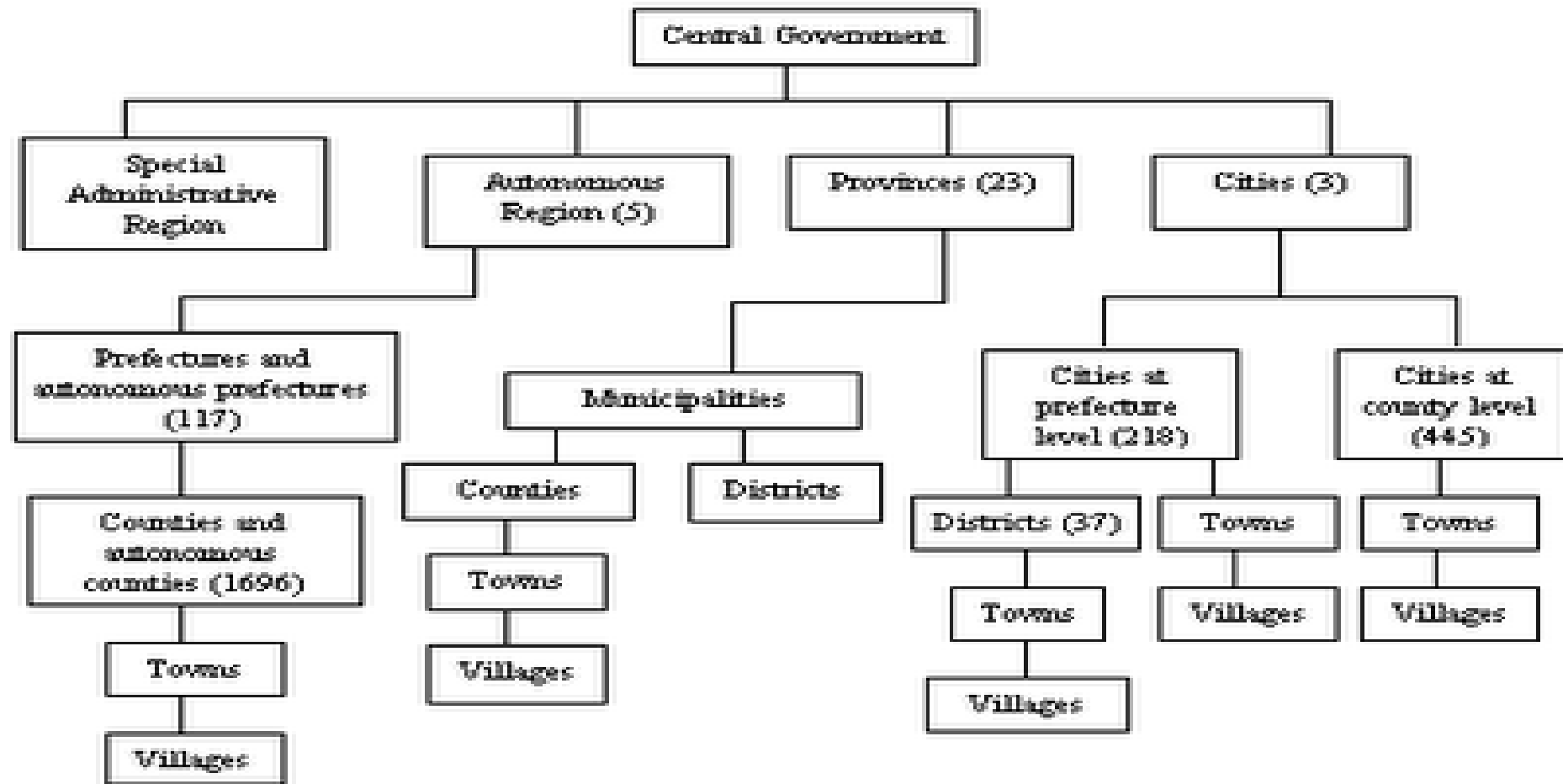
Published: 26 July 2022

A general equilibrium assessment of COVID-19's labor productivity impacts on china's regional economies

Xi He, Edward J. Balistreri, Gyu Hyun Kim & Wendong Zhang

*Journal of Productivity Analysis* (2022) | [Cite this article](#)

# China's Governance Hierarchy



# 2000 yrs of imperial history

- huge legacies on governance structure

the only exception: emperor replaced by central government

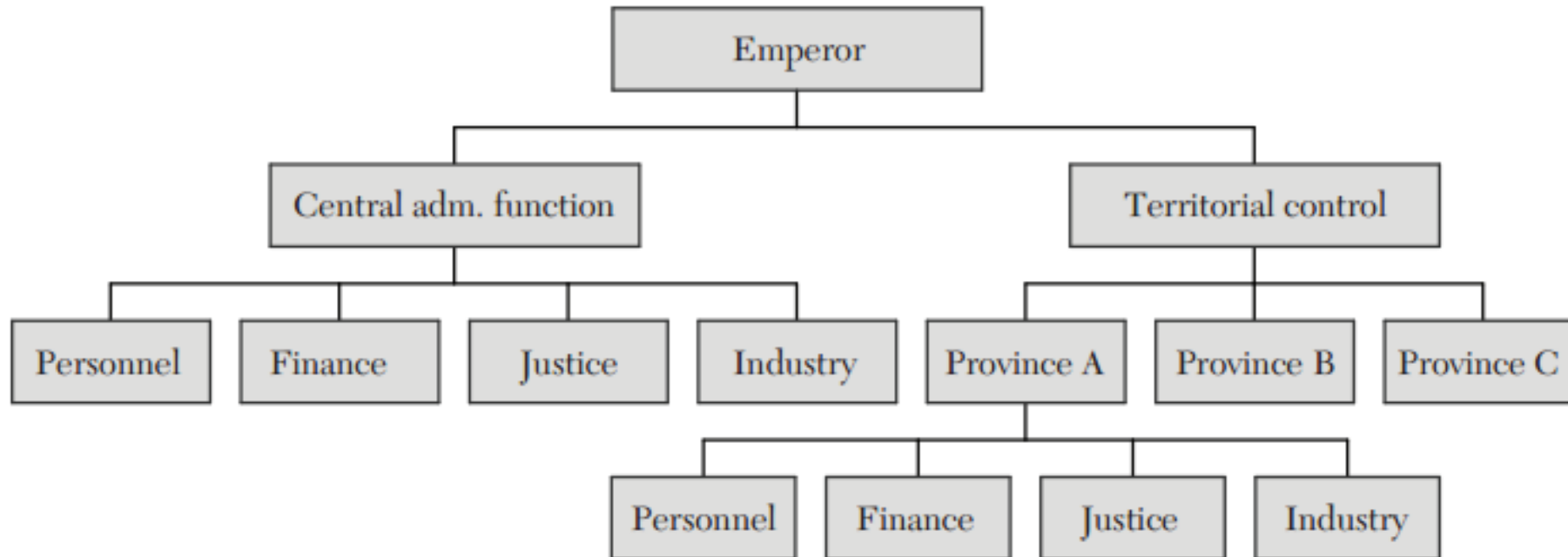


Figure 3. Stylized Governance Structure of Imperial China

New additions: VA, ICE (following US governance structure)



# China's Regional Decentralized Authoritarian (RDA) Regime

CHINA'S POLITICAL-ECONOMIC  
INSTITUTIONS AND DEVELOPMENT  
*Chenggang Xu*

*the* **CATO**  
**JOURNAL**

CHARACTERISTICS OF CHINA'S RDA REGIME COMPARED WITH OTHER REGIMES

	China's RDA regime	Soviet system	Federal State
Composition of national decision-making body	Central, regional and ministerial officials	Central and ministerial officials	Federal legislature representing regional constituencies
Decision-making process	Central-regional bargaining; consensus building; local experiments as a strategy	Top-down; SOE-Ministry bargaining	Voting in legislation; federal-state bargaining
Subnational officials' incentives	Promotion: absolute and relative performance; accountable to superiors; personnel control	Promotion: absolute performance; accountable to superiors; personnel control	To be elected; independent from the federal government; accountable to local constituencies
Regional competition	Tournament-like competition; competition affects governor's promotion	Not important	Fiscal (Tiebout) competition; competition affects governor's re-election
Regional experiment	Local experiments as part of central decision-making; experimental results may become national policy	Not important	States are "laboratories" for policy; voluntary adoption of experiments by states

THE EFFECT OF ECONOMIC PERFORMANCE ON THE TURNOVER OF PROVINCIAL LEADERS  
(Ordered probit regressions)

	Dependent variable: turnover (0 = termination, 1 = same level, 2 = promotion)					
	(1)	(2)	(3)	(4)	(5)	(6)
Provincial annual GDP growth rate	1.615** (2.05)	1.581* (1.87)				
Provincial average GDP growth rate			4.727*** (4.34)	4.540*** (3.90)		
Provincial average per capita GDP growth rate (A)					3.001** (2.10)	
Provincial average per capita GDP growth rate of the immediate (B) predecessor (B)					-3.584** (2.36)	
(A)-(B)						3.309*** (3.41)
Age		-0.026* (-1.91)		-0.023* (-1.68)	-0.071*** (6.81)	-0.070*** (6.77)
Age 65		-0.974*** (-5.27)		-0.976*** (-5.25)	-0.303** (2.07)	-0.303** (2.07)
Education		0.154 (0.96)		0.187 (1.17)	0.183 (1.48)	0.184 (1.50)
Central connection		0.384*** (2.79)		0.404*** (2.89)	0.082 (0.74)	0.085 (0.77)

**Who get promoted as Governor?**

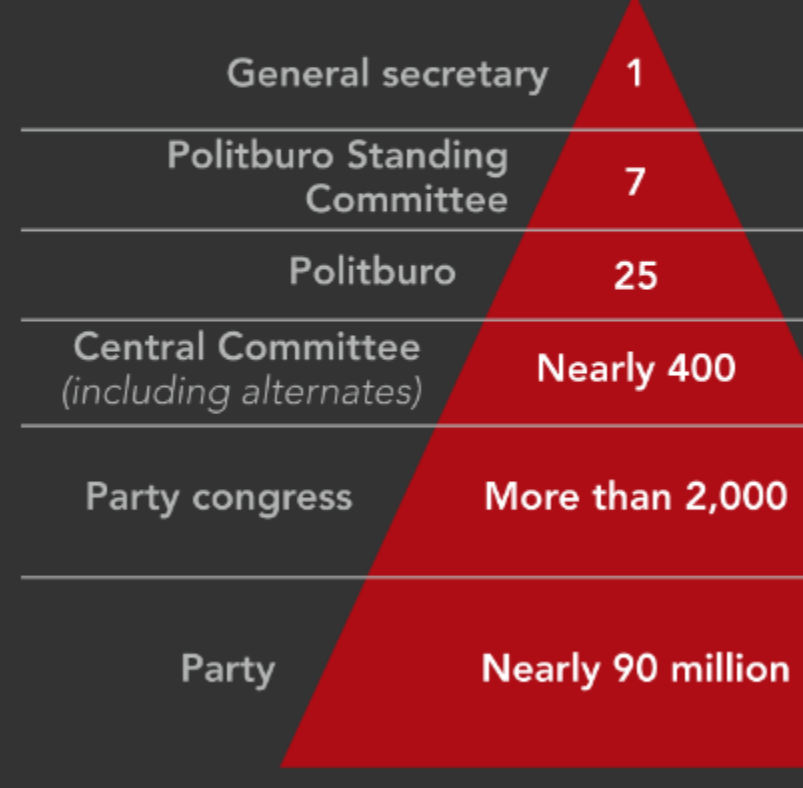
# The powerful 'China Seven': The pinnacle of an 89 million-member party

The Chinese Communist Party is the world's largest political party; it had more than 89.4 million members at the end of 2016. The membership is larger than the population of Germany.

A key organ within the party is the Central Committee, which has more than 200 members. Under them are some 170 alternate members. Important decisions are made during Politburo meetings as well as at Politburo Standing Committee meetings convened by the general secretary.

Currently, the Politburo Standing Committee, the party's supreme leadership circle, has seven members. These seven are also among the 25 Politburo members. Politburo members hold power equivalent to vice premier.

## The party's overlapping tiers





### Politburo Standing Committee members

2	3	4	5	6	7
Li Keqiang (63)	Li Zhanshu (68)	Wang Yang (64)	Wang Huning (63)	Zhao Leji (62)	Han Zheng (64)
Hu faction	Xi faction	Hu faction	No faction	Xi faction	No faction

### General secretary

1
Xi Jinping (65)
Xi faction

### Politburo members

Ding Xuexiang (56)	Wang Chen (68)	Liu He (67)	Xu Qiliang (69)	Sun Chunlan (68)	Li Xi (62)	Li Qiang (59)	Li Hongzhong (62)	Yang Jiechi (68)
Xi faction	Xi faction	Xi faction	Xi faction	Hu faction	Xi faction	Xi faction	No faction	No faction

Yang Xiaodu (65)	Zhang Youxia (68)	Chen Xi (65)	Chen Quanguo (63)	Chen Min'er (58)	Hu Chunhua (55)	Guo Shengkun (64)	Huang Kunming (62)	Cai Qi (63)
Xi faction	Xi faction	Xi faction	Hu faction	Xi faction	Hu faction	Jiang faction	Xi faction	Xi faction

60% has experience as provincial chiefs

- Cheng Li  
Brookings Institution

## BELT AND ROAD

# China-Laos high-speed railway set to roll through COVID cloud

Southeast Asian country's rising infections reduce pomp of Friday's launch



The China-Laos bullet train will compress what is normally a two-day road trek through rugged mountain terrain into a brisk three hours or so. © CCTV/Reuters

MARWAAN MACAN-MARKAR, Asia regional correspondent  
November 30, 2021 18:11 JST

# Belt and Road Initiative Still Going

the \$6 billion project in the land-locked country.

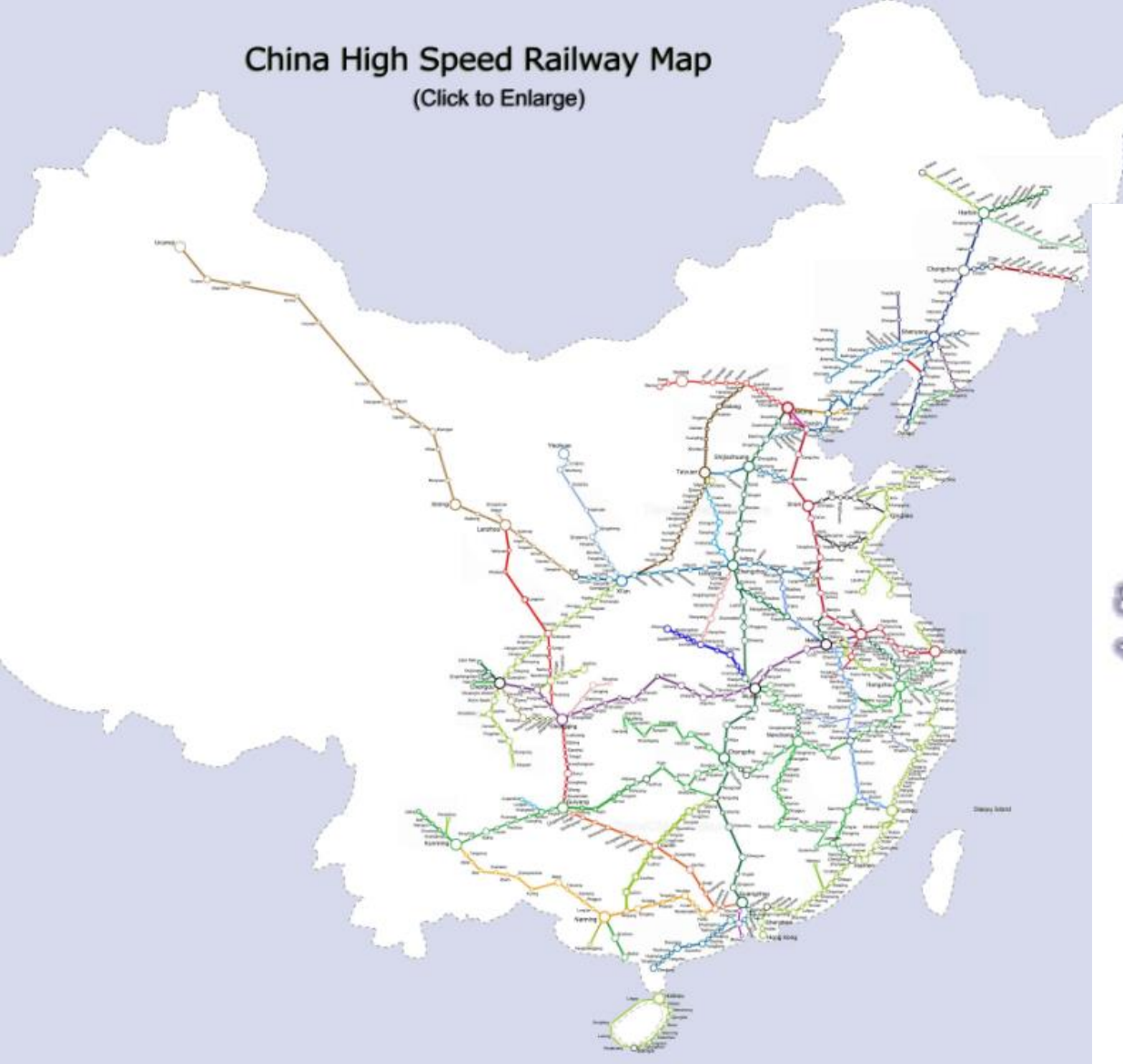


The track from Vientiane to Boten, a northern frontier town along the Laos-China border, will compress what is normally a two-day road trek through rugged mountain terrain into a brisk three hours or so. The Lane Xang, as the bullet train has been named after an ancient Laotian kingdom, will travel through 75 tunnels and across 167 bridges at a speed of up to 160 kph.



# China High Speed Railway Map

(Click to Enlarge)



## High Speed Rail

<https://www.travelchinaguide.com/images/map/train/high-speed-railway.jpg>

# China is a Country of Rapid Change

“四横四纵” 国家冷链物流骨干通道网络布局示意图

## Cold Chains



# Chinese agriculture is increasingly market-oriented

To feed its 1.4 billion, China bets big on genome editing of crops

By Jon Cohen | Jul. 29, 2019, 8:00 AM

China's CRISPR push in animals promises better meat, novel therapies, and pig organs for people

By Jon Cohen | Jul. 31, 2019, 8:00 AM

Science



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中文

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Chilean cherries a hit with festive shoppers

By Ouyang Shijia | China Daily | Updated: 2019-02-12 09:45

## China Takes Its Pigs to the Futures Market

New hog futures may smooth out some of the wild swings in Chinese markets

THE WALL STREET JOURNAL.

中国日报 中文网  
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81.5 billion yuan (\$12.7 B) China's agricultural insurance premiums are the largest in the world in 2020

source:CCTV News 2021-06-30 07:14

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# Biden, Xi Open Talks on Friendly Note, With Tough Topics Ahead

Chinese leader says he wants nations to 'coexist in peace'; Biden says their responsibility is to avoid conflict

**“China and the United States should respect each other, coexist peacefully, and cooperate for a win-win situation. I would like to work with Mr. President to form a consensus and take positive actions to lead the positive development of China-US relations. This is the need for the benefit of the people of the two countries and the expectation of the international community.”**

President Xi Jinping, November 15, 2021



POLITICO  POLITICOPRO

## China suspends climate talks with US

Move comes after Beijing announced sanctions on top US Democrat Nancy Pelosi.

## The CHIPS Act Has Strings Attached: Can't Invest or Produce Advanced Chips in China

*U.S. semiconductor companies can't spend capital on developing advanced factories or producing chips in China for the U.S. market.*



# FINDING FIRMER GROUND:

## The Role of Agricultural Cooperation in U.S.–China Relations

A Report by the US Heartland China Association and The Carter Center

September 2021

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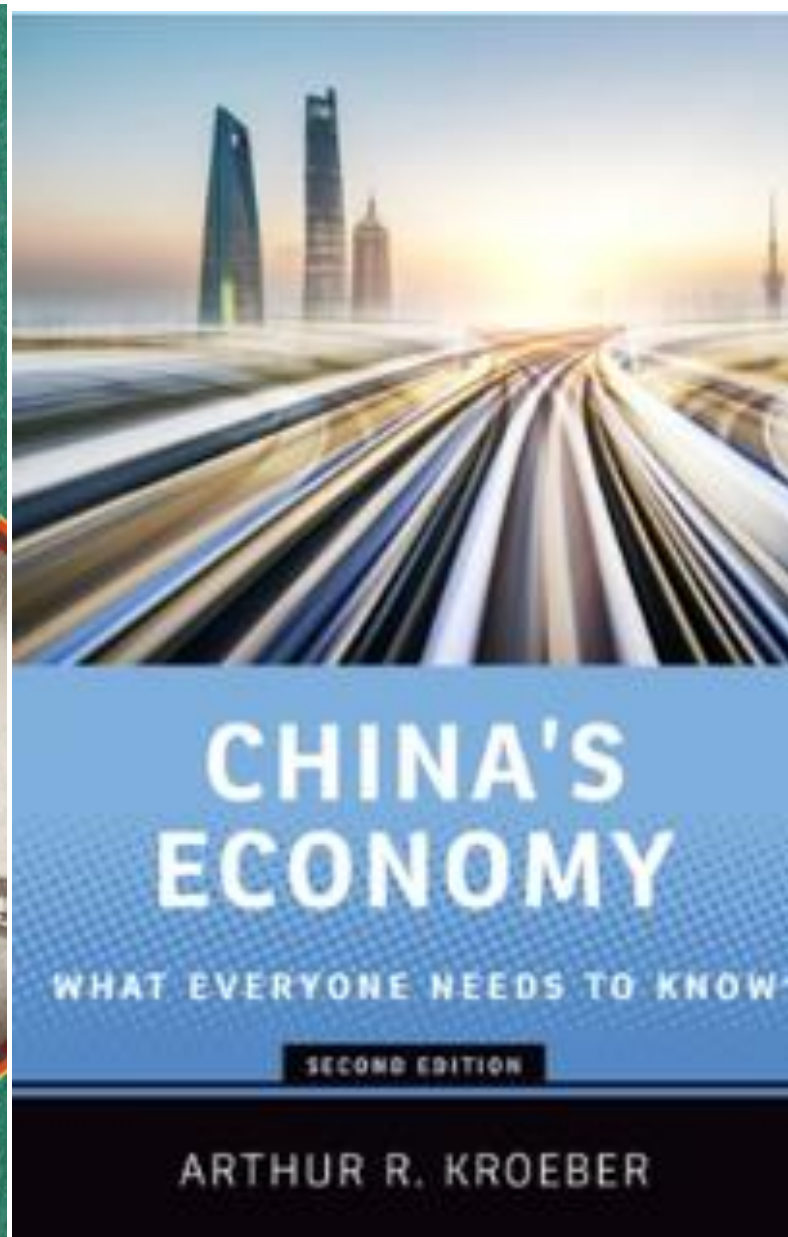
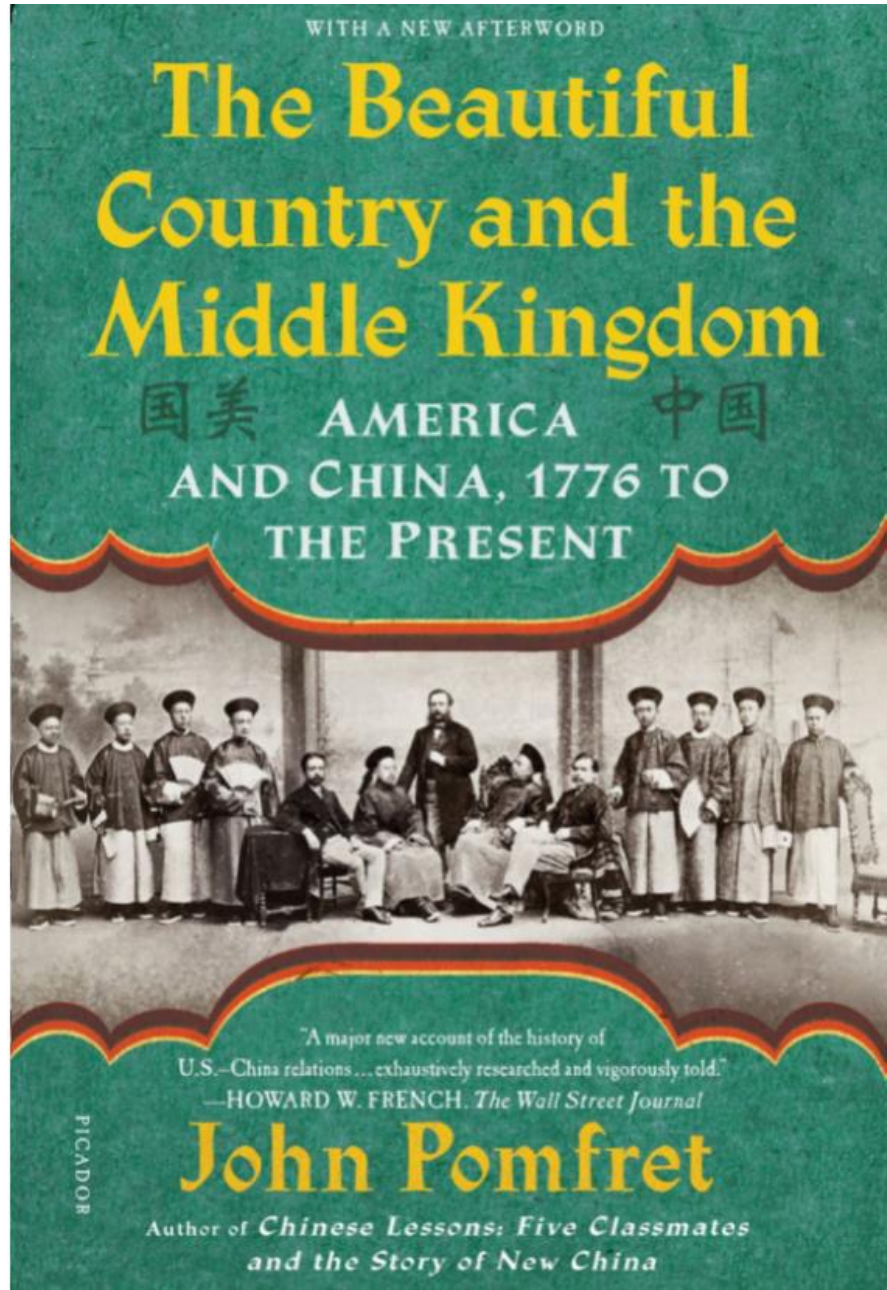
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<https://usheartlandchina.org/wp-content/uploads/2021/09/Finding-Firmer-Ground-The-Role-of-Agricultural-Cooperation-in-US-China-Relations.pdf>



Learn more about contemporary Chinese economy



# Thank you!

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