

The Future of Chinese Food Demand

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Online

May 17, 2024

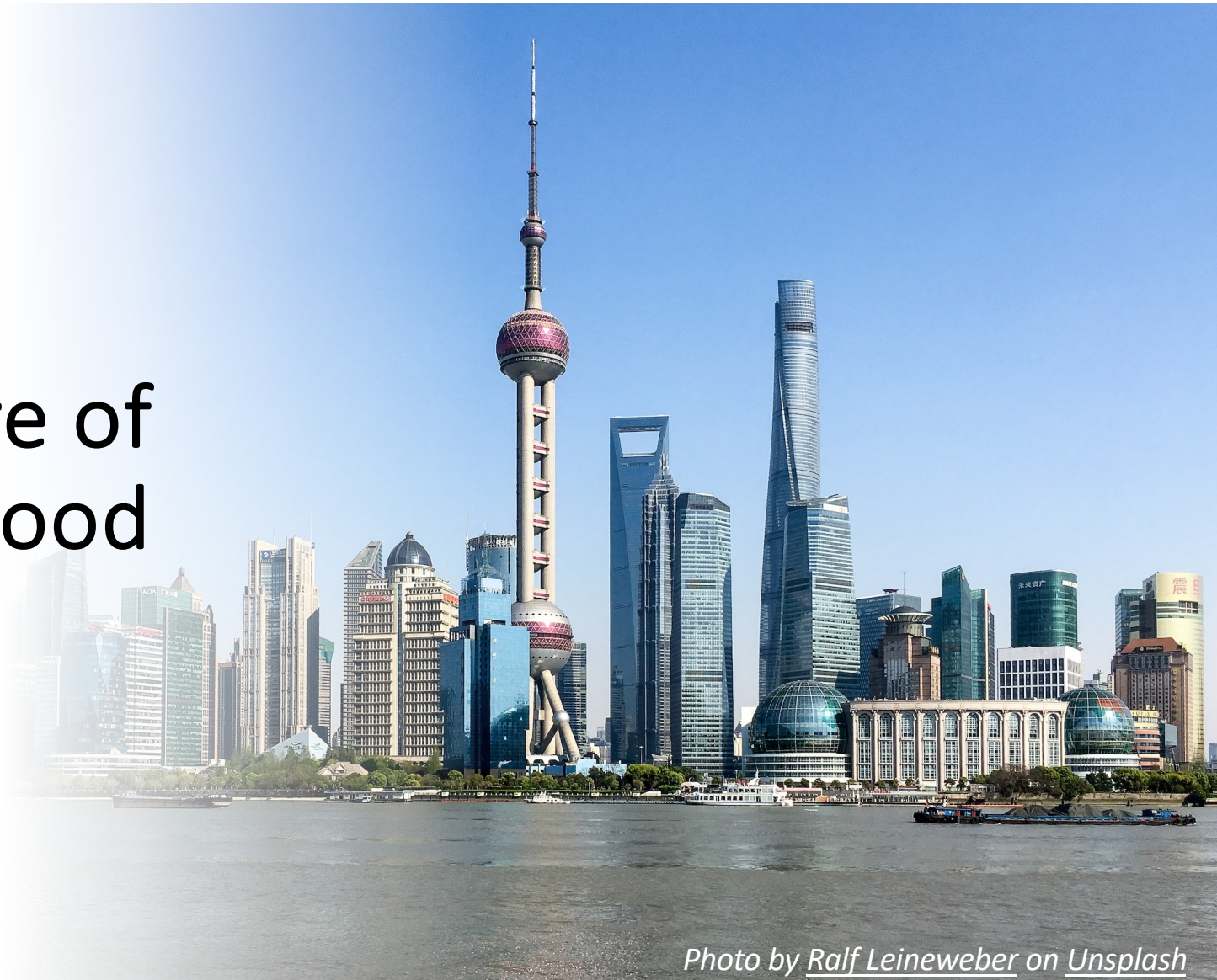


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The Biggest Story of the 21st Century

- Most People Haven't Even Heard About It
- Most People Think We Have the Opposite Problem
- It Will Have Massive Impacts on Food and Agriculture



It's Not...
Climate Change
Or...
AI
Or...





“The great defining event of the twenty-first century...will occur in three decades, give or take, when the global population starts to decline. Once that decline begins, it will never end—a relentless, generation-after-generation culling of the human herd. Nothing like this has ever happened before.”

*-Darrell Bricker, “Empty Planet”
Published February 2020*



What?

The Industry is Barely Aware of Demographic, Economic and Political Changes That Will Significantly Impact Global Demand for Food & Agriculture



So What?

Food Exporting Countries, Increasingly Reliant on Exports, Will Need to Adjust to Shifting Demand



Now What?

Create Awareness
Start a Dialogue
Take Action

What?

The Big Picture

Normal, Our Normal and the New Normal

Our Normal is Not Normal

- Our perception of normal is based on our personal experiences and recent history (The last ~30 years and the last ~100 years).
 - Rapid Population Growth
 - Rapid Economic Expansion
 - Rapid Globalization

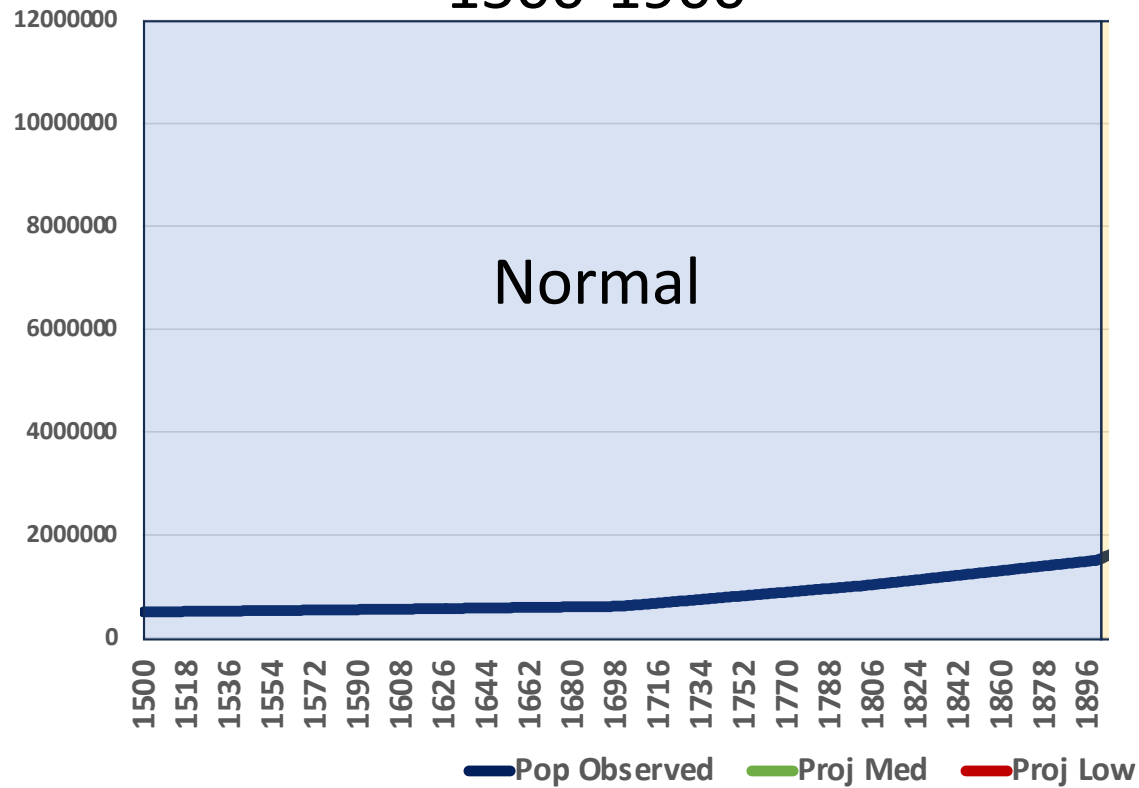
What This Meant for Agriculture

- **MORE** Mouths to Feed
 - Total Consumption
- Consumers With **MORE** Resources
 - Per Capita Consumption & Quality Upgrades
- **MORE** Global Trade Partners
 - Access to More Consumers
- MORE, MORE, MORE...



Global Population

1500-1900



Data Source: United Nations (Medium/Low Variants)

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Four Waves of Population Decline

(Year of Peak)

Already Through 2040

China
Russia
Germany
Japan
Greece
Italy
S. Korea
Spain
Thailand
The Netherlands
Poland

2041 - 2060

France
Singapore
Costa Rica
Columbia
Turkey
Indonesia
Vietnam
Brazil
United Kingdom
Mexico

2061 - 2080

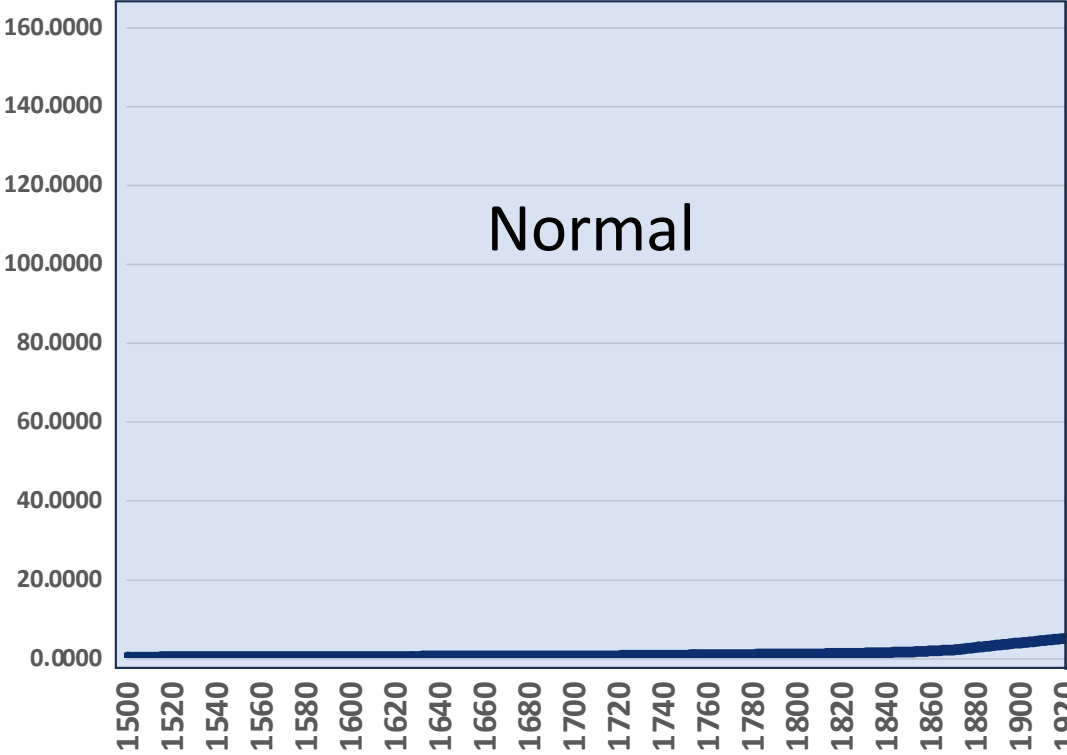
Bangladesh
Tunisia
India
Cambodia
Malaysia
South African
Peru
Venezuela
Honduras
Guatemala

2081 - 2100+

Philippines
Saudi Arabia
Pakistan
Egypt
Uganda
Nigeria
Ethiopia
United States
Canada
Australia
Sweden

Global GDP(\$ Trillions)

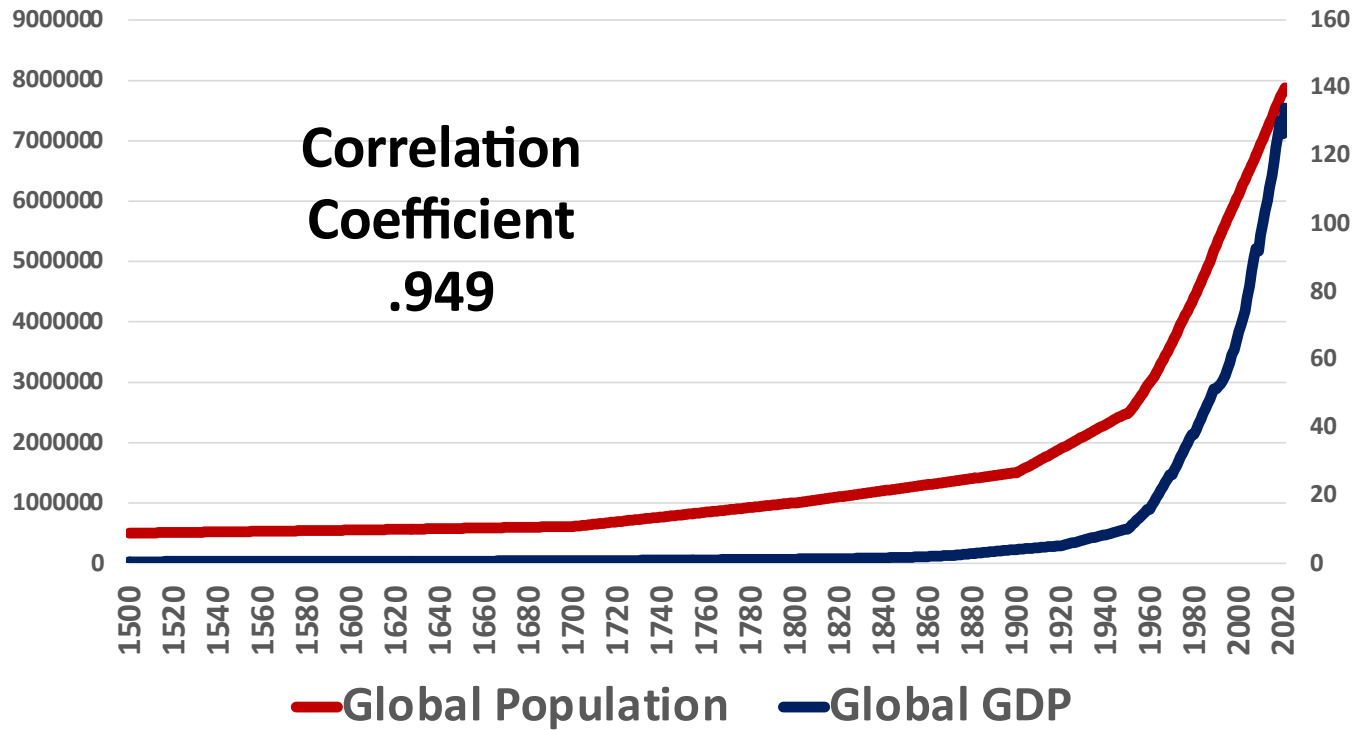
1500-1920



Data Source: World Bank

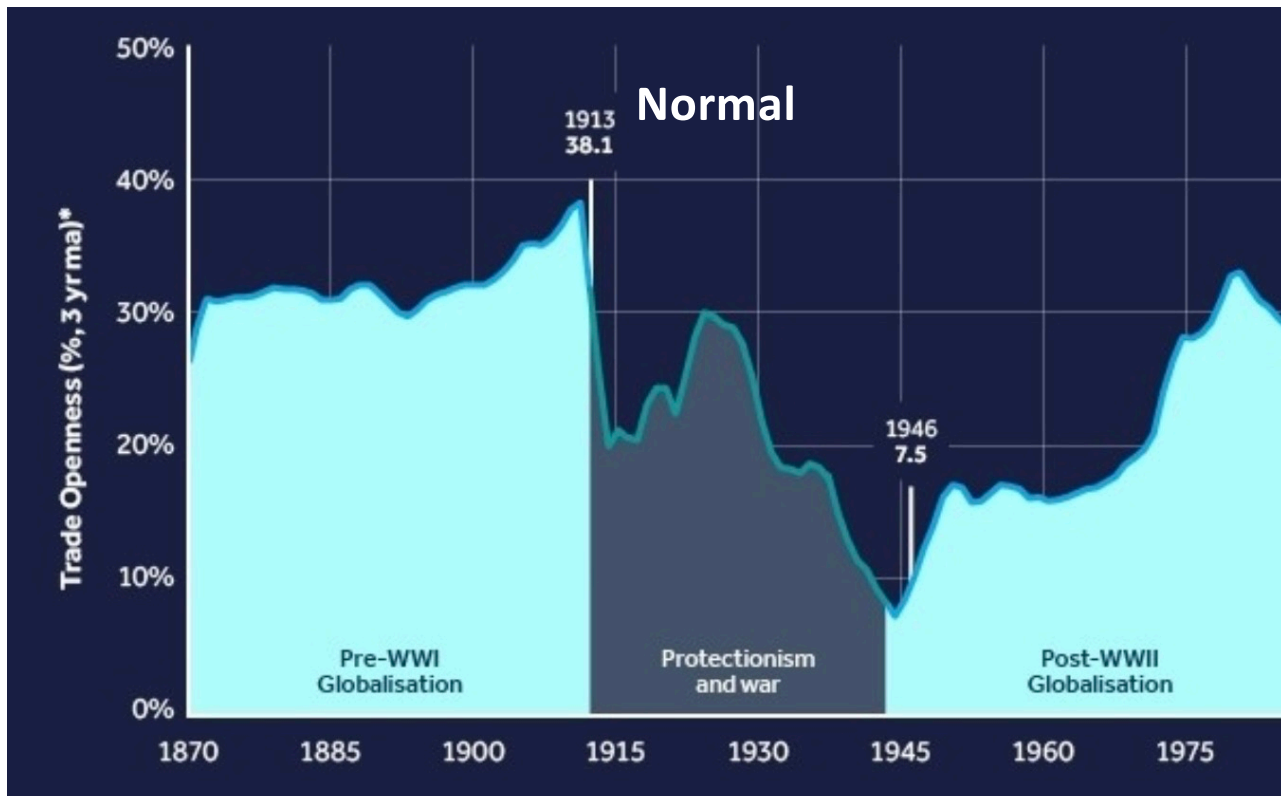
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Future GDP?



Globalization

1870-1990



Data Source: Jorda-Shularick-Taylor Database, IMF, World Bank, Barclays Research

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China: A Case Study for Food Demand

Fewer People, Stagnating Economy, Increasing Isolation...and More Food Import Demand?

Drivers of China Food Imports

- **Population**
 - Population Increased by almost 1 B (1950-2022)
- **Economic Growth**
 - GDP Growth: \$59 B in 1960 to \$17.9 T in
 - Per Capita Food Consumption: 1427 to 3406 in 60 years
 - Higher Quality Foods: Meat Consumption up 19-fold from 1961 to 2022
- **Self Sufficiency**
 - Decreasing from 2000 - 2020



China Demographic/Population Trends

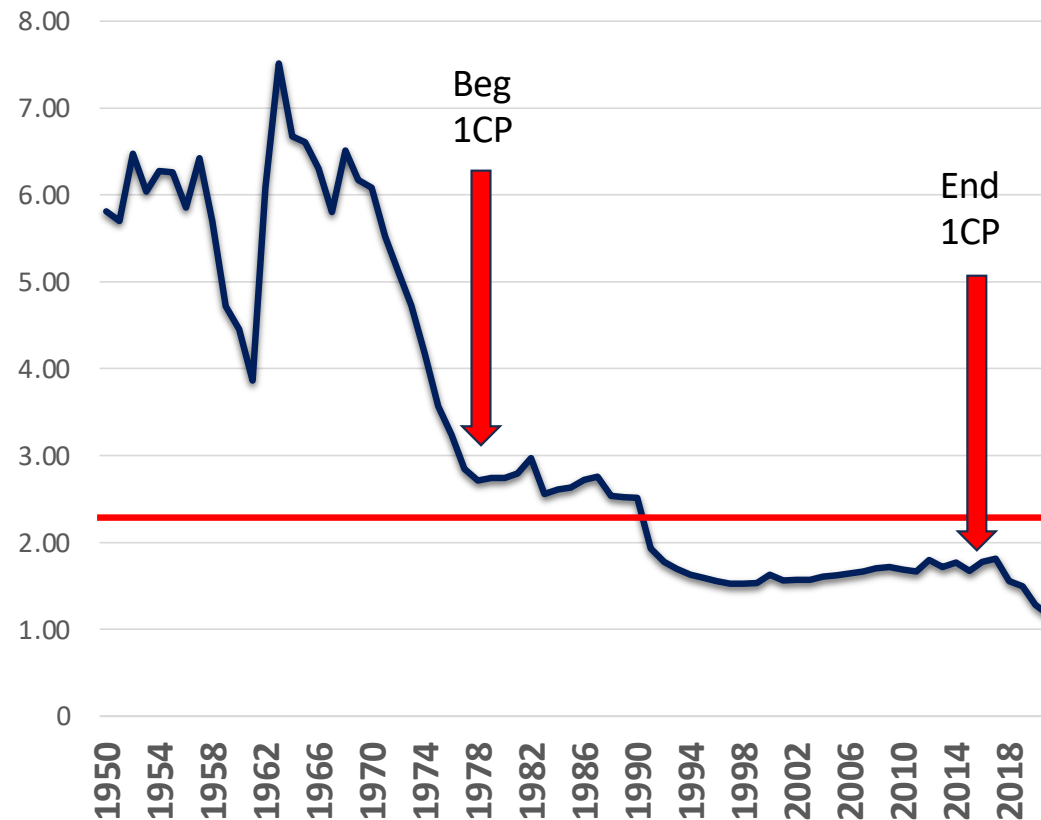
Three Drivers of Population Change

- **Birth Rate**
 - Total Fertility Rate (TFR)
- **Mortality Rate**
 - Life Expectancy/Median Age
- **Migration**
 - Emigration/Immigration



Photo by [Sandy Millar](#) on [Unsplash](#)

China Fertility Rate 1950-2021

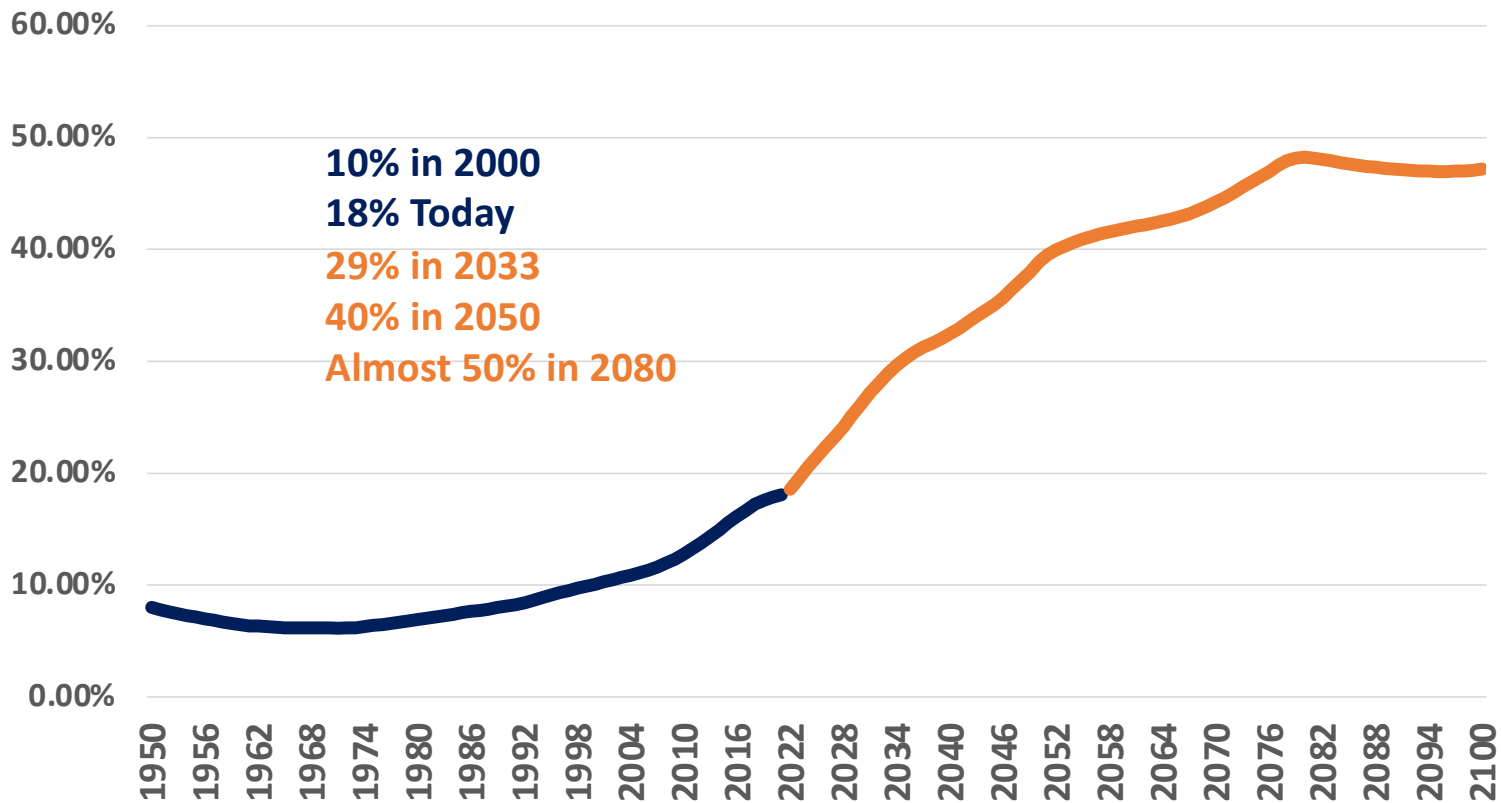


Drivers of Fertility Rate

- Urbanization
- Secularization
- Rising Incomes
- Educational Attainment (Particularly Among Women)

China 60+ % of Population

1950-2021 (Actual) 2022-2100 (Projected)

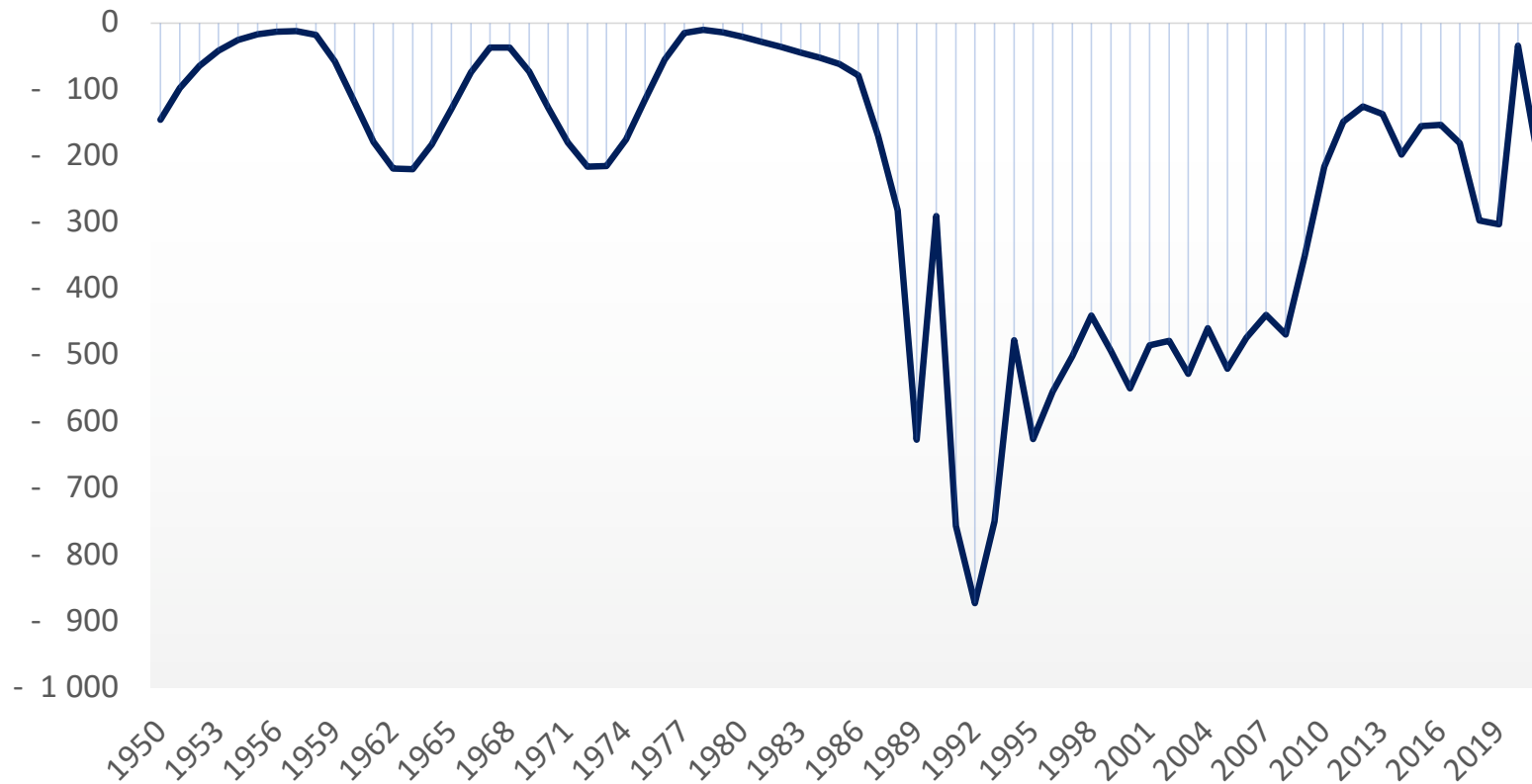


Data Source: United Nations (Medium Variant)

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China Net Migration

1950-2021 (Thousands)

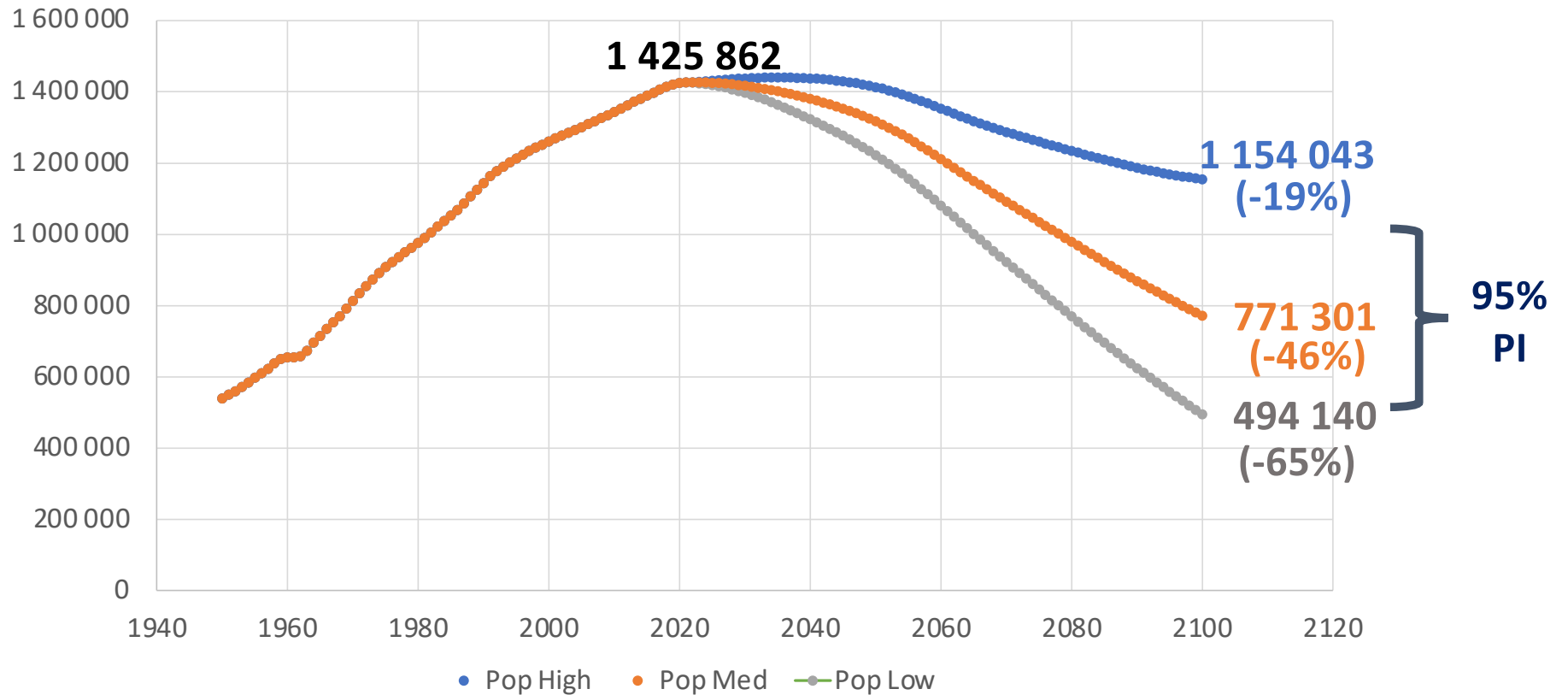


Data Source: United Nations

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Projections

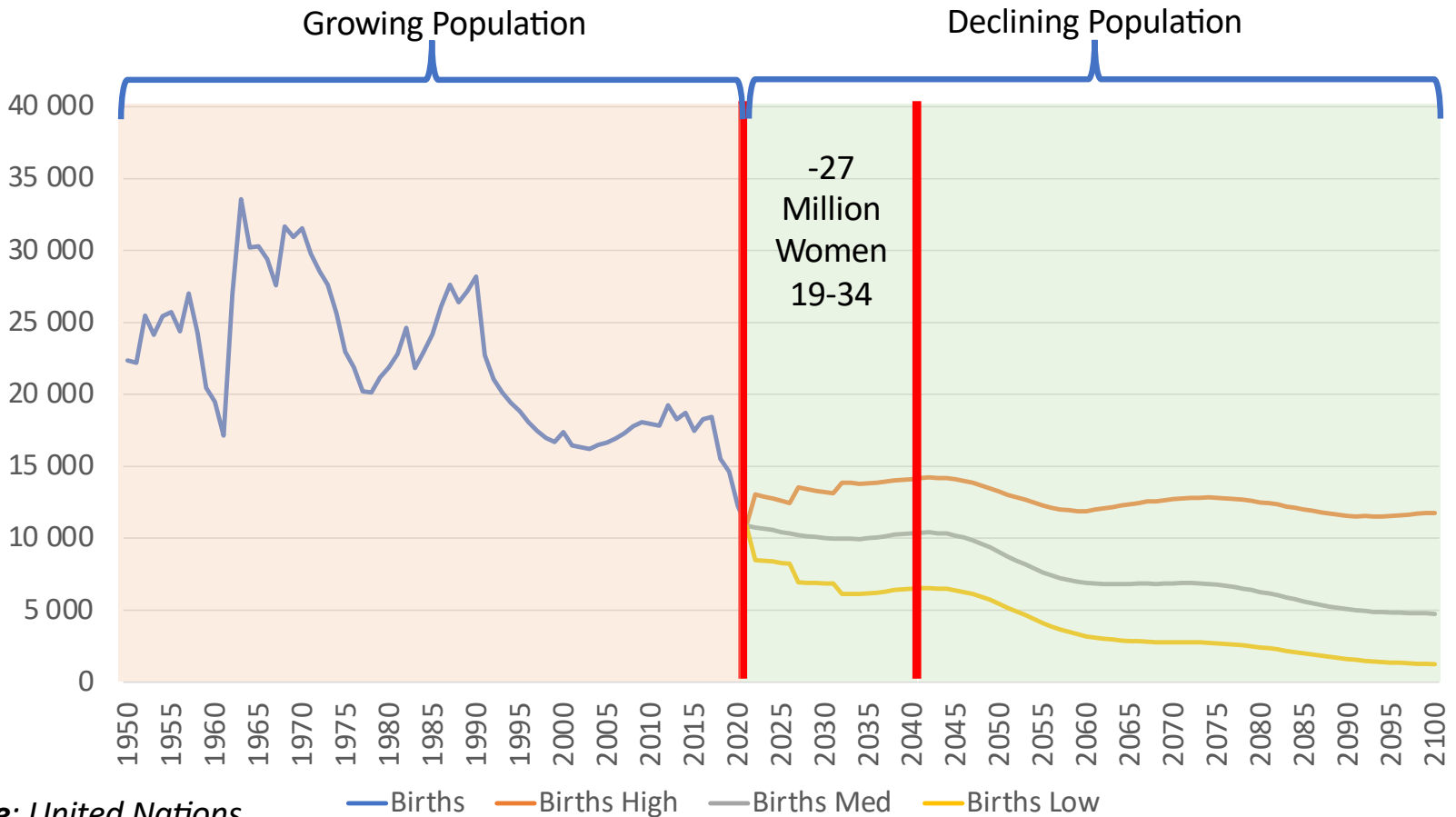
China UN Population 1950-2100



Data Source: United Nations

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China Births (Thousands)

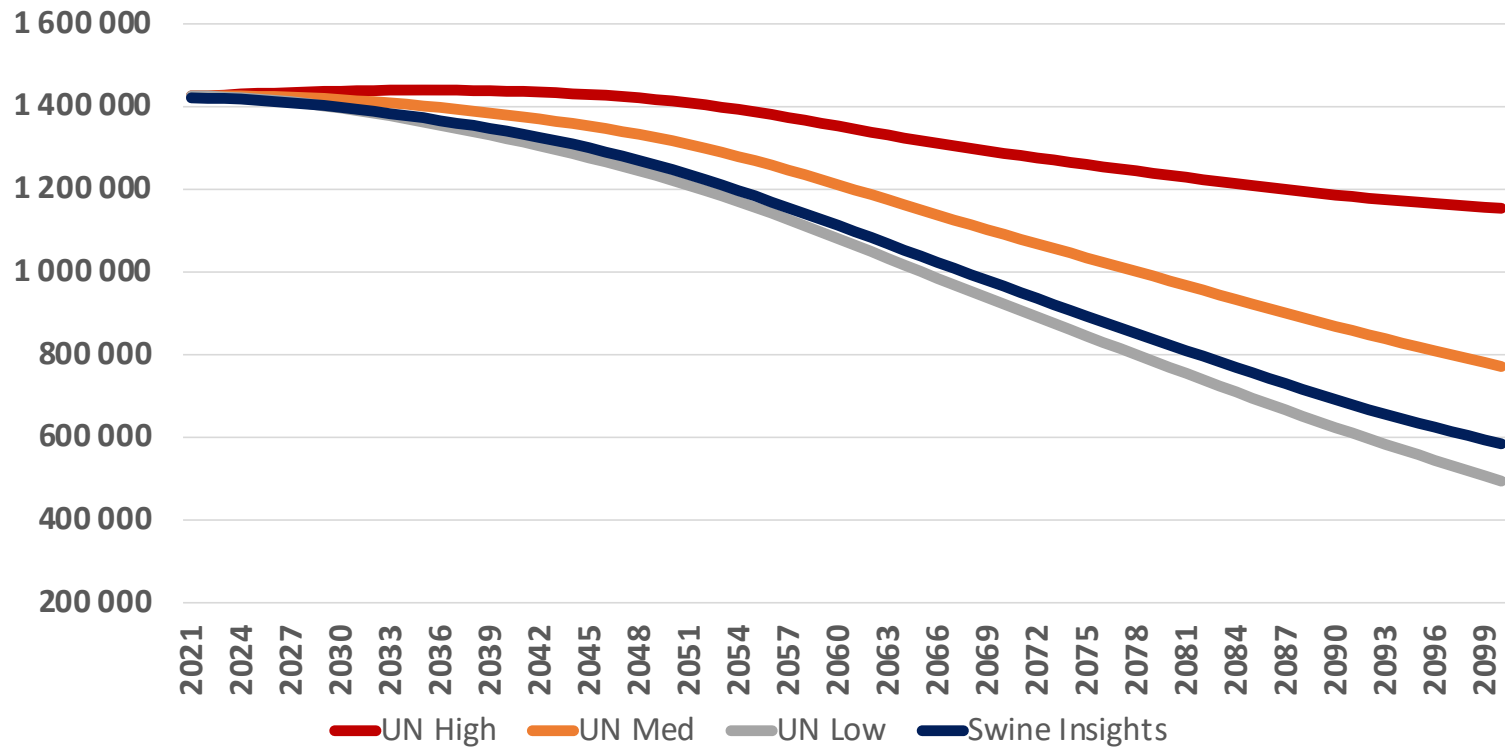


Data Source: United Nations

— Births — Births High — Births Med — Births Low

China Population Projections

2021-2100 (Thousands)



Data Source: United Nations, Swine Insights Internal

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China Economic Trends

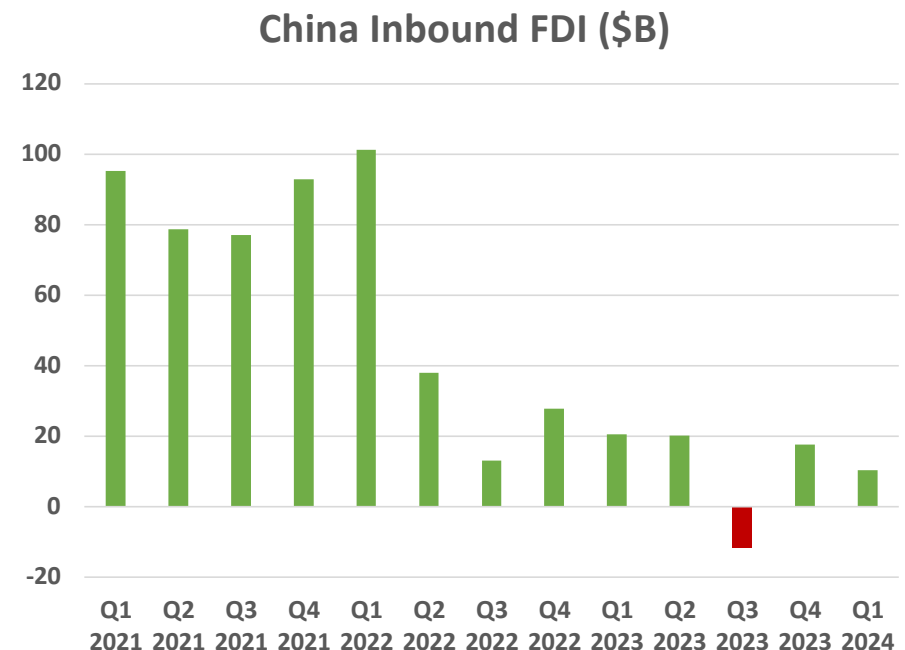
The Future of the Chinese Economy

- Four Big Issues
 - Private & Foreign Investment
 - Real Estate
 - Debt
 - Demographic Changes



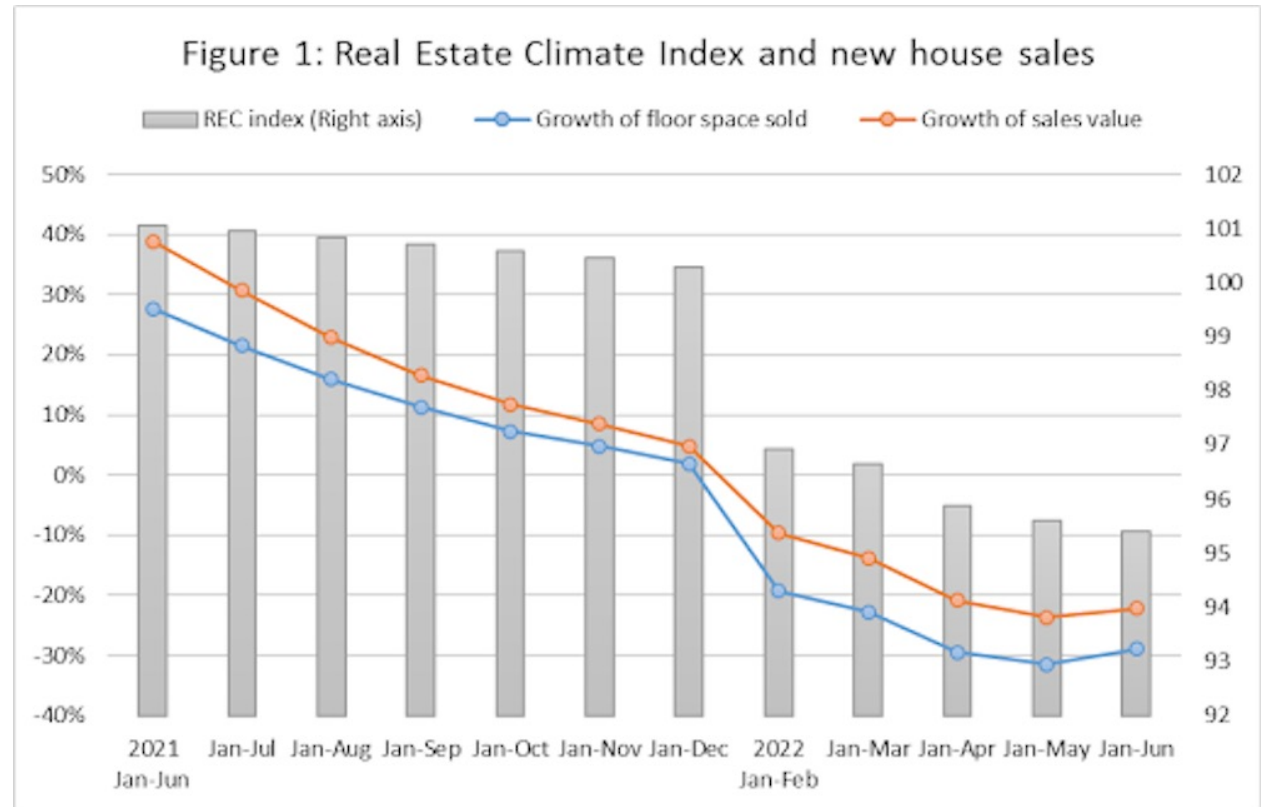
Private/Foreign Investment

- Private companies complain they can't compete with state owned enterprises
- Foreign investors are wary of a Chinese market that appears to be turning inward
- Both are concerned about tight capital controls, access to financing and rising costs



Real Estate

- Property market = >1/4 of GDP
- Housing is Unaffordable and Property Taxes Problematic

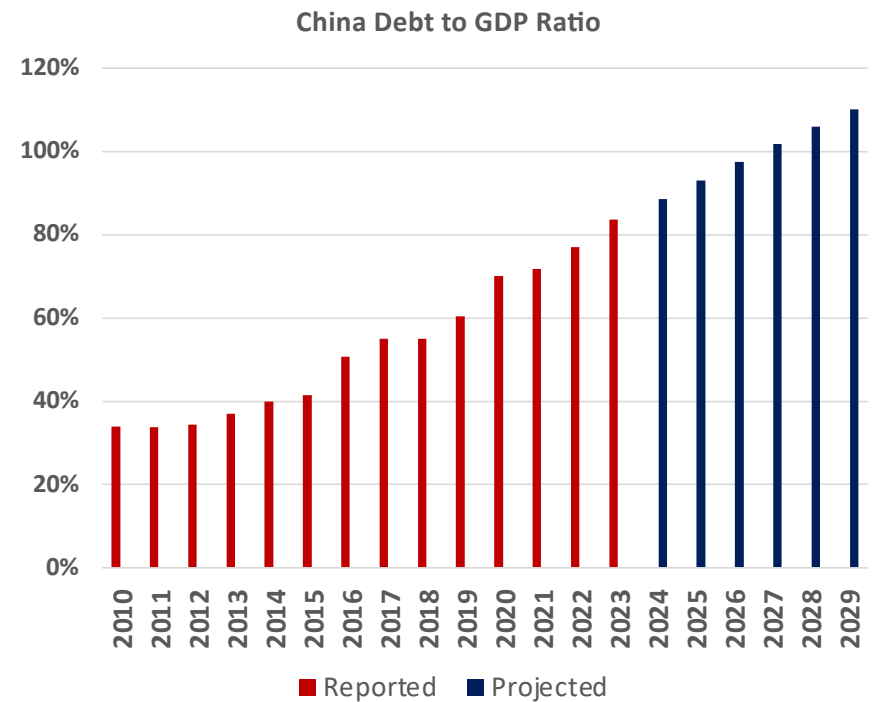


Data Source: China National Bureau of Statistics

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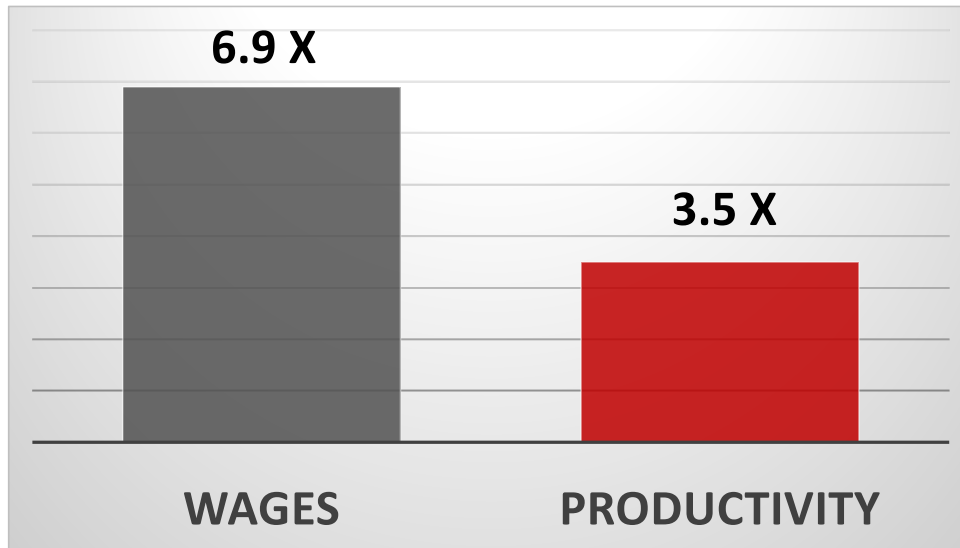
Debt

- National Debt is estimated at \$29 Trillion-mostly held by local governments
- Even the Chinese government has admitted that the debt is unsustainable



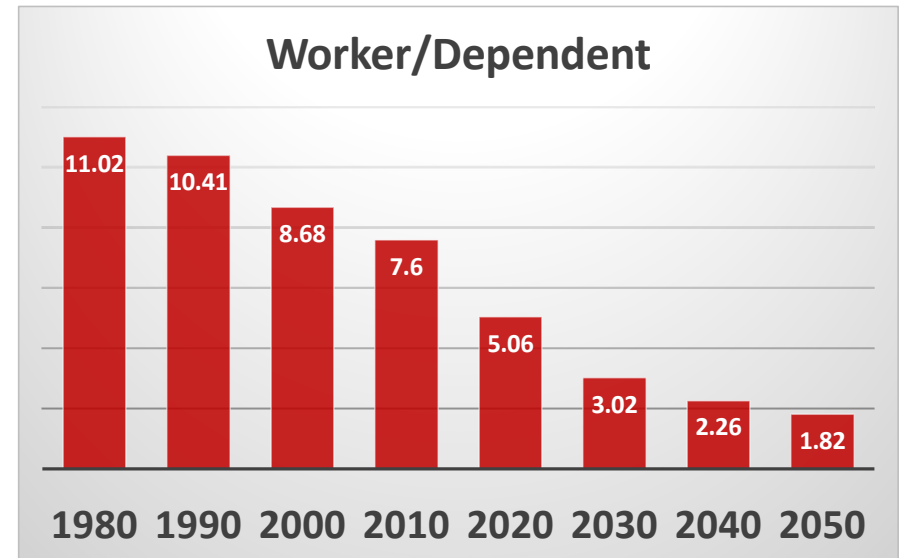
Demographic Changes

- Labor Costs
 - Technological Solutions



Data Source: IMF, United Nations (Medium Variant)

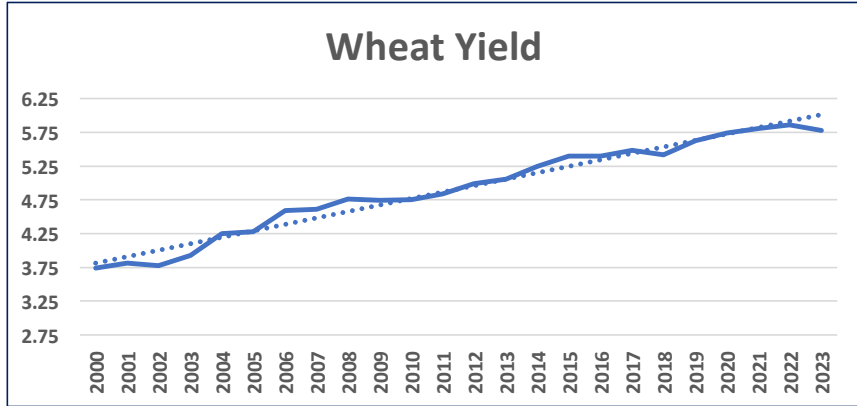
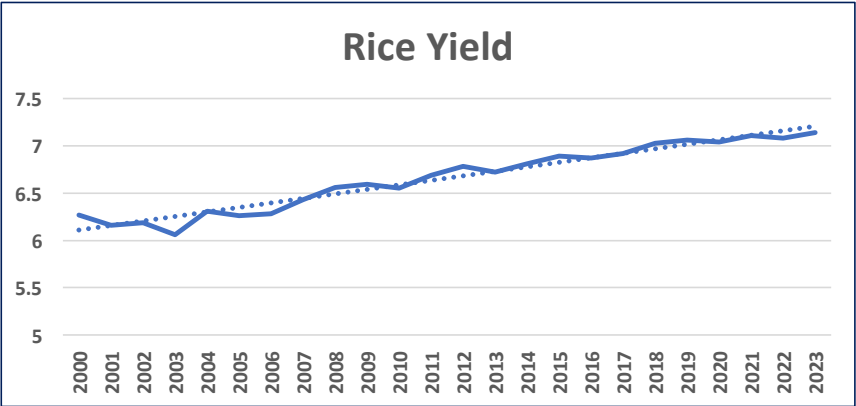
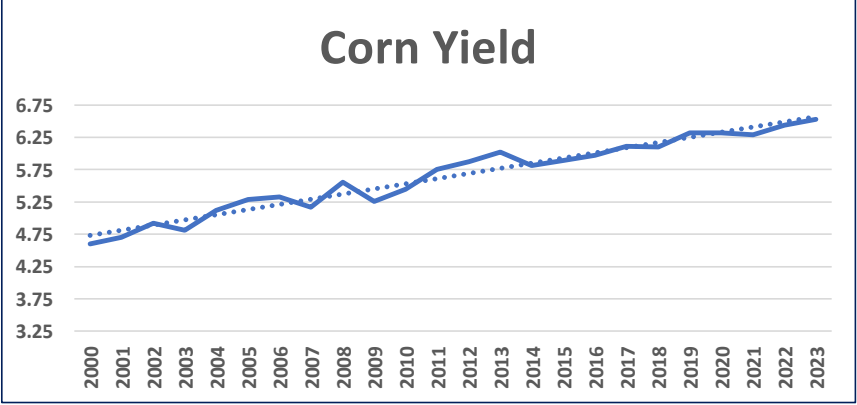
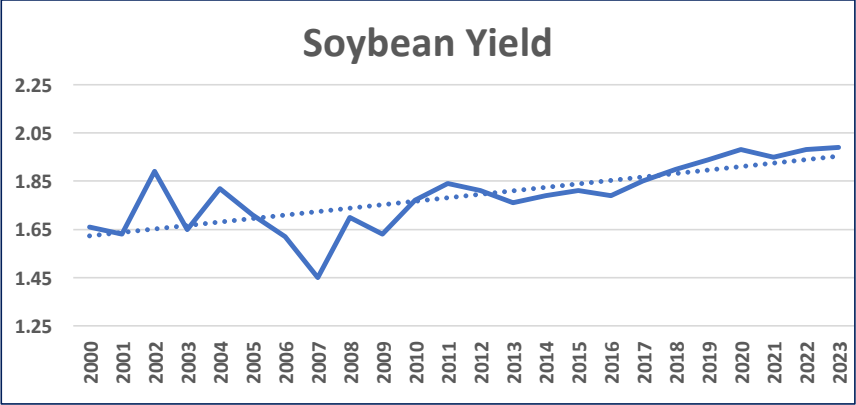
- Old Age Dependency
 - Retirement Age
 - Pension System



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China Food Self Sufficiency

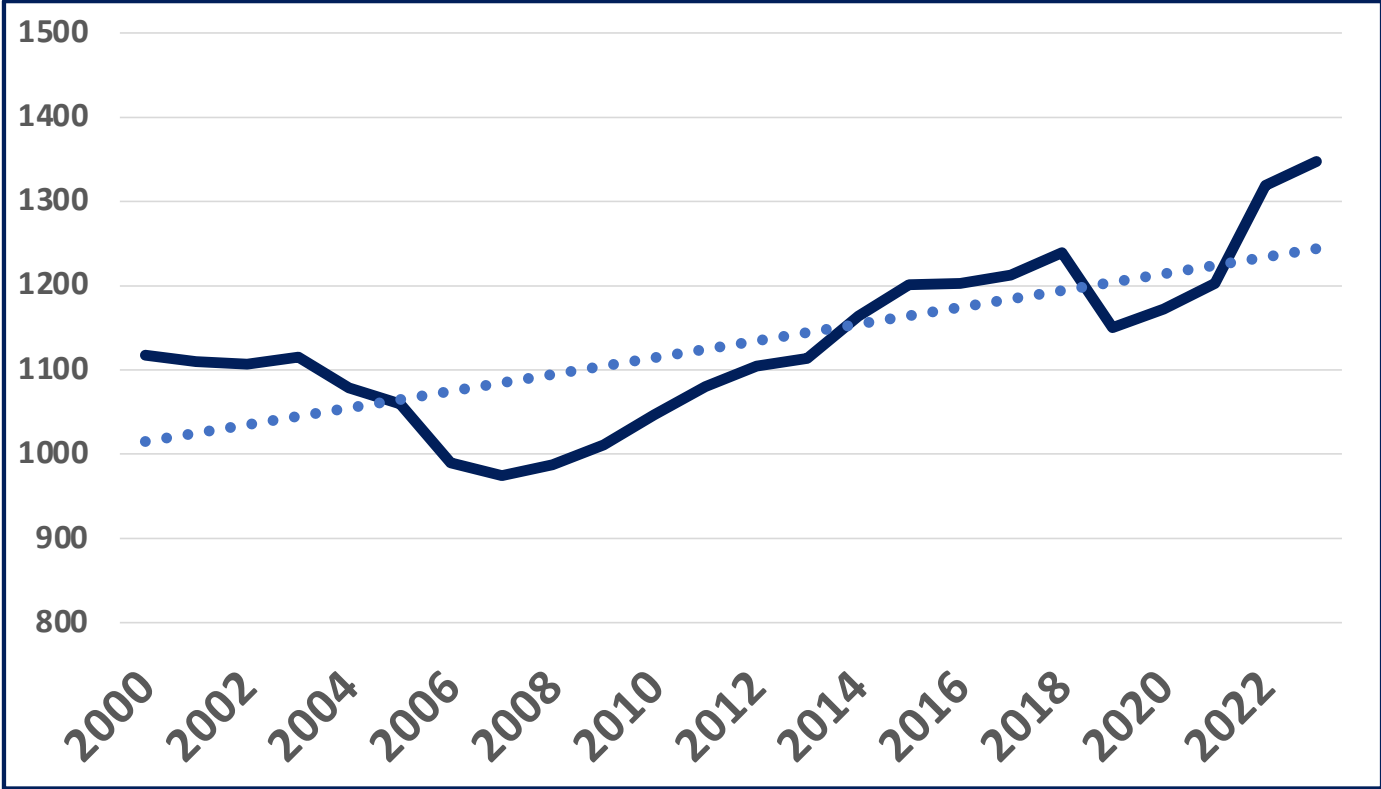
China Crop Yields 2000-2023 (MT/HA)



Data Source: USDA

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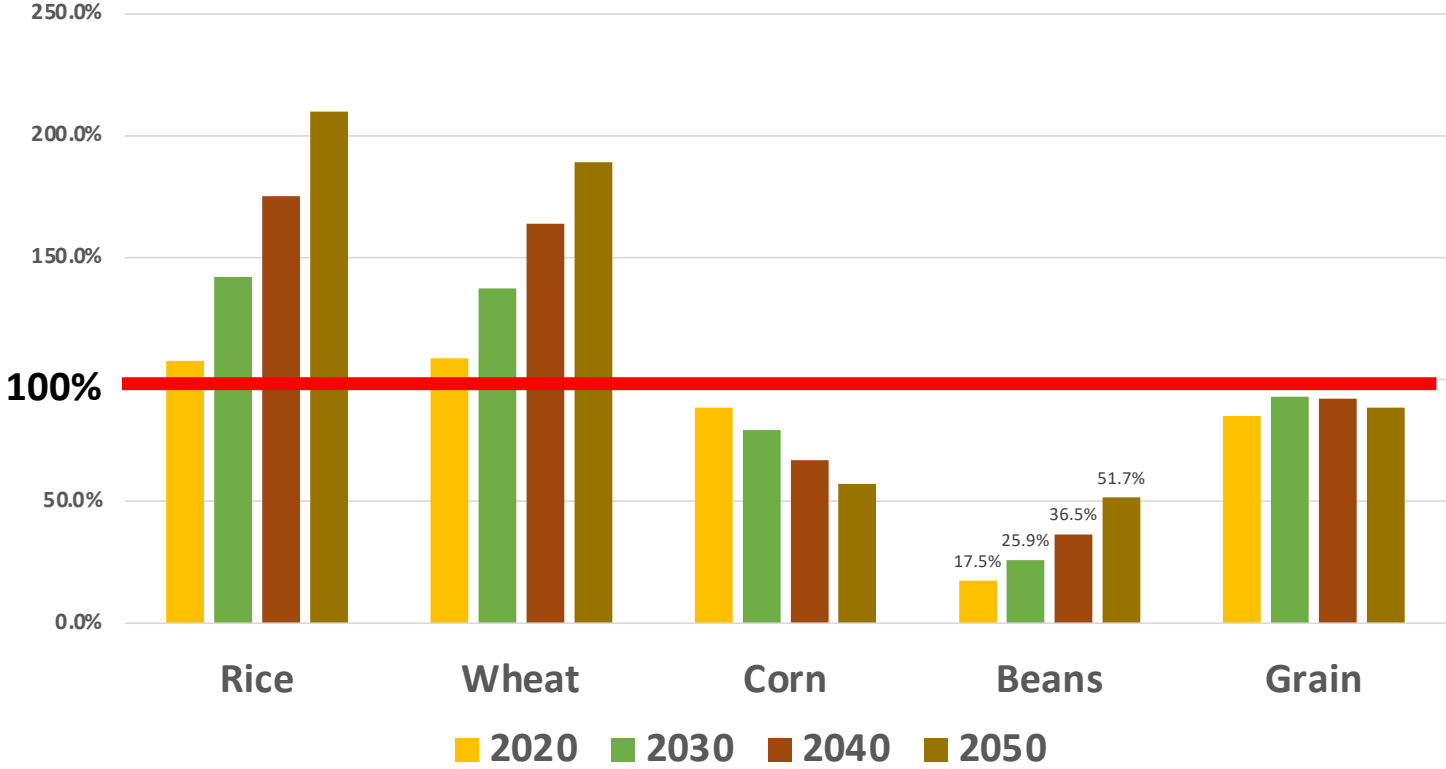
China Pork/Sow/Year 2000-2023 (kg)



Data Source: USDA

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China Projected Self Sufficiency Through 2050 in Selected Commodities



Data Source: Deng et al, 2022

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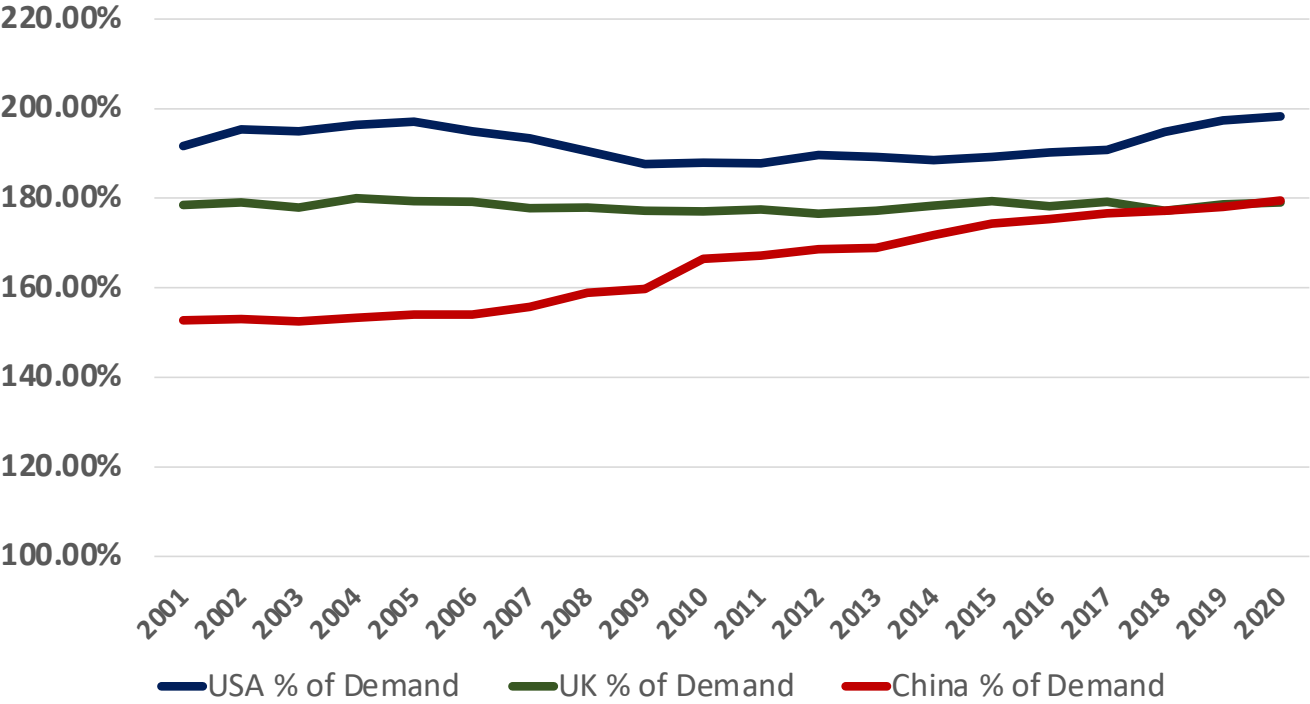
China Food Demand

China Food Demand

- How Much Will They Eat?
 - Total
 - Per Capita
- What Will They Eat?
 - Plant/Animal Based
 - Western/Traditional Diet



% of Caloric Demand Supplied



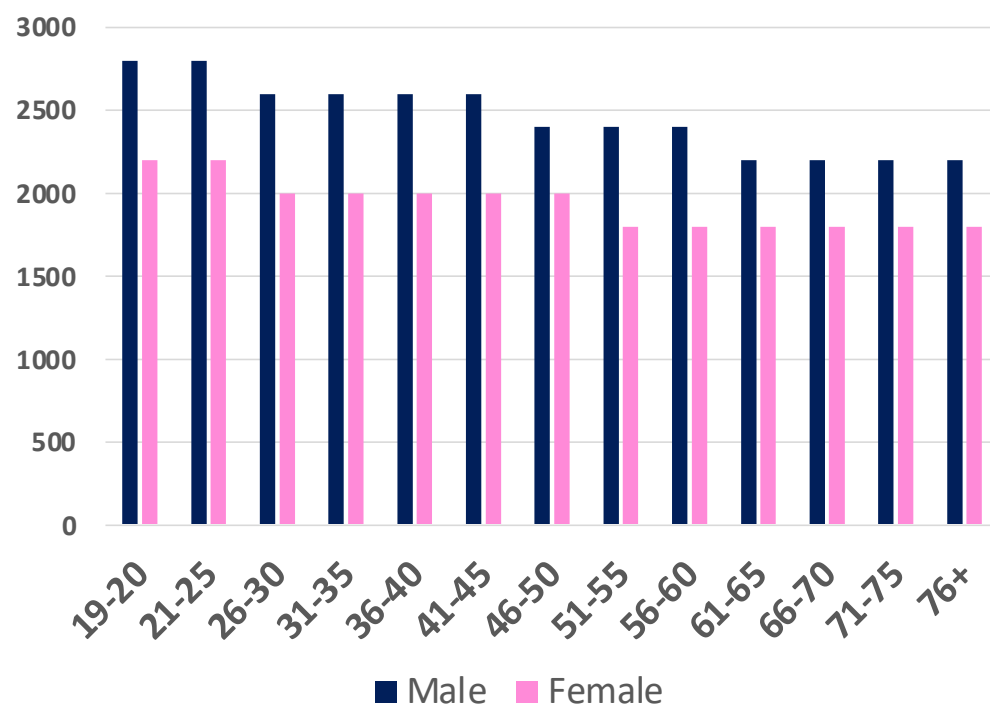
2020

USA 198.27%
UK 179.01%
China 179.48%

Data Source: FAO

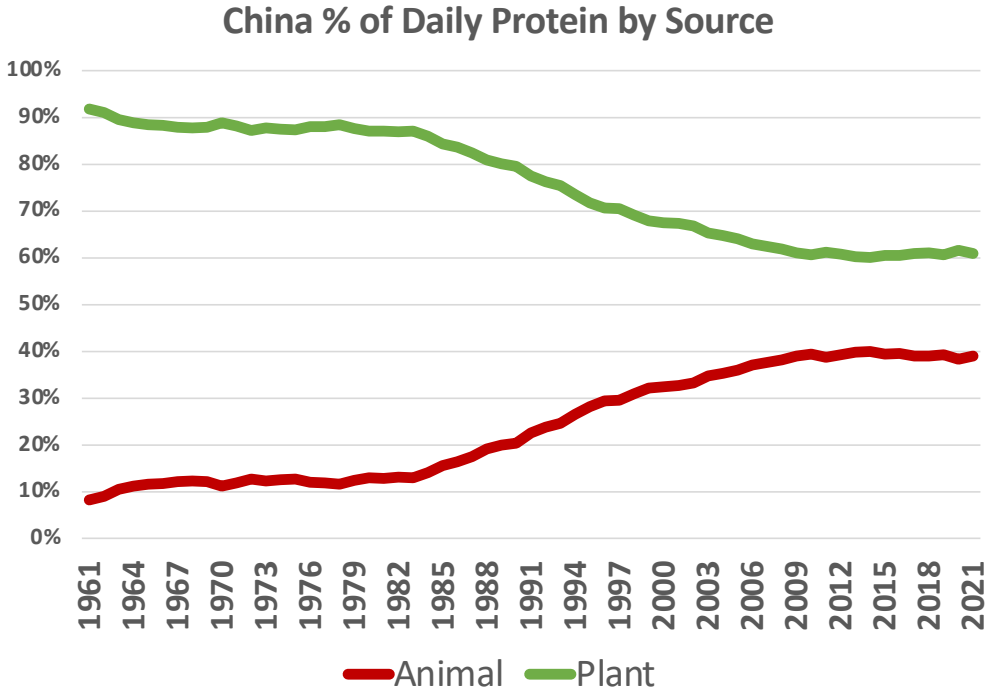
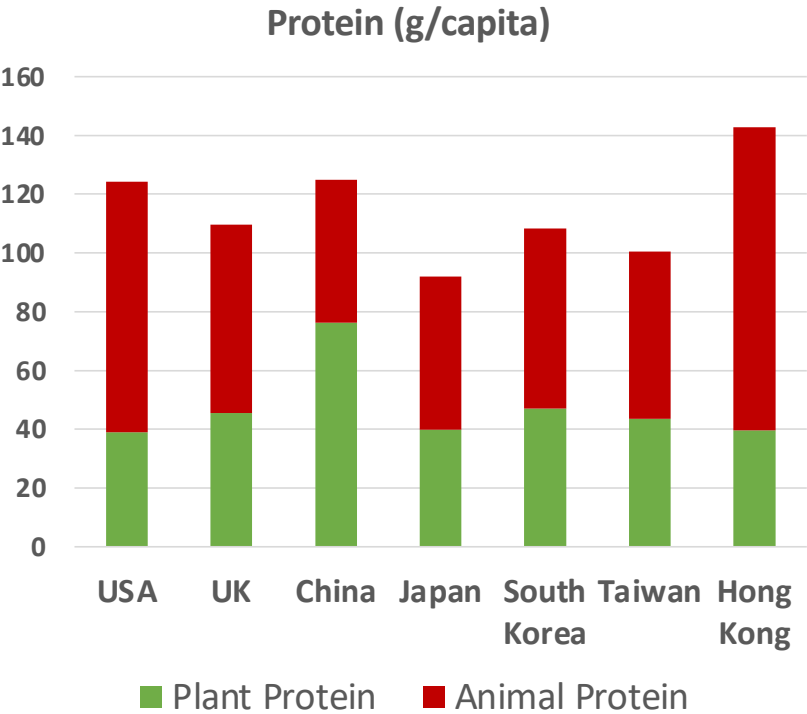
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Recommended Caloric Intake by Age/Sex



- As Populations get Older, Caloric Demand goes Down
- Younger People tend to over consume, and older people tend to under consume

China Protein Intake



Data Source: FAO

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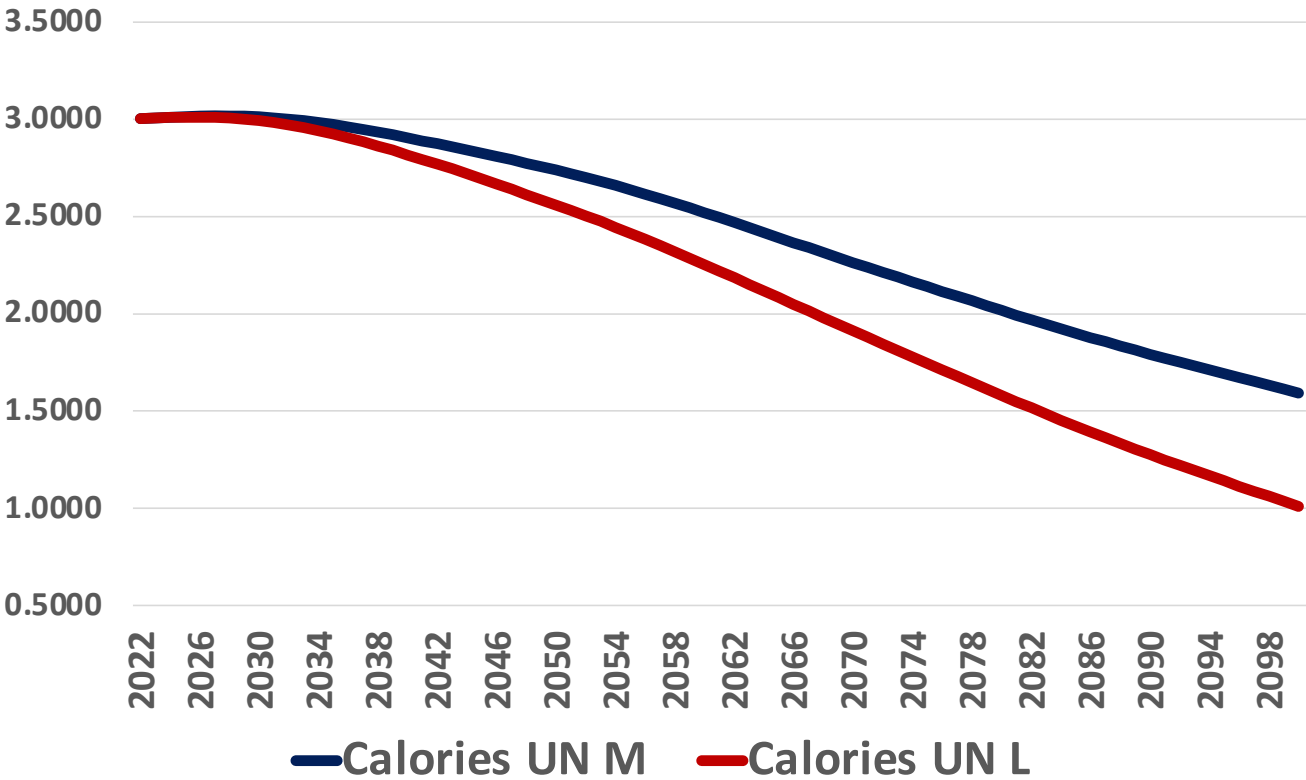
Swine Insights Food Demand Model (China)

- We expect total caloric consumption in China to decline by 13% to 19% in between now and 2050.
 - Population Decline: 8 to 14.5%
 - Population Aging: .5 to 1%
 - Food Waste Reductions: 4.2%

Photo by [Debbie Tea](#) on [Unsplash](#)

Data Source: Swine Insights Intl.

China Projected Caloric Consumption*



*In Trillions **Data Source:** Swine Insights Food Demand Model, UN, FAO

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Drivers of China Food Imports Revisited

- Population
 - Population Projected to Decline by 8-15% by 2050 and 45-65% by 2100
- Economic Growth
 - GDP Growth Slowed Average Growth in the 1980's 10.8%, Sub 4% Moving Forward?
 - Per Capita Food Consumption Peaking?
 - Higher Quality Foods
 - Meat Consumption Peaking Soon?
- Self Sufficiency
 - Ag Productivity Improving

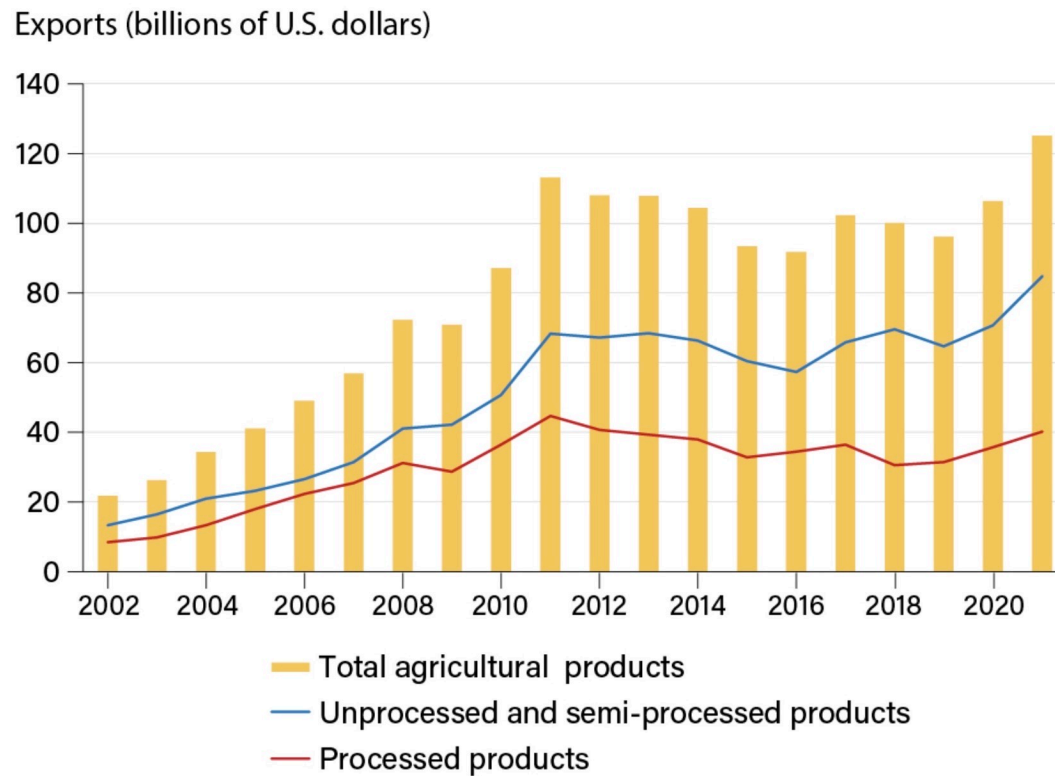


So What?

Brazil is Increasingly Dependent
on Exports

How Much Will We Produce and Where Will it Go?

Brazilian Ag Exports 2021 by Value

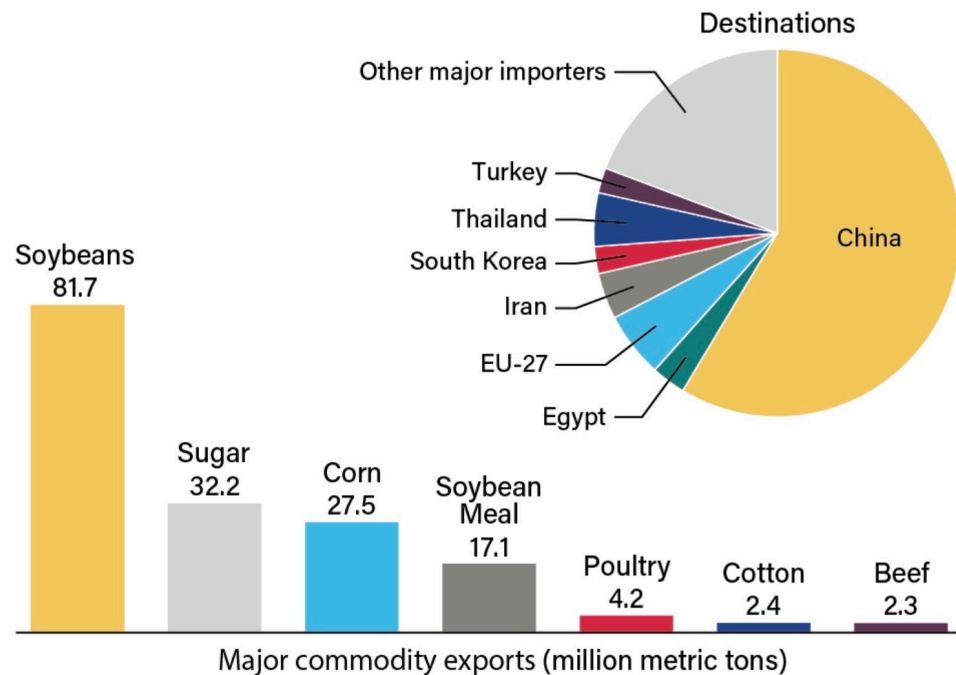


Data Source: USDA, US Dept Commerce, US Census



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Brazilian Ag Exports by Region

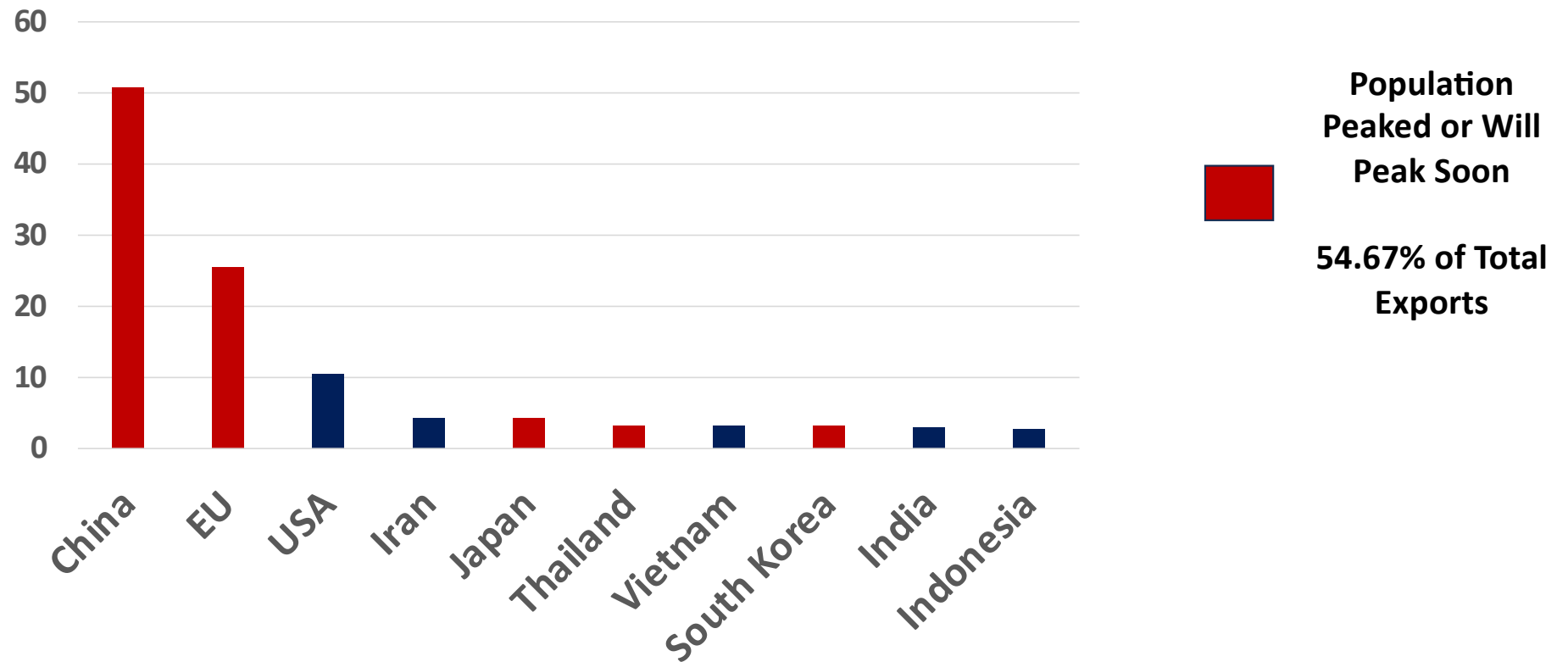


Notes: Select commodities and their destinations represent export activity for the 2020/21 marketing year. **Other major importers** include Algeria, Bangladesh, France, Hong Kong, Indonesia, Japan, Malaysia, Netherlands, Nigeria, Pakistan, Philippines, South Africa, Spain, Taiwan, United Arab Emirates, United States, Vietnam. Other minor importers are not included in this chart.

Data Source: USDA, FAS

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Top 10 Destinations for Brazilian Ag Exports



In Billions USD Data Source: USDA, FAS

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Now What?

Something Must Change

Awareness, Dialogue, Action

Awareness

- Not If, but When/How
- Massive shift to different markets in the near term
 - Away from Europe and East Asia
 - Temporarily to Latin America and SE Asia
 - Long Term to the Middle East and Africa
- Ultimately, global population decline will require a permanent shift in the “feeding the world” narrative.

Start a Dialogue Within the Industry

- How will these changes impact the industry?
- What systems will need to change to adjust?
- How will incentive structures need to change?
- The Faster We Recognize the Need for Change, the Faster We Can Begin Crafting Solutions. The Faster We Create Solutions, the Easier They Will Be To Implement

Action: Messaging

- Put This Topic on the Agenda
- We Need a New Narrative
 - “Feeding the World” sends the wrong signals and it’s outdated.
- Move Away from the “Commodity Mindset”
 - Scarcity -> Abundance
 - Feeding More -> Feeding Fewer
 - Quantity -> Quality

Action: Policy & Research

- Driven by producers through commodity groups and other industry organizations.
- Focus on Consumers
 - “How Can We Sell What We Produce?” -> “How Can We Produce Stuff People Want to Buy?”
- Research
 - Consumer Research, Especially on Older Consumers
 - Intersection of Demographics & Economics
 - Defining Quality



Action: Business Strategy

- The Pace of Change is Accelerating
- You Must Learn How to Spend Time Thinking About the Future in a Productive Way

Strategic Foresight

- You don't need to predict the future to prepare for the future.
- Strategic Foresight allows you to:
 - prepare for future challenges and opportunities
 - shape the future in ways that are beneficial



Implementing Strategic Foresight

- Steps:
 - Identifying Signals of Change and Trends
 - Scenario Development
 - Strategic Adjustments
- Benefits:
 - Resilience
 - Innovation
 - Competitive Advantage
- We Offer Workshops, Training and Custom Foresight Projects

Q&A

There are no dumb questions, but there are dumb answers, so the pressure is all on me!

Reasons for Optimism

- Brazilian Agriculture is and will continue to be among the most competitive in the world
 - Low Cost of Production
 - Strong Efficiency & Productivity
 - Water and Land Resources

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Obrigado!

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