The Geography of Agricultural Trade

Partners and Competitors

David L. Ortega
Professor
Noel W. Stuckman Chair in Food Economics & Policy

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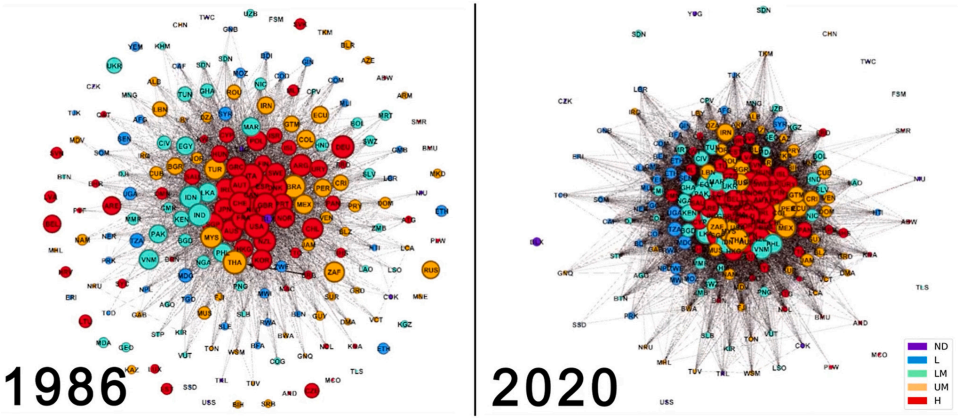
Why do we engage in trade?

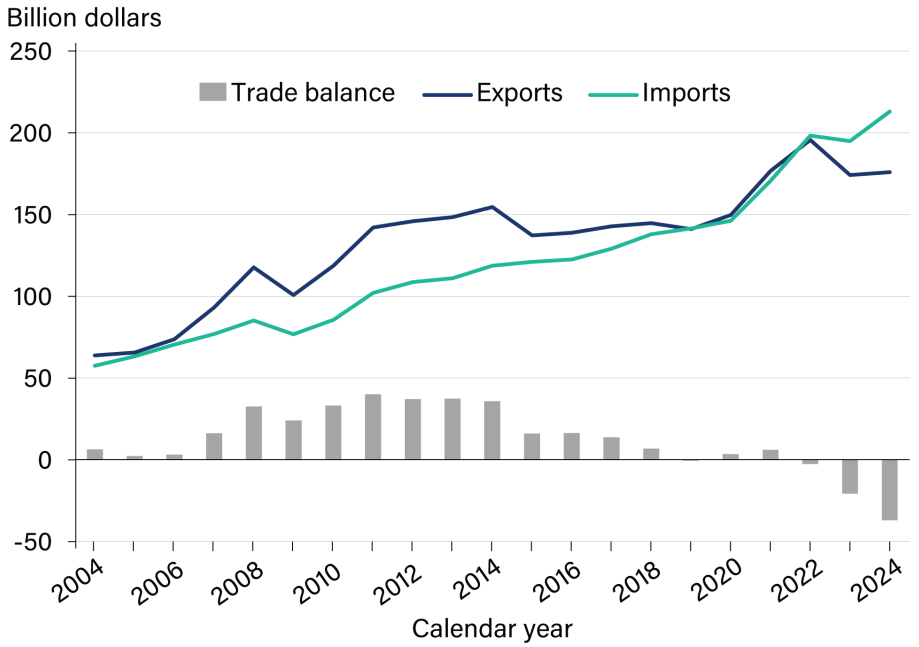
- Imports
  - Year-round consumer demand
  - Cheaper (e.g. lower labor costs)
  - Consumer preferences
- Export
  - Comparative advantage
  - Income and market growth
  - Geopolitics and soft power



Source: Silvestrini et al., 2023

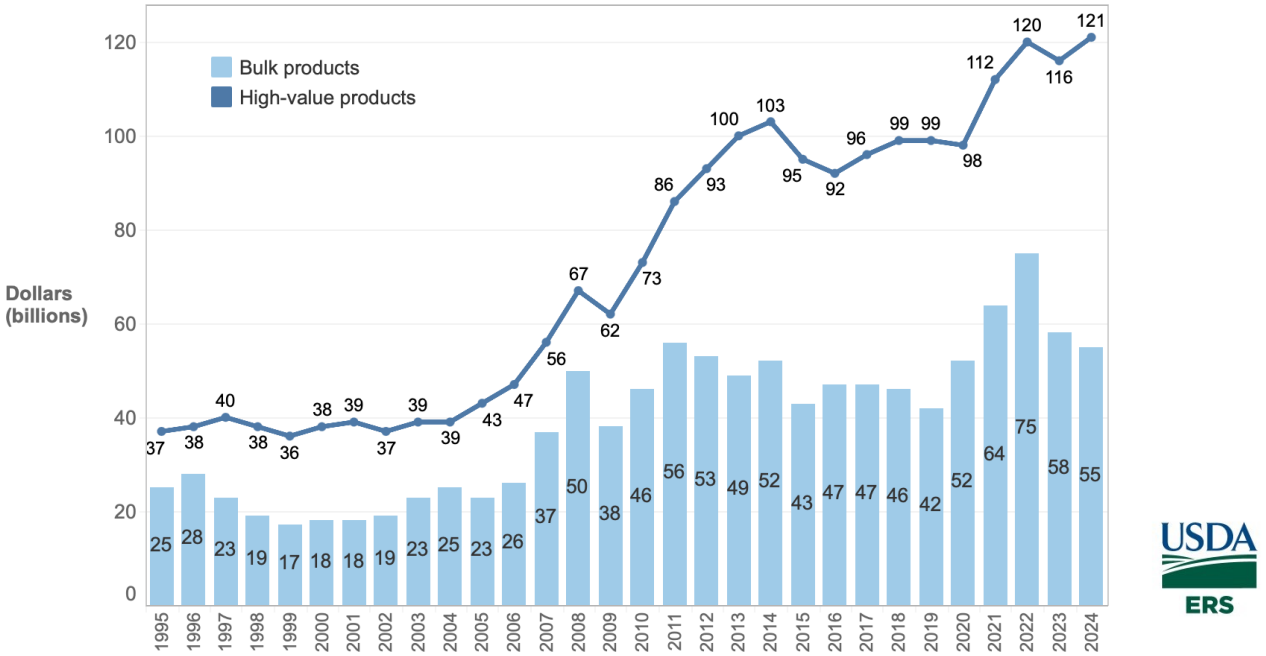
U.S. food and agricultural trade balance

- Current net importer
- Exports stalled 2014-2020
  - Competition
  - Strong dollar
  - Trade barriers
- Strong import growth
  - Strong economy
  - Rising consumer demand



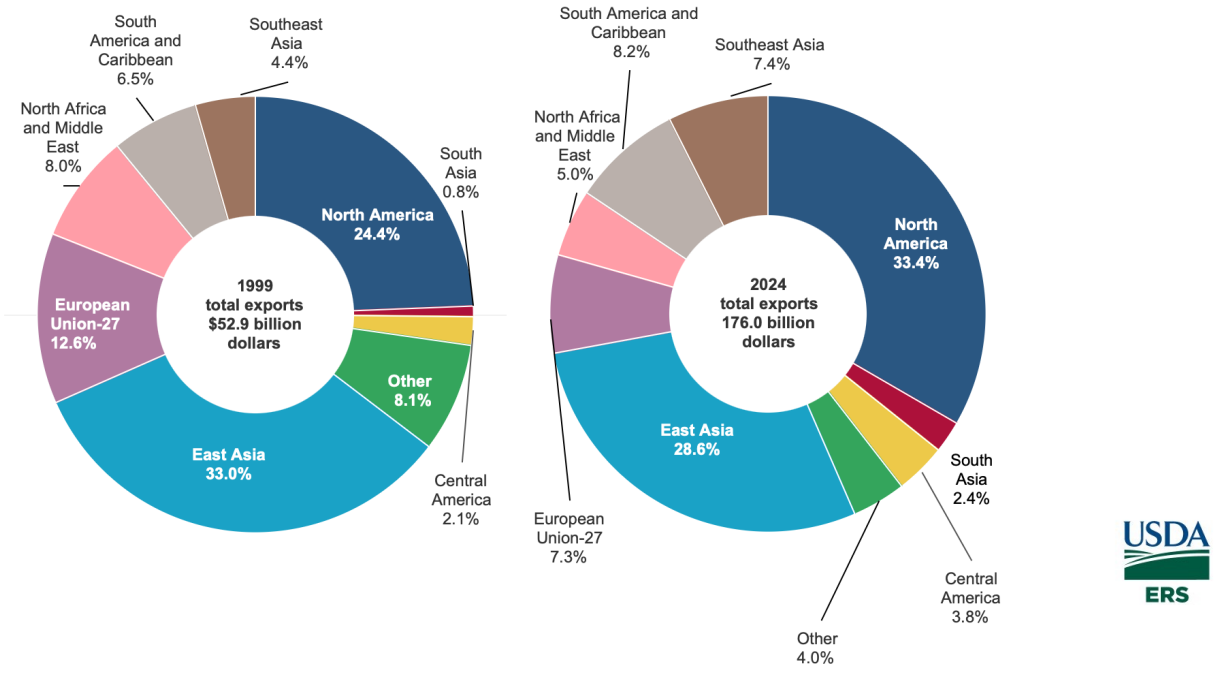
USDA ERS

U.S. exports of bulk and high-value commodities



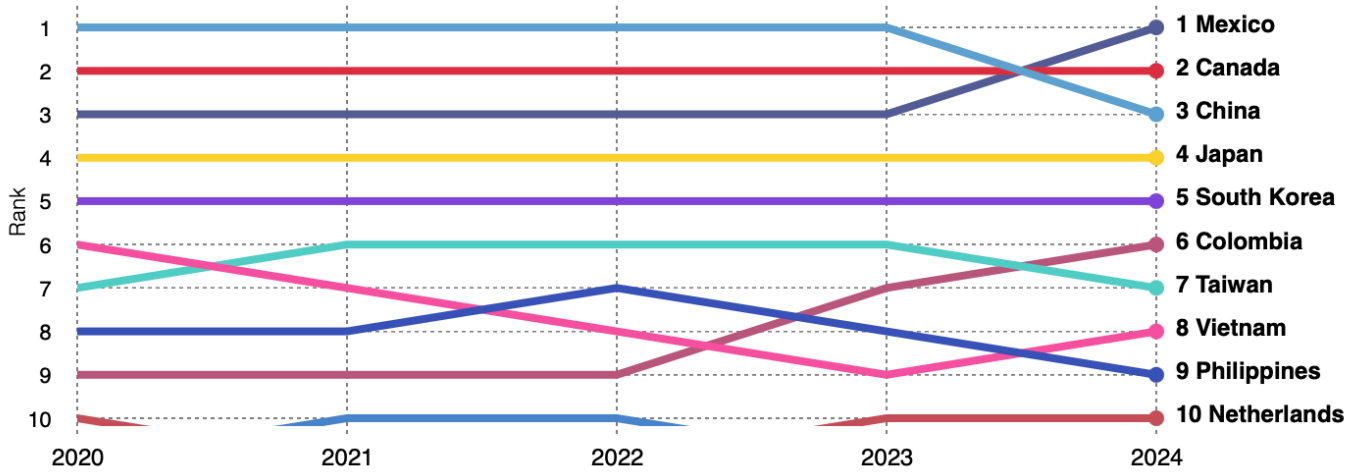
USDA ERS

Share of U.S. export destinations



USDA ERS

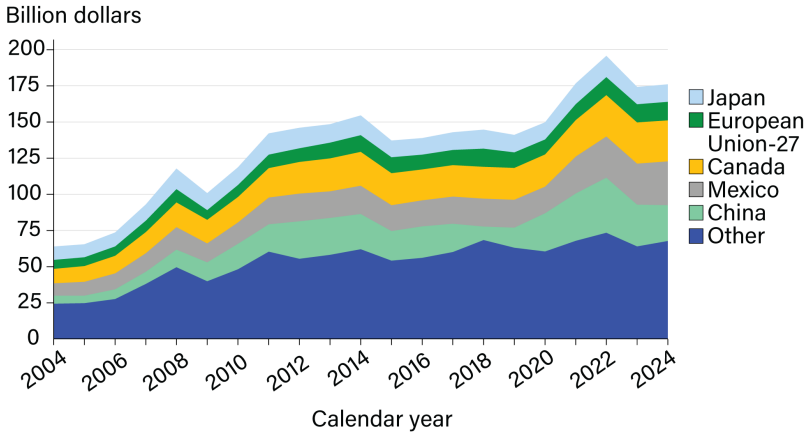
Top 10 U.S. ag. and food export markets, 2020-2024



Source: USITC DataWeb/Census, accessed February 13, 2025.
Note: Import values are based on U.S. customs value; export values are based on free alongside ship value, U.S. port of export.

US agricultural exports markets

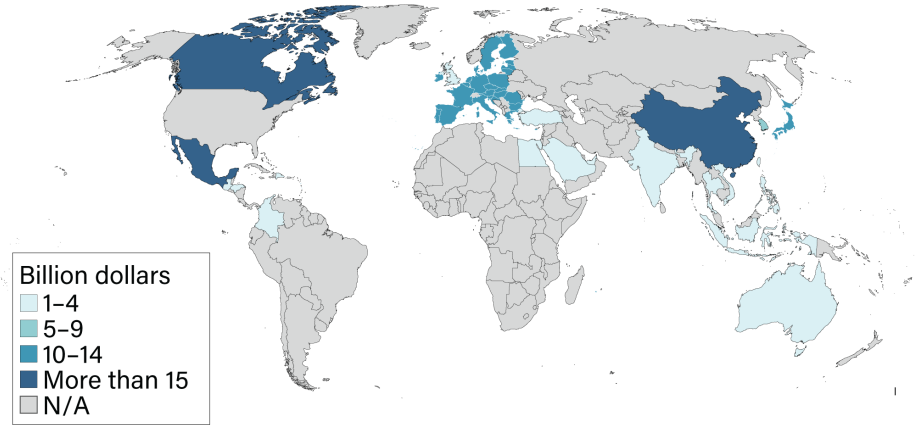
Top five markets for U.S. agricultural exports, 2004-24



Note: Values are not adjusted for inflation.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census.

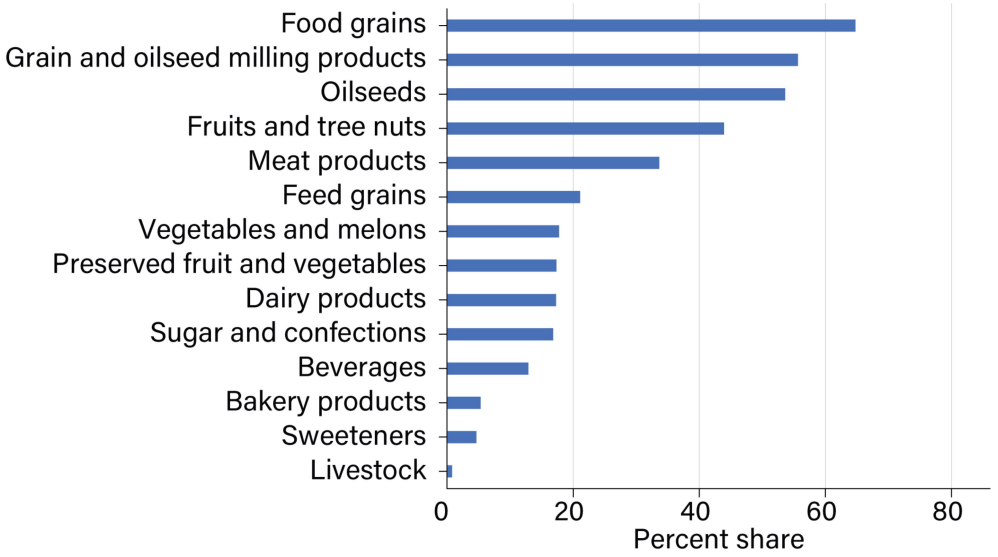
Top 25 U.S. agricultural export destinations, 2020–24 average



Note: Countries of the European Union are aggregated.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census.

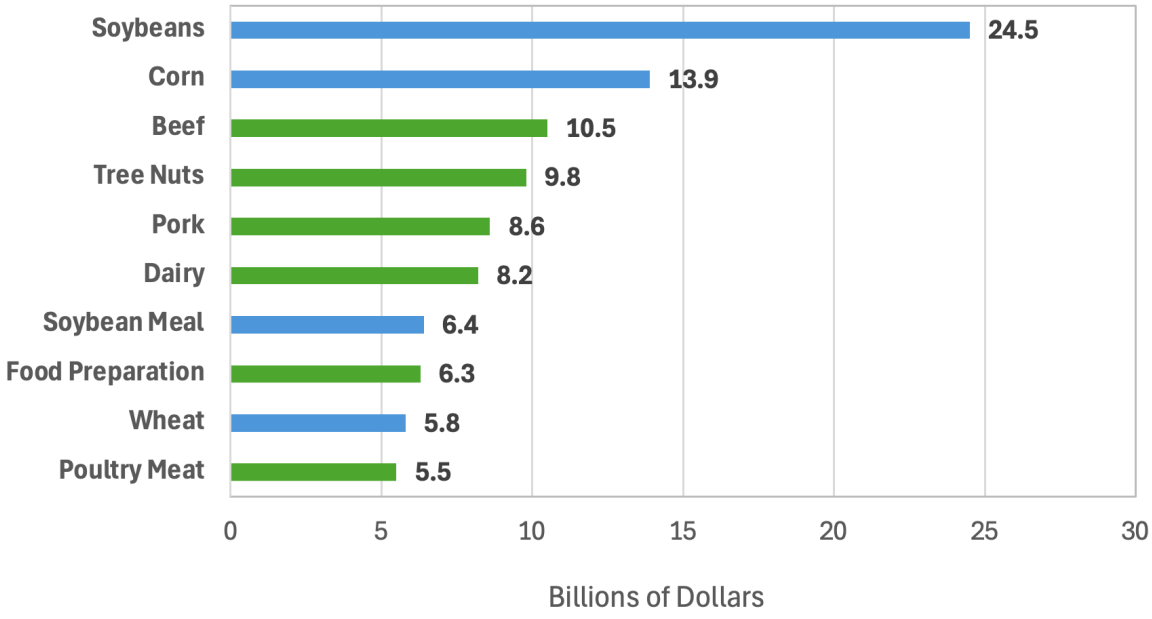
Export value share of production, 2013-22



USDA ERS

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census.

Top 10 agricultural exports by value 2024

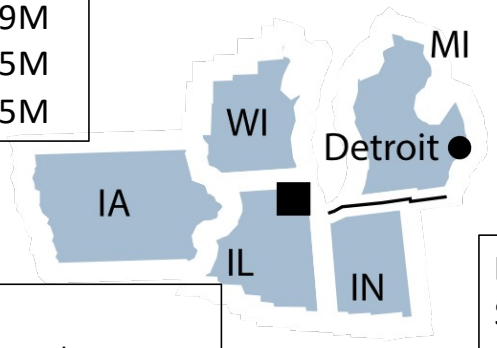


Source: USDA FAS

Top 5 ag. exports by State in 2023 (by state export*)

WISCONSIN	
Dairy	$1.07B
Soybeans	$731M
Corn	$409M
Feeds	$315M
Beef	$285M

MICHIGAN	
Soybeans	$703M
Dairy	$419M
Corn	$285M
Feeds	$228M
Soybean meal	$186M



IOWA	
Soybeans	$3.60B
Pork	$2.8B
Corn	$2.2B
Feeds	$1.7B
Soy meal	$953M

ILLINOIS	
Soybeans	$4.5B
Corn	$2.2B
Feeds	$1.6B
Soybean meal	$1.2B
Proc. Grain	$600M

INDIANA	
Soybeans	$2.2B
Corn	$946M
Feeds	$714M
Soybean meal	$580M
Pork	$446M

USDA ERS

Top 5 ag. exports by State in 2024 (by loading point/port)

WISCONSIN	
Dairy	$650M
Food Prep.	$257M
Beef	$206M
Proc. Veg	$181M
Meat	$173M

MICHIGAN	
Food Prep.	$448M
Dairy	$403M
Soymeal	$268M
Baked goods	$191M
Ess. Oils	$153M

IOWA	
Pork	$1.60B
Corn	$900M
Soy meal	$497M
Ethanol	$496M
Sweeteners	$466M

ILLINOIS	
Soybeans	$2.4B
Corn	$1.6B
Dist. Grain	$946M
Pork	$754M
Food Prep.	$456M

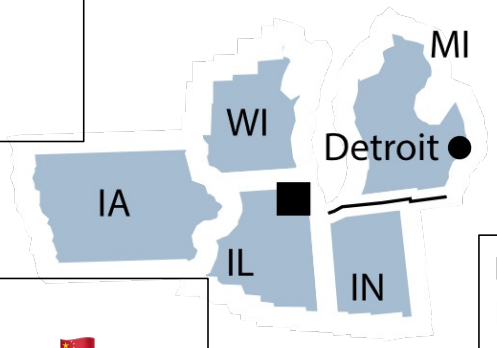
INDIANA	
Feeds, meals	$253M
Dextrins, proteins	$247M
Pork	$225M
Sweeteners	$191M
Dairy	$136M

USDA ERS

Top 5 ag. exports by State in 2024 (by loading point/port)

WISCONSIN
- Dairy
- Food Prep.
- Beef
- Proc. Veg
- Meat

MICHIGAN
- Food Prep.
- Dairy
- Soymeal
- Baked goods
- Ess. Oils



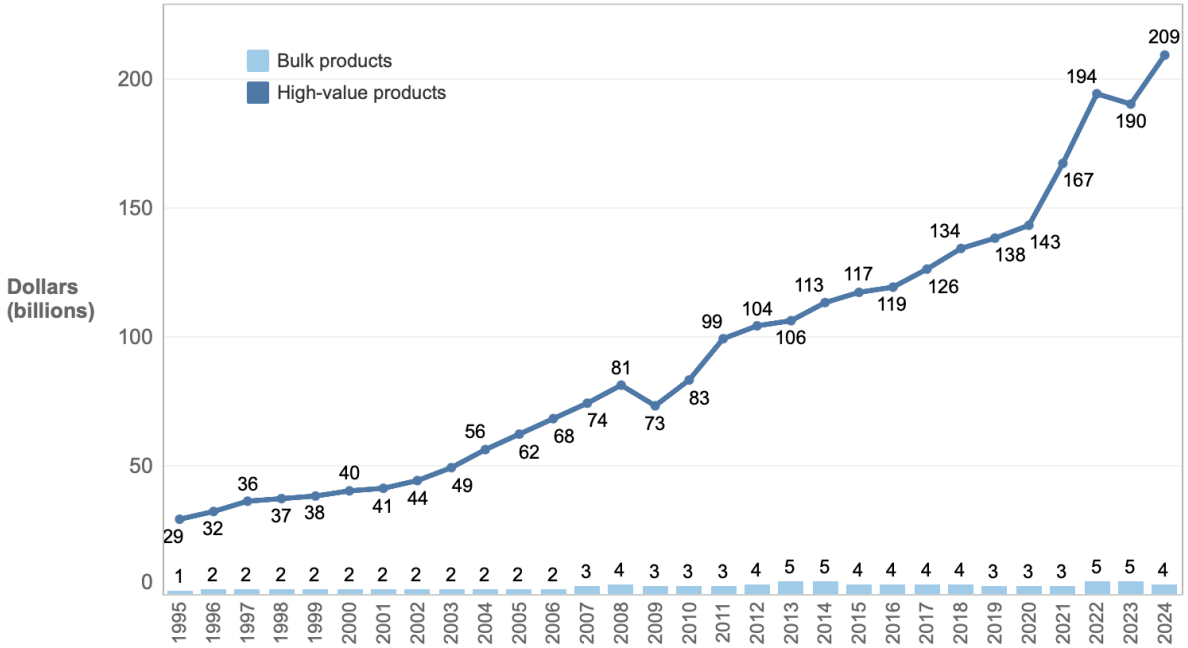
IOWA
- Pork
- Corn
- Soy meal
- Ethanol
- Sweetners

ILLINOIS
- Soybeans
- Corn
- Dist. Grain
- Pork
- Food Prep.

INDIANA
- Feeds, meals
- Dextrins, proteins
- Pork
- Sweetners
- Dairy

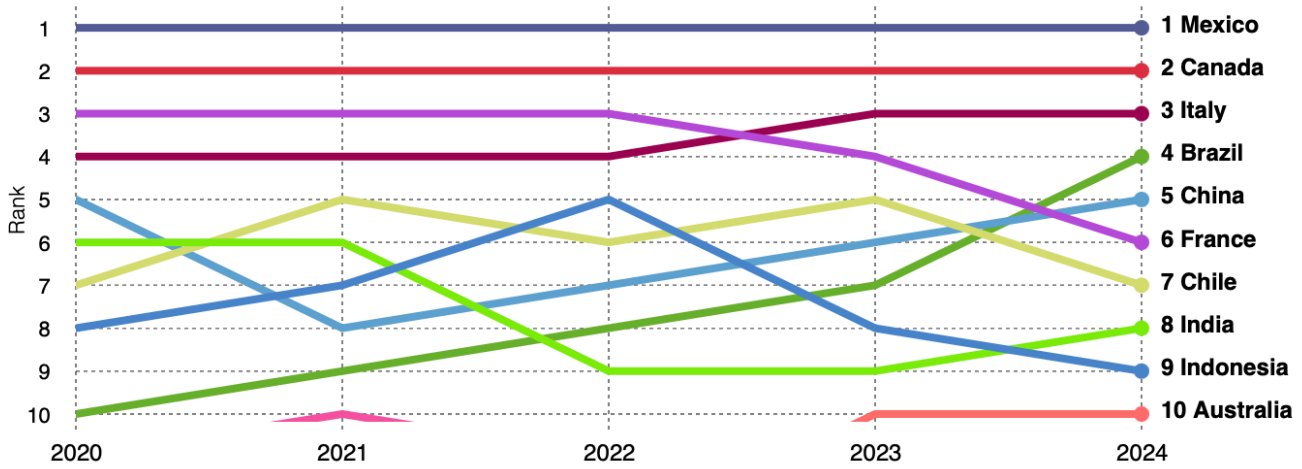
USDA ERS

U.S. imports of bulk and high value commodities



USDA ERS

Top 10 U.S. food and ag. import sources, 2020-2024



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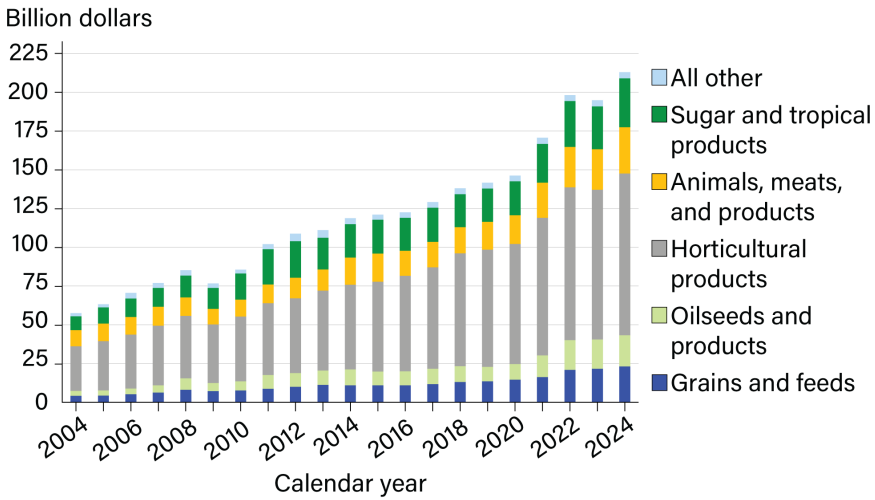
U.S. agricultural import sources

U.S. agricultural imports, 2004–24



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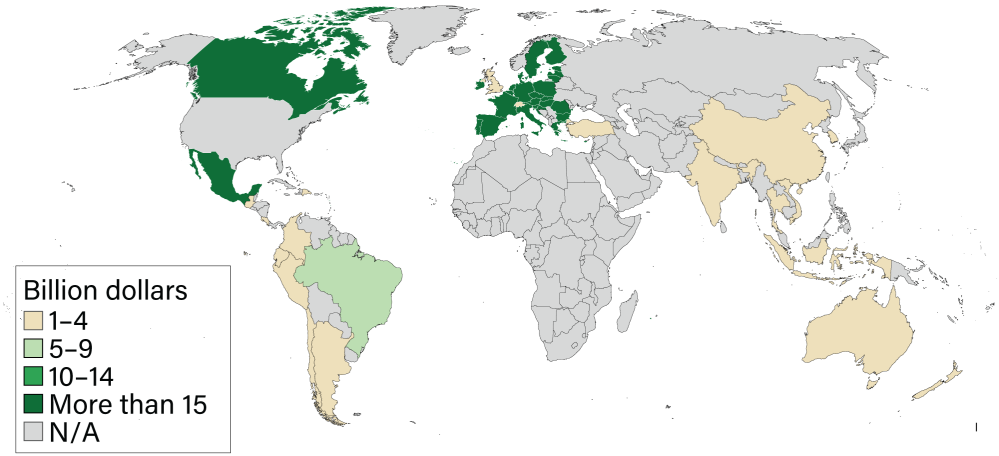
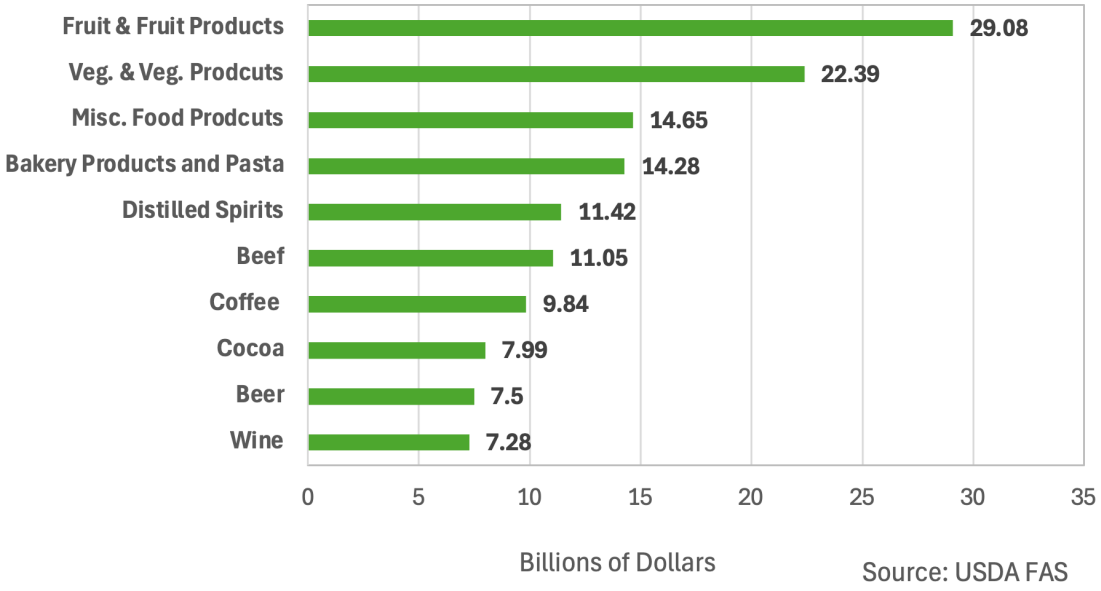
Top 25 U.S. agricultural import sources, 2020–24 average



Note: Countries of the European Union are aggregated.

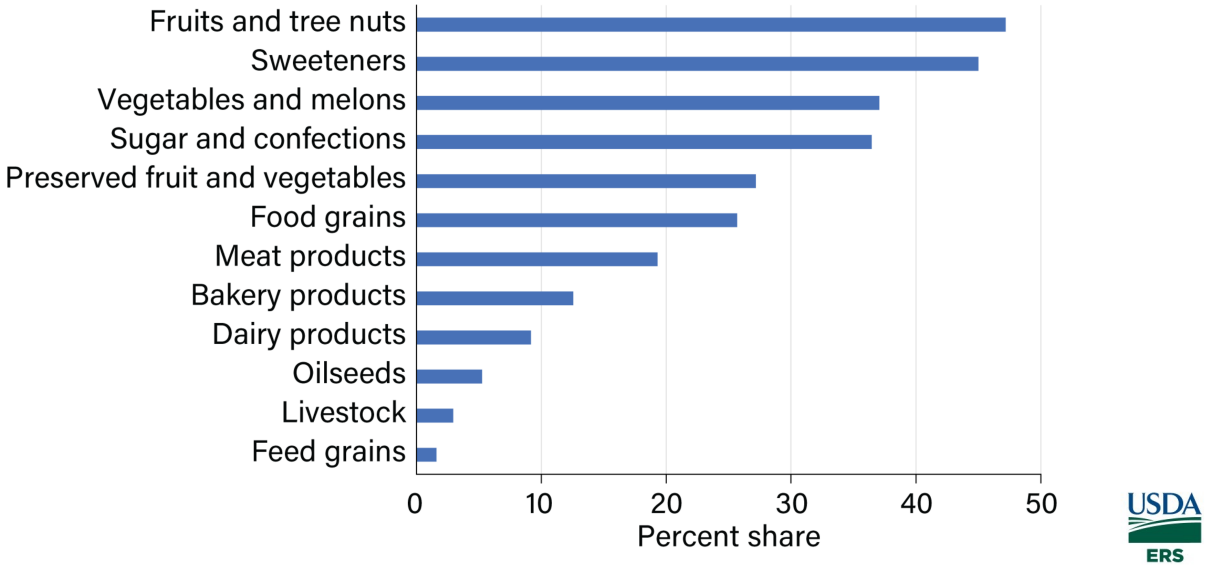
Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census.

Top 10 U.S. food & ag. imports by value 2024



Source: USDA FAS

Import value share of consumption, 2013-22



Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census.

Top 5 ag. imports by State in 2024

WISCONSIN	
Proc. F&V	$229M
Baked goods	$125M
Dairy	$102M
Yeast/Baking Pwd.	$96M
Fresh Veg	$91M

MICHIGAN	
Fresh Veg	$707M
Beef	$381M
Baked goods	$306M
Proc. F&V	$243M
Spirits	$154M

IOWA	
Veg. oil	$365M
Livestock	$144M
Feed grains	$119M
Other Livestock	$103M
Coarse grains	$100M

ILLINOIS	
Beer	$5.8B
Baked goods	$1.4B
Spirits	$975M
Dairy	$921M
Chocolate	$862M

INDIANA	
Baked goods	$367M
Spirits	$365M
Veg oil	$211M
Chocolate	$140M
Pet food	$139M

USDA ERS

Top 5 ag. imports by State in 2024

WISCONSIN
- Proc. F&V
- Baked goods
- Dairy
- Yeast/Baking Pwd.
- Fresh Veg

MICHIGAN
- Fresh Veg
- Beef
- Baked goods
- Proc. F&V
- Spirits

IOWA
- Veg. oil
- Livestock
- Feed grains
- Other Livestock
- Coarse grains

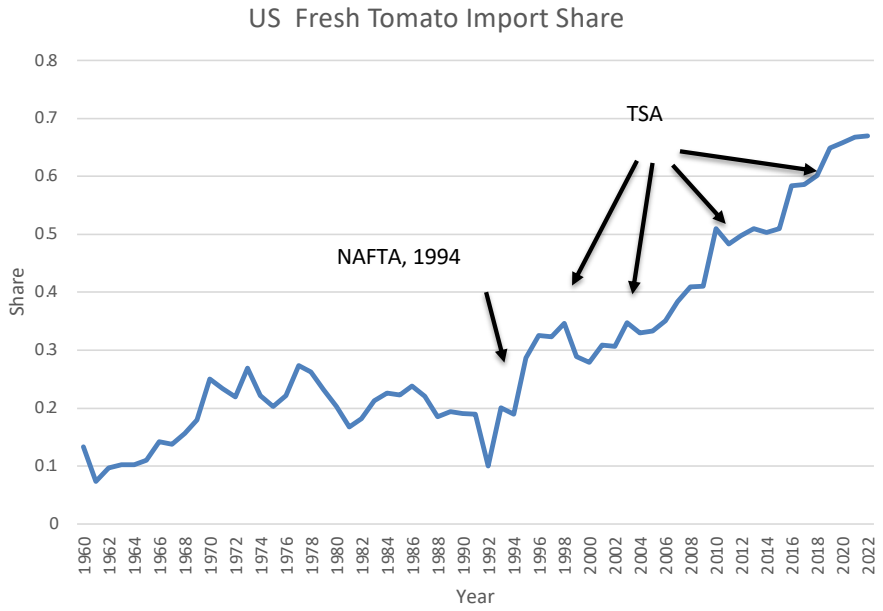
ILLINOIS
- Beer
- Baked goods
- Spirits
- Dairy
- Chocolate

INDIANA
- Baked goods
- Spirits
- Veg oil
- Chocolate
- Pet food

USDA ERS

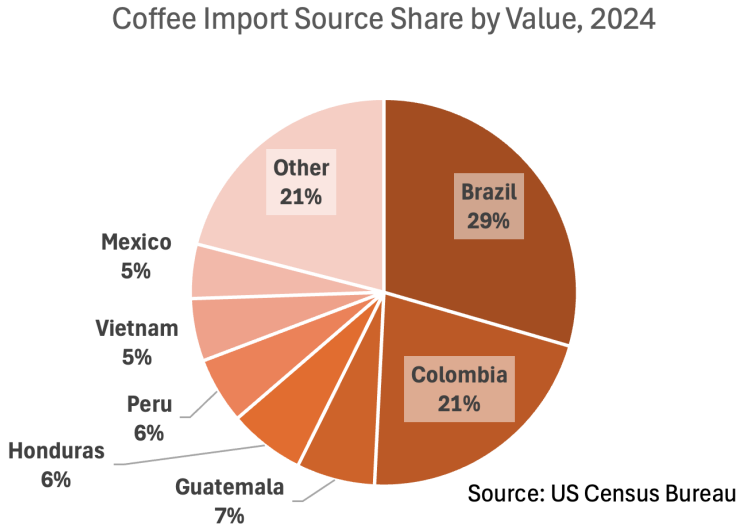
Case study: tomato tariffs

- NAFTA
- Anti-dumping investigation and TSA
- Termination of TSA July 2025
  - 17% tariff
- Tomato prices expected to increase
  - 8-12%, winter months



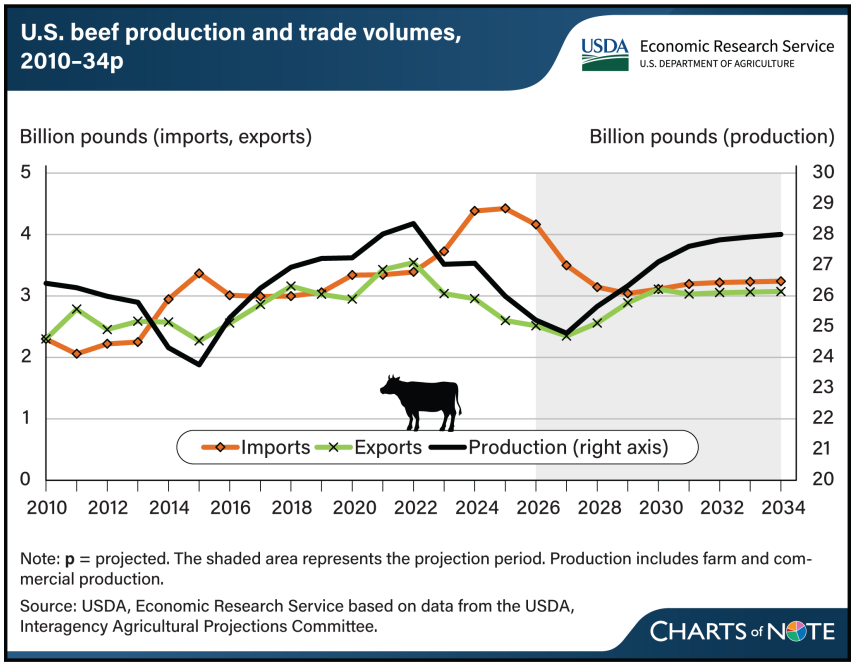
Case study: coffee tariffs

- We import most* coffee consumed
- Coffee prices near record highs



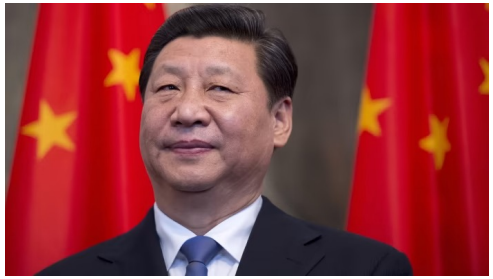
Case study: beef tariffs

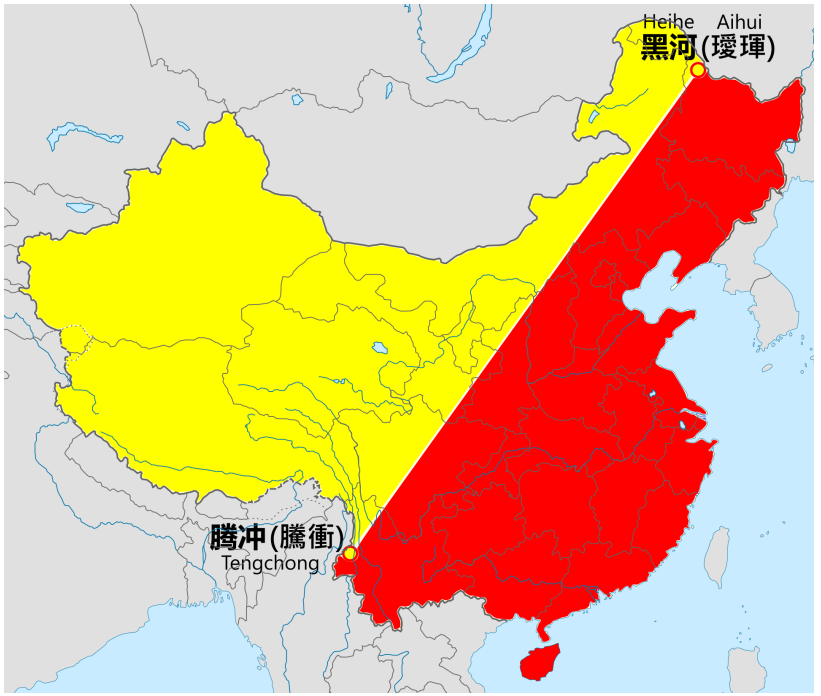
- Global Production (US 20%, BZ 19%)
- U.S. Drought → High Beef Prices
- Lean trimming imports
  - Brazil, Australia, Canada
  - Ground beef and hamburger blends
- Tariffs
  - 50% on Brazil
  - 10% on Australia



The Chinese market

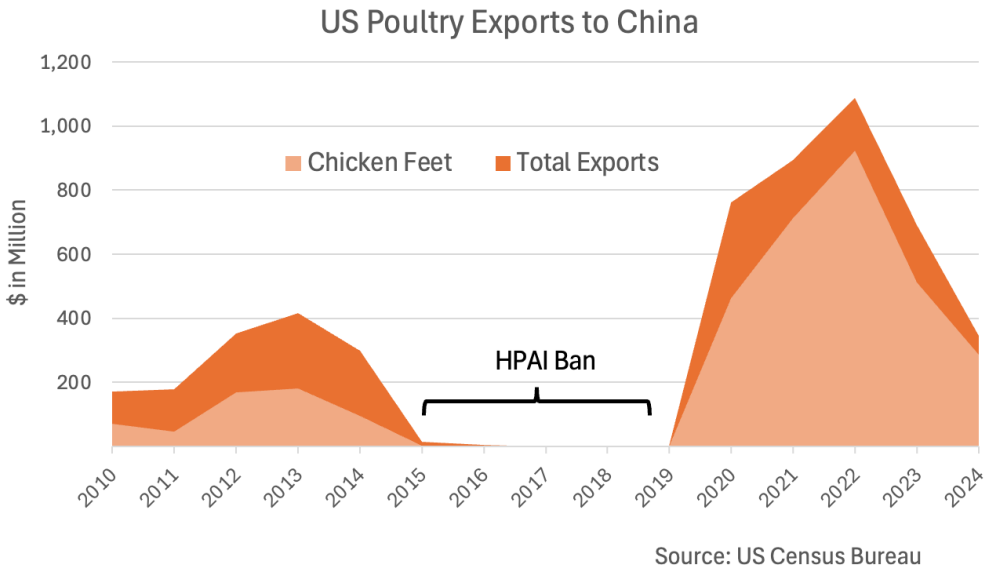
- 1.4 billion consumers
- 94% live in red area
- Ag production in red area





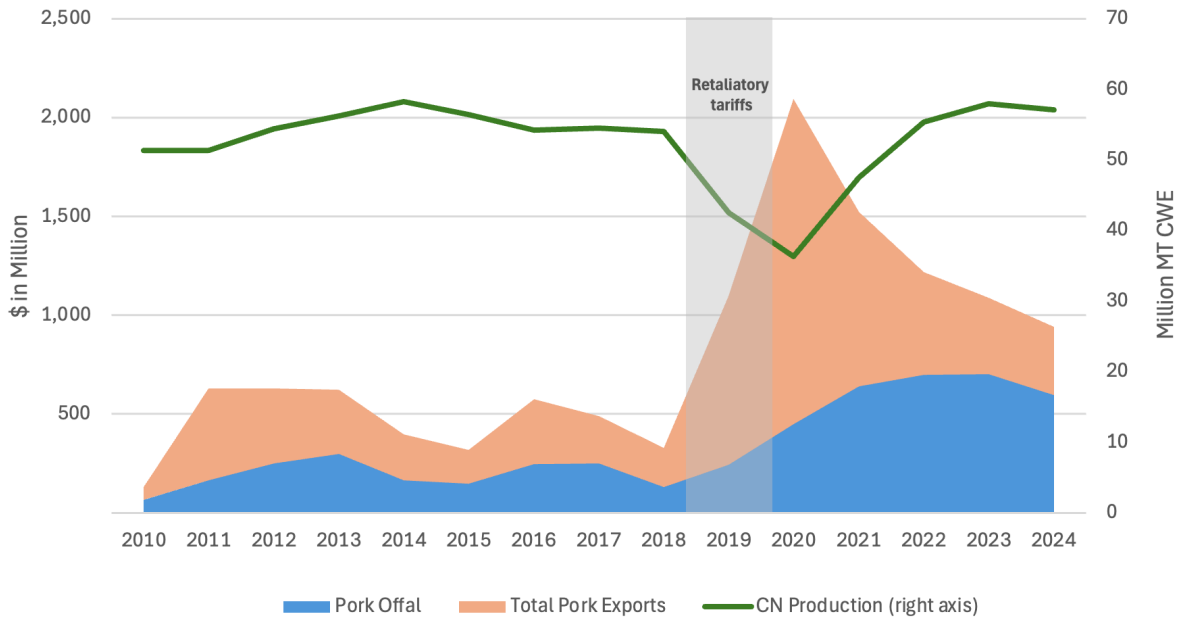
Complementary markets

- Feet 82% of export value
- Profit opportunity
- HPAI challenges



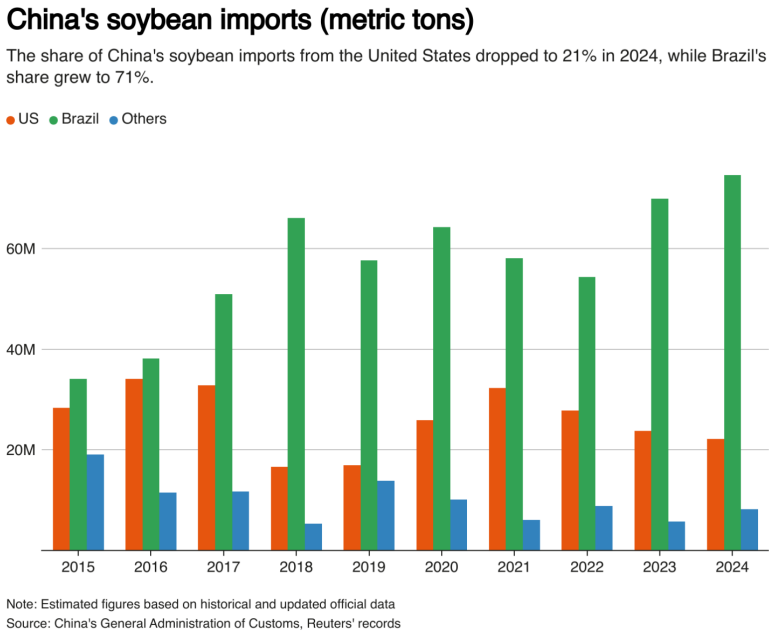
Source: US Census Bureau

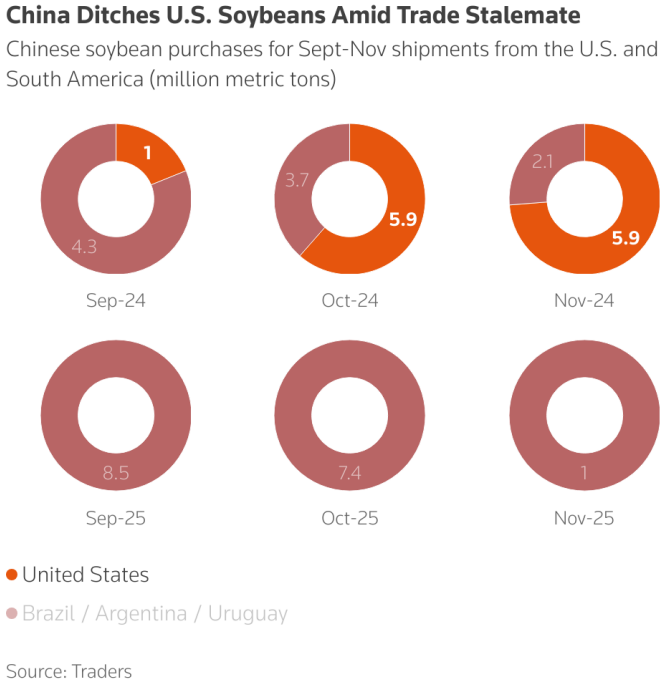
China pork production and U.S. exports



Source: USDA, FAS

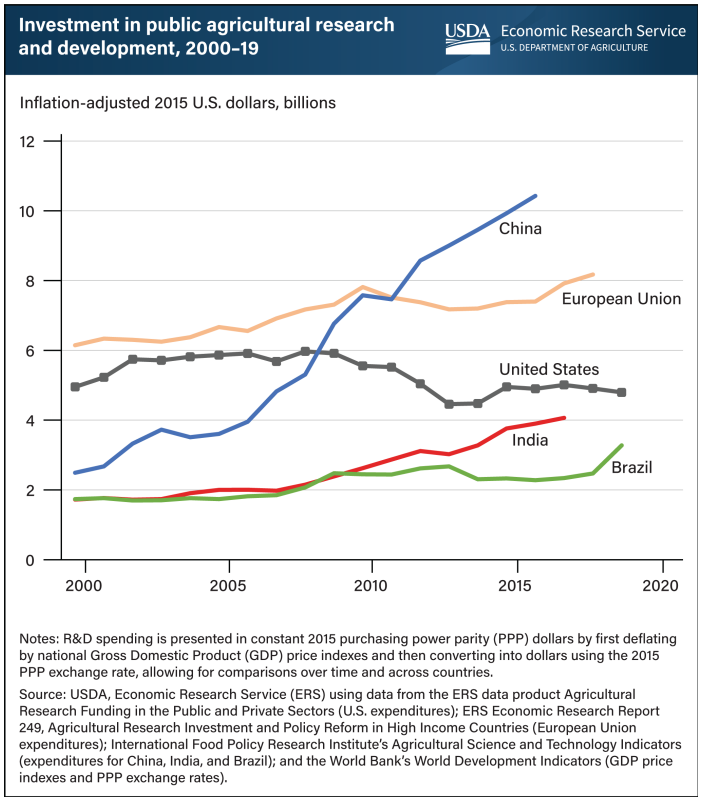
Soybeans…



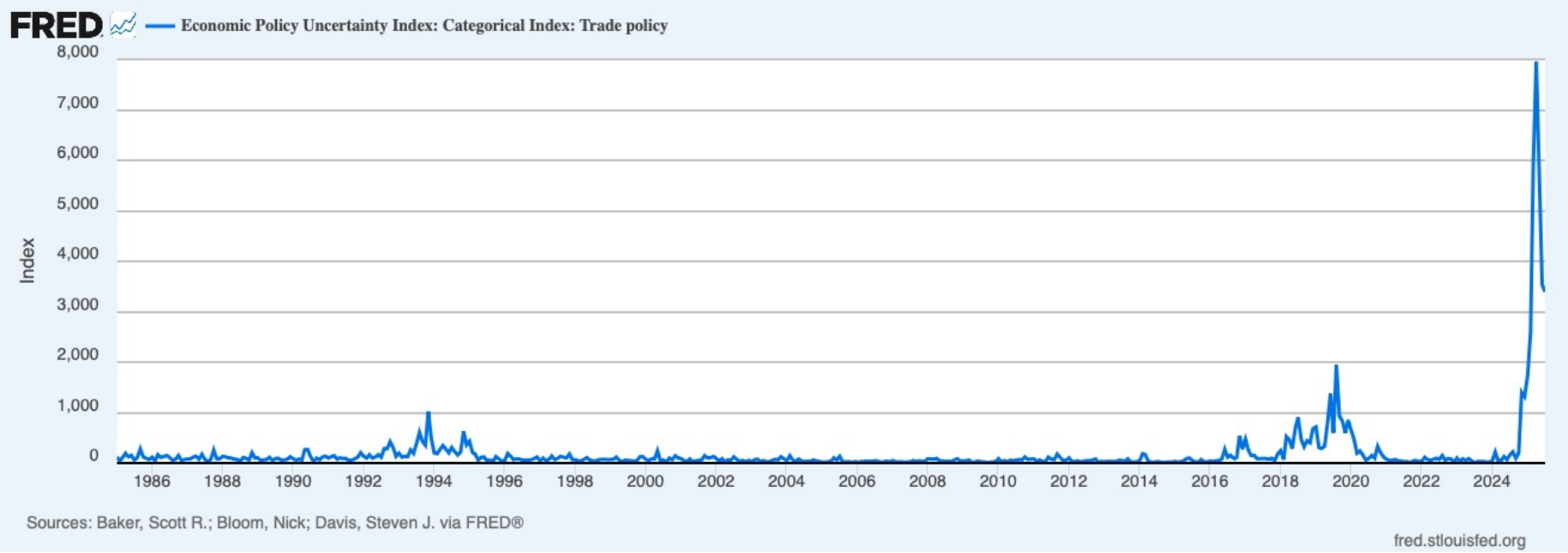


Less reliance on U.S. agriculture

- Tremendous investment in public ag R&D
- Pork less reliant on soy and corn
- Turning to Australia for beef
- Investments in Brazil and S. America
- China likes stability!



Trade policy uncertainty



Thank you!

- dlortega@msu.edu
- David L. Ortega
- **Questions or Comments**

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SOCIETAL IMPACT ARTICLE OPEN ACCESS

Shock and Awe: A Theoretical Framework and Data Sources for Studying the Impact of 2025 Tariffs on Global Supply Chains

Jason W. Miller[1] | Yao "Henry" Jin[2] | David L. Ortega[3]

[1]Eli Broad College of Business, Michigan State University, East Lansing, Michigan, USA | [2]Department of Management, Richard T. Farmer School of Business, Miami University, Oxford, Ohio, USA | [3]College of Agriculture & Natural Resources, Michigan State University, East Lansing, Michigan, USA

Correspondence: Jason W. Miller (mill2831@msu.edu)

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ABSTRACT

In the first few months of 2025, the US government embarked on an unprecedented effort to upend decades of trade liberalization by undertaking the largest series of tariff increases since 1930. Subsequently, many of these tariffs were reduced by the executive branch or faced legal challenges, generating a tremendous degree of tariff uncertainty. These tariff hikes and the accompanying tariff uncertainty represent the greatest exogenous shock to global supply chains since the onset of the COVID-19 pandemic. The profound impact of these developments makes it imperative for supply chain management (SCM) researchers to examine their wide-ranging consequences. In this societal impact article, the authors develop a theoretical framework to organize and guide SCM research on tariff impacts. This framework proposes that importer and exporter actions, both legal and illegal, are affected by firms experiencing heterogeneous *adjustment costs*, *transaction costs*, *opportunity costs for responding early*, and *opportunity costs for responding late* in response to tariffs. Various research directions are outlined, relevant data sources are discussed, and initial model-free evidence is provided.