

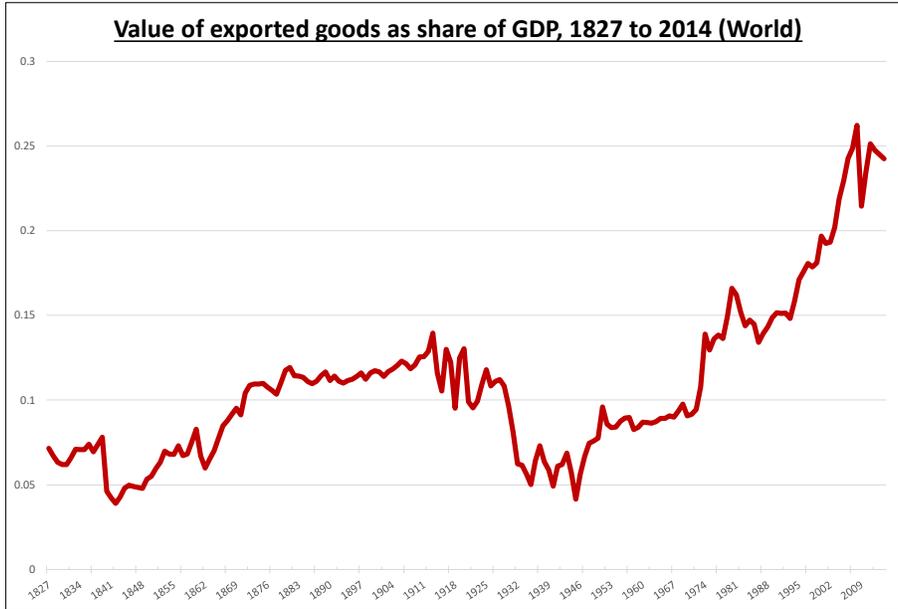


Trade and Globalization

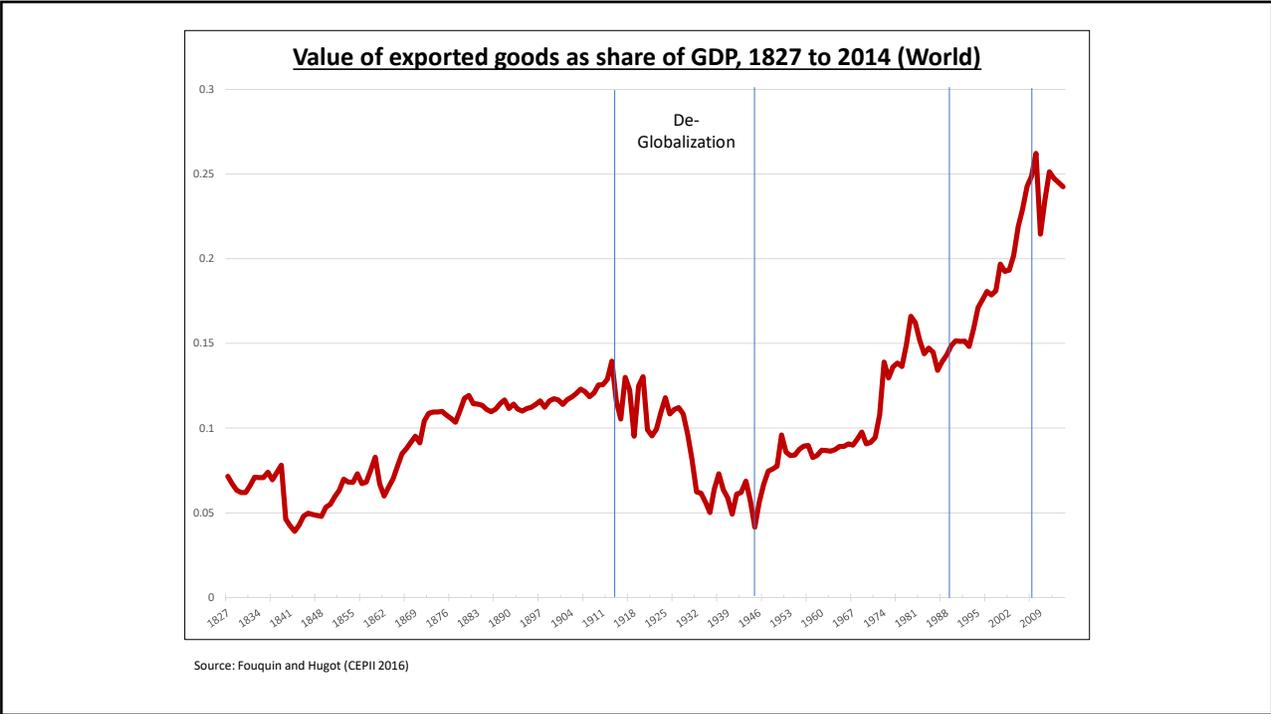
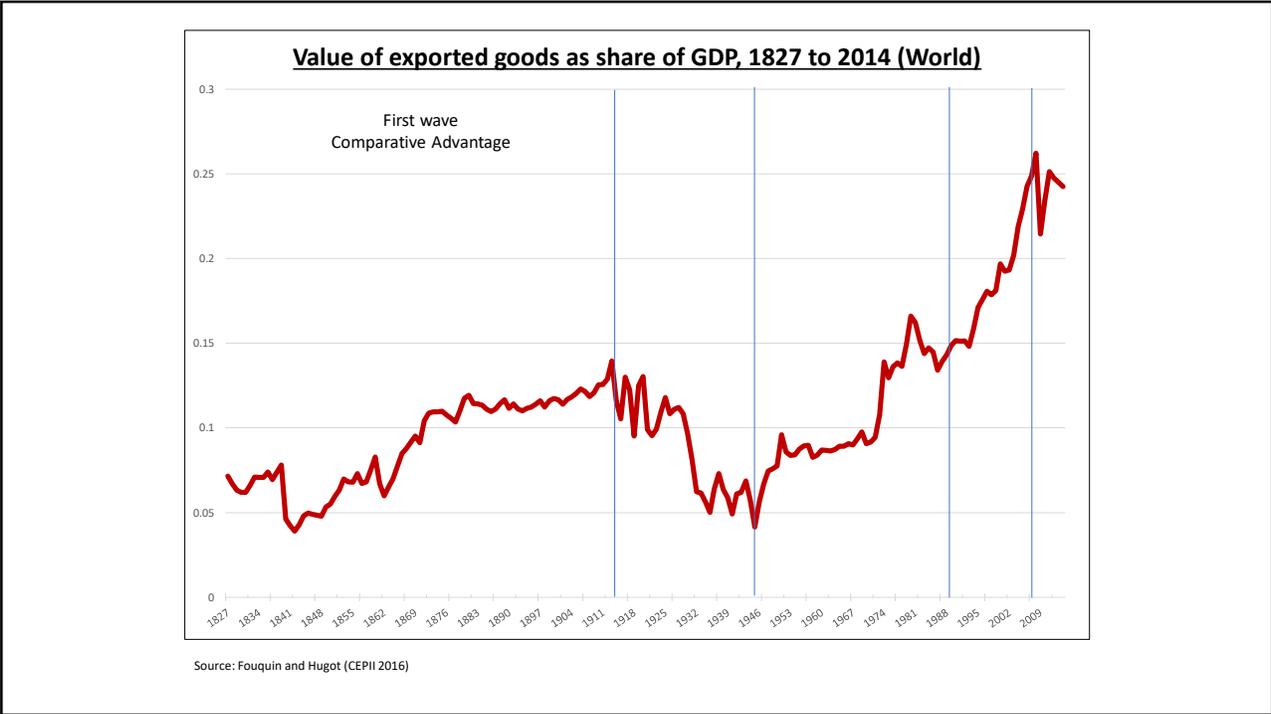
Mina Kim, Ph.D.
American University OLLI
March 9, 2026



Value of exported goods as share of GDP, 1827 to 2014 (World)



Source: Fouquin and Hugot (CEPII 2016)



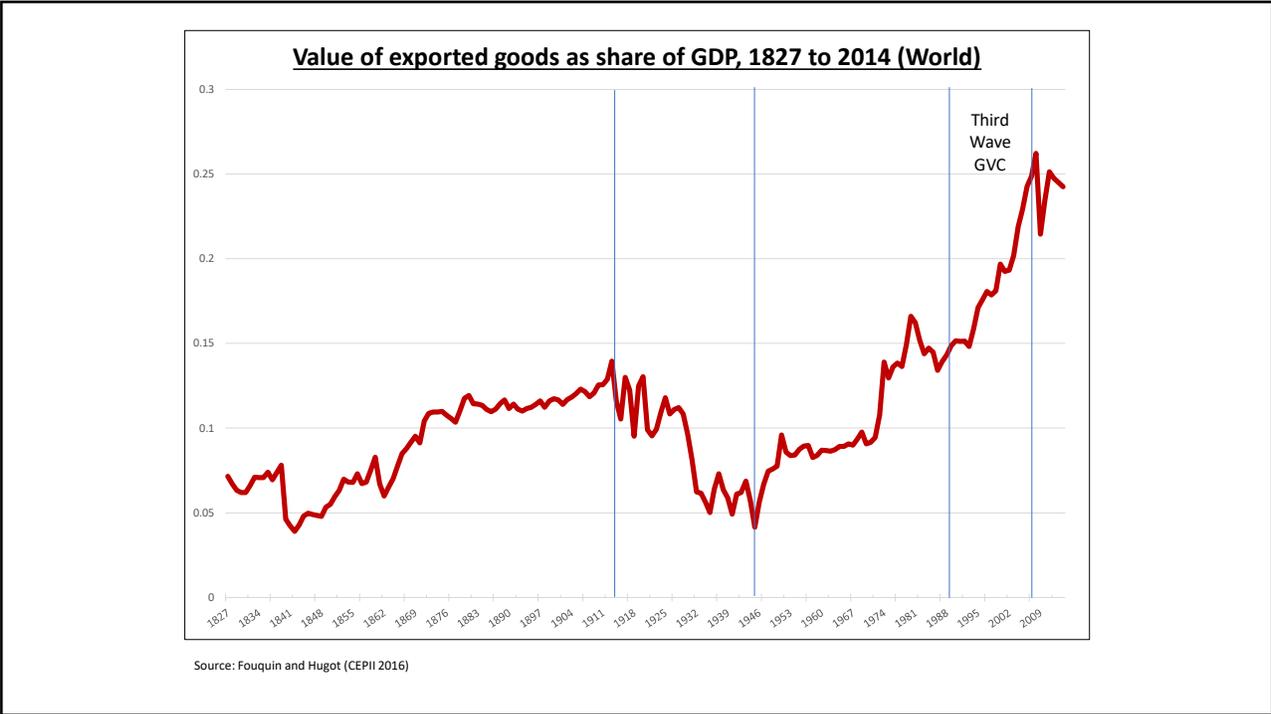
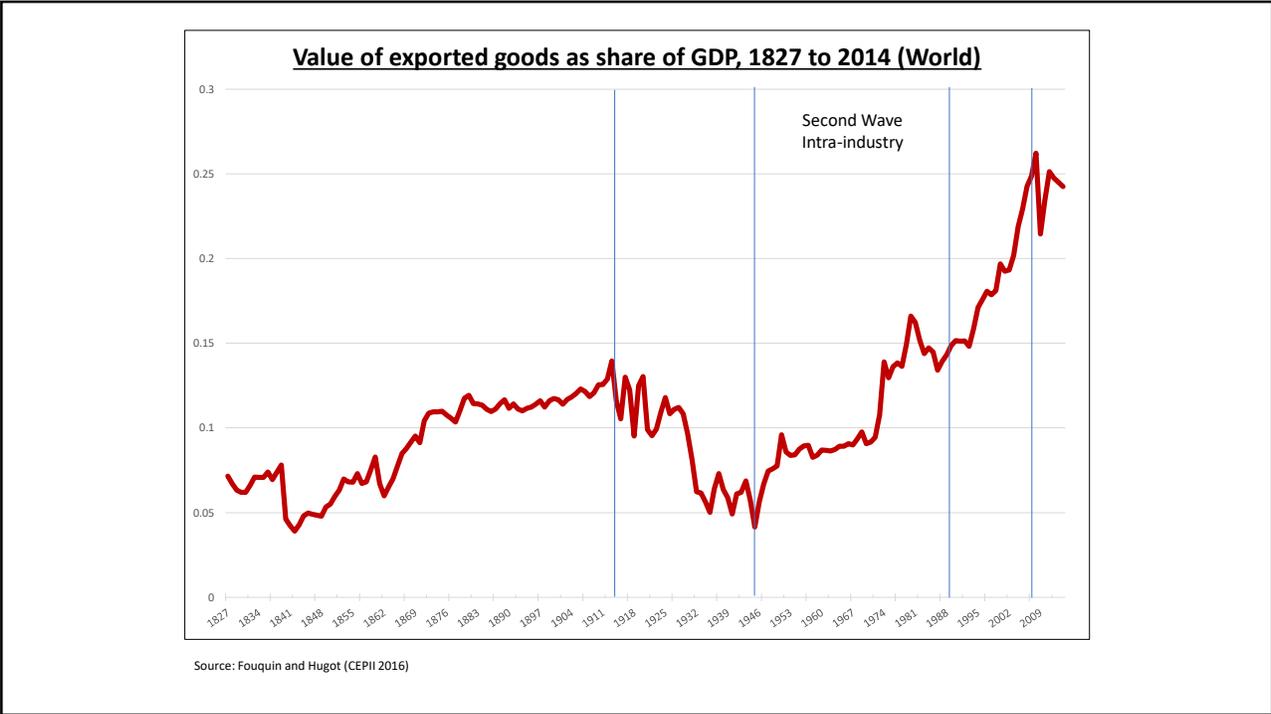
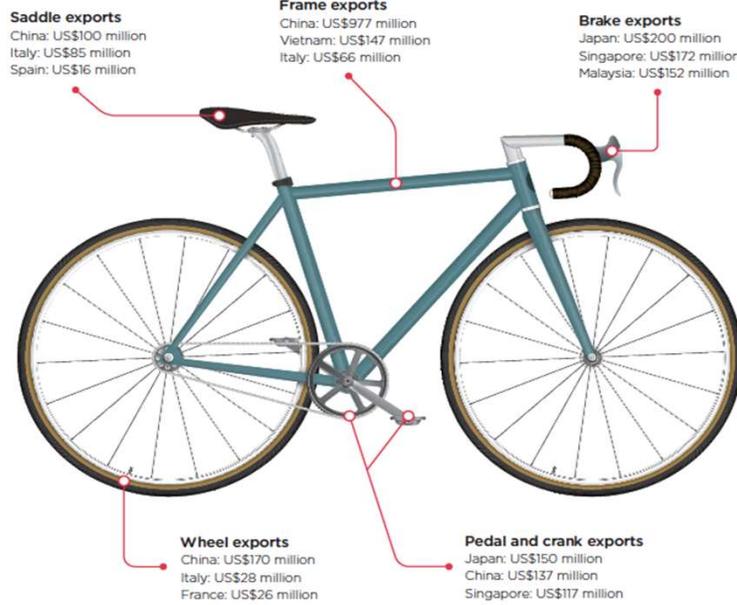
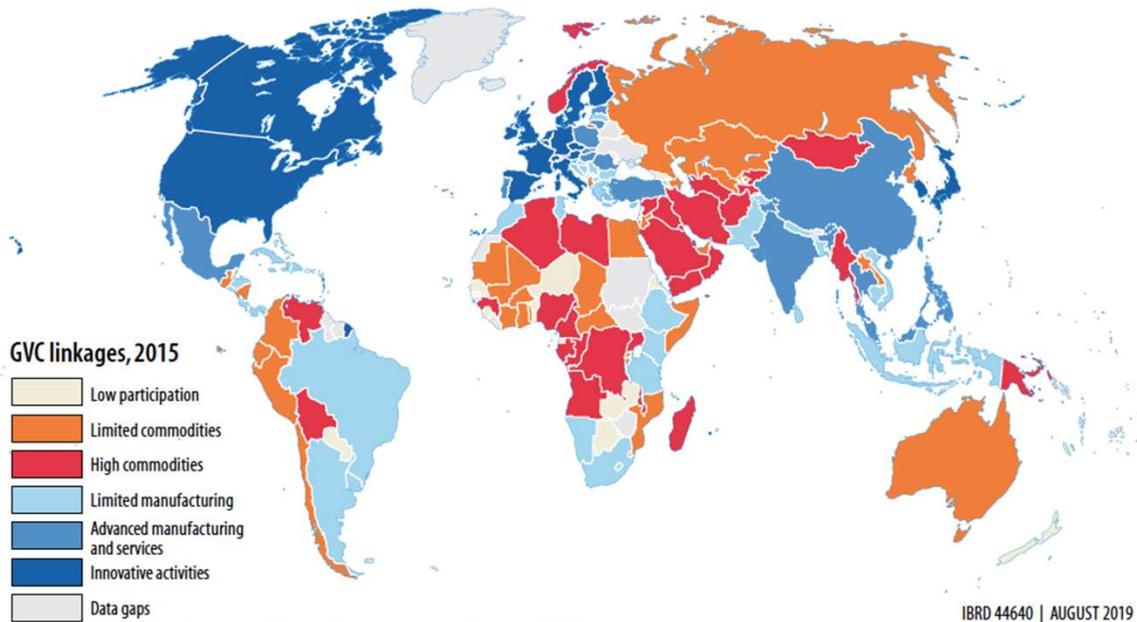


Figure 1.1 Where do bicycles come from?



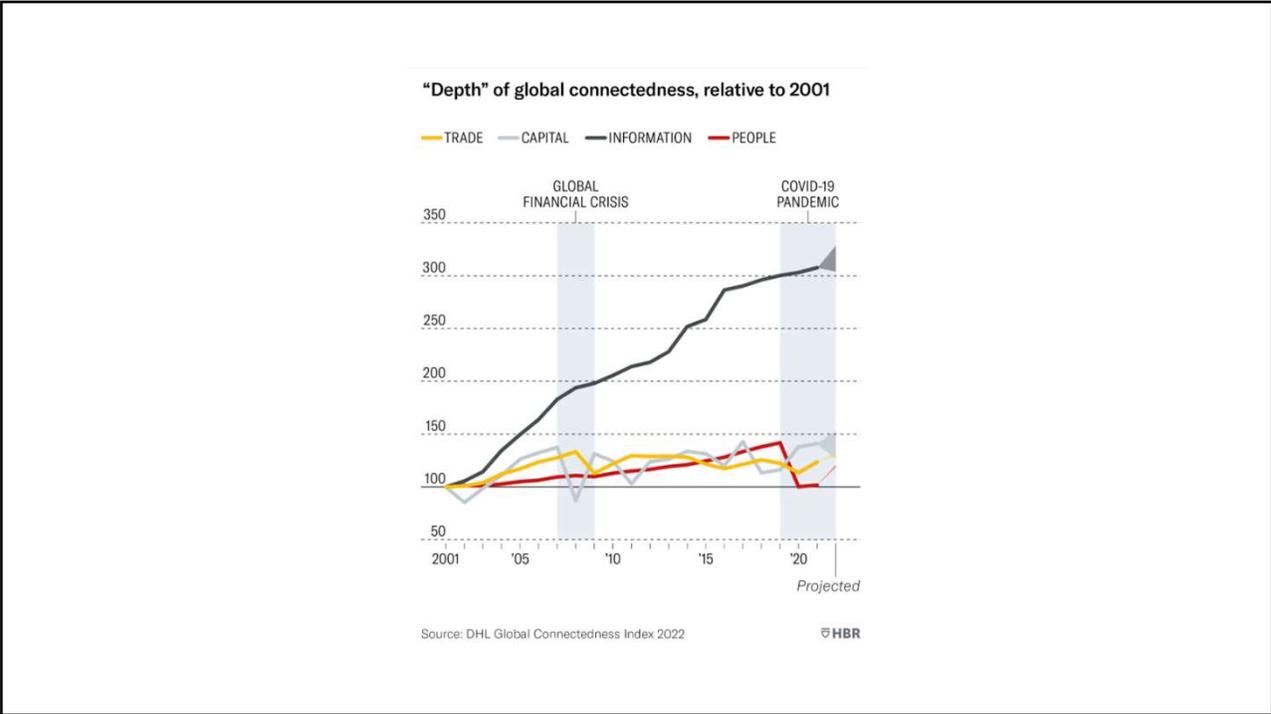
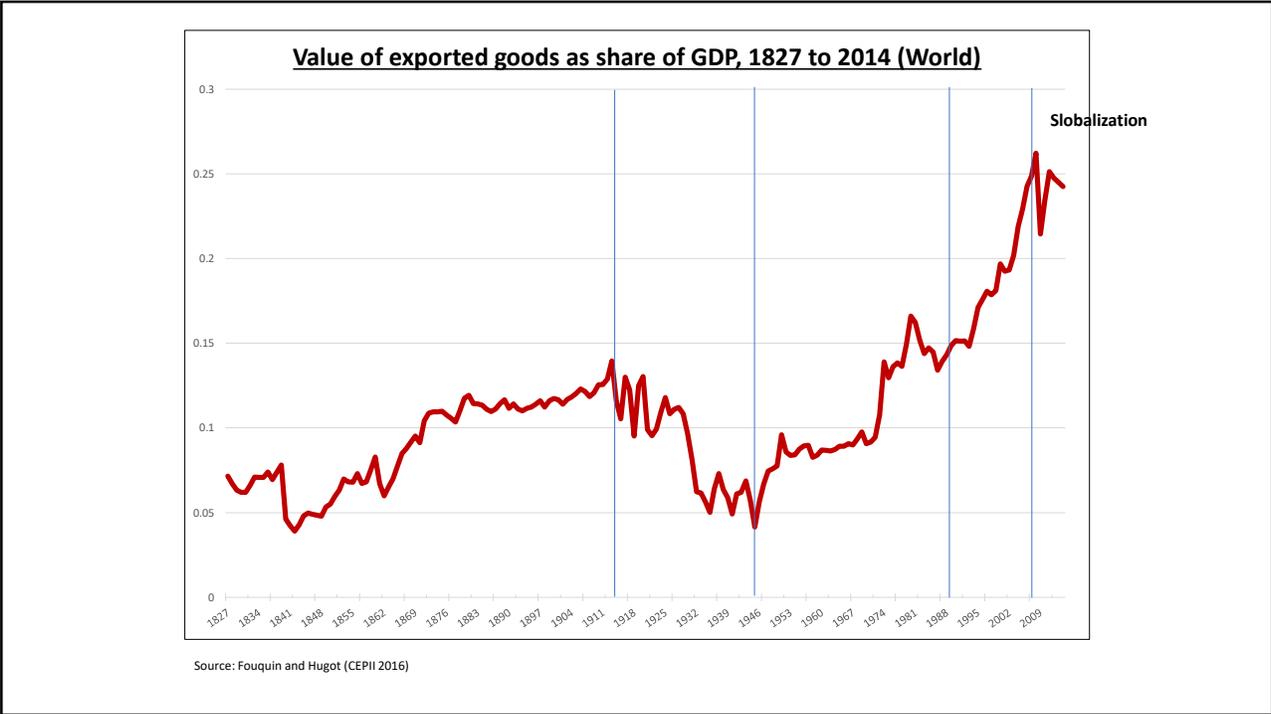
Source: World Development Report 2020

Map 1.1 All countries participate in GVCs—but not in the same way



Source: World Development Report 2020

IBRD 44640 | AUGUST 2019





Why Do Countries Trade?

- Competition
- Varieties
- Efficiency

Why Might Efficiency Differ Across Countries?

- Labor
 - Skilled or unskilled
- Technology
 - Some countries have firms that produce some goods well
 - Other countries have firms that produce other goods well
- Environment
 - Cold/Warm Wet/Dry Sunny/Cloudy
- Land
 - Rocky, soil, fertile, barren
 - Tundra, desert, grasslands, forest

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Comparative Advantage and Specialization

- Comparative advantage
 - Scarce resources: can't produce unlimited amounts of goods
 - Export goods where production advantage largest (or disadvantage weakest)
- Non-econ example: Babe Ruth
 - Top pitcher during 1916-1918. But best hitter of all time!
 - Scarce resources: training time
 - Post 1918, Babe Ruth specialized as hitter
- Econ example: US-UK trade in 1951
 - For same output, US used less resources than UK in each of 26 manuf sectors!
 - But, US net exporter to UK only for sectors where it's advantage largest
 - UK net exporter to US for goods where it's disadvantage weakest

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Benefits of Specialization

- For goods where US production advantage weakest...
- US can consume these goods by either
 1. Importing them from UK
 2. Producing them *and* reducing production of goods exported to UK
- Key point
 - US can consume more of these goods by importing them from UK
- Analogous story true for UK
 - Trade increases size of economic pie for *both* countries

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Trade Contributes to Growth

- **EFFICIENCY:**
 - Allocates production across countries efficiently so that countries can specialize in what they are best at producing.
- **Varieties**
 - More choice for consumers.
 - Better inputs for our production.
- **Competition**
 - Brings in cheaper goods.
 - Makes consumers better off.
- **Economies of Scale**
 - Trade makes some industries bigger, more cost efficient. Lowers prices.



What Does the Data Say? Trade Lowers Prices for Consumers

- Effect of import surge from China: 2000-2007
 - Prices would be about 10% higher without this import surge.
 - Benefits for U.S. consumers of \$100,000 per lost manufacturing job.
- Do rich or poor benefit more from lower import prices?
 - Evidence is mixed.

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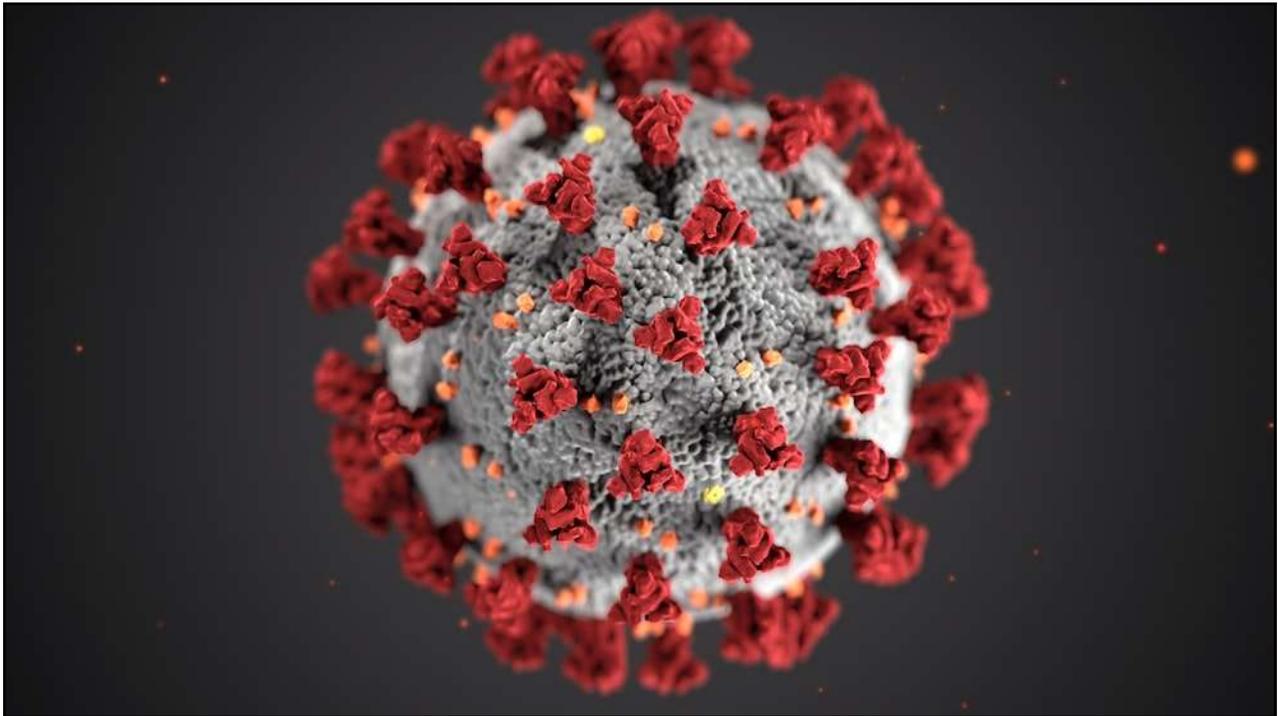
Why has the
public been
turning
against
trade?



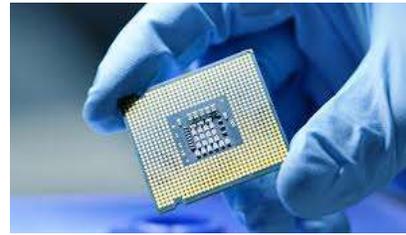
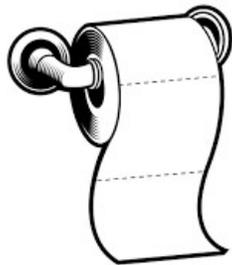
Intuition on Distributional Impacts

- Jobs
 - U.S. imports more of some goods
 - Reduces jobs on those industries
 - U.S. exports more of other goods
 - Creates jobs in those industries
 - ***Are there different kinds of workers in these different industries?***
 - ***Creates adjustment costs***
- Prices
 - LOWERS the price on imported products
 - RAISES the price on exported products
 - ***Who buys which products?***

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Covid Shortages

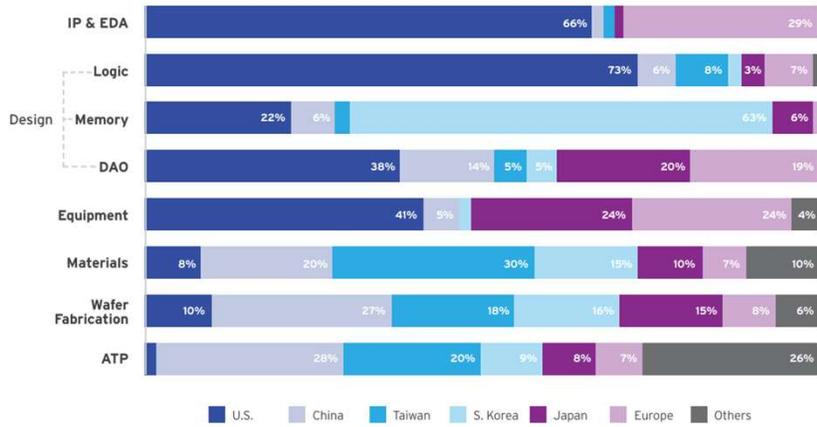


Supply Chain Trends and Consequences

- The trend towards reducing costs: has resulted in the globalization of supply chains, making supply chains more vulnerable and complex.
- The trend towards outsourcing non-core business activities: has resulted in loss of control when it is most needed).
- The trend towards just-in-time and lean practices: has resulted in efficiency rather than effectiveness.
- The trend towards the consolidation of suppliers: has resulted in the increased potential for supplier failure.

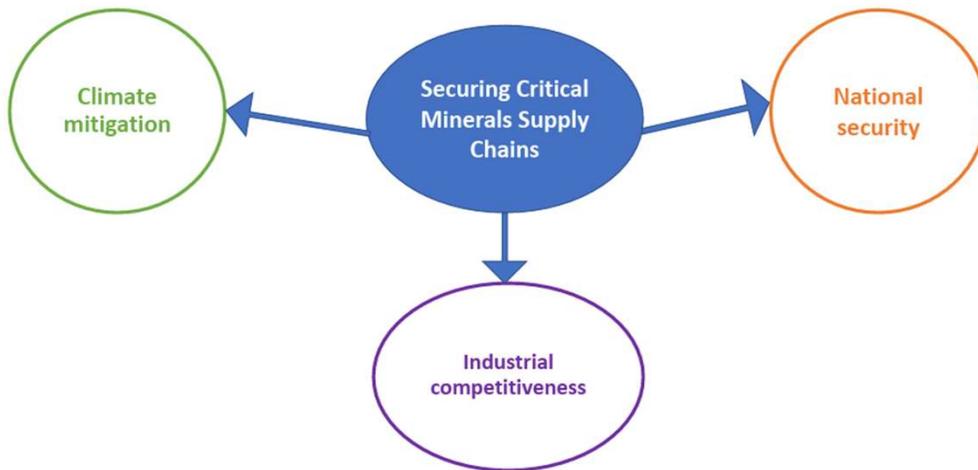


SEMICONDUCTOR INDUSTRY VALUE ADDED BY ACTIVITY AND REGION 2024 (%)⁴



Source: IPnest; Wolfe Research; Gartner; SEMI; BCG analysis

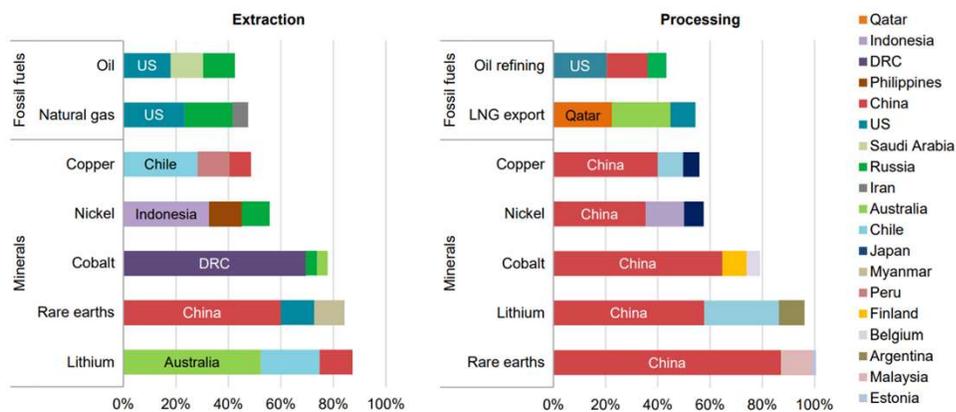
The security of critical minerals supply chains is a strategic issue.



Critical Minerals

Mineral commodity	Potential GDP loss (\$M)	Example usages
Rhodium	64,340	Automotive catalytic converters; chemical catalysts
Niobium	10,441	High-strength steels; superconductors; jet engines
Samarium	4,498	Permanent magnets; nuclear reactor control rods
Potash	2,541	Fertilizer; chemicals; water treatment
Lutetium	2,059	Petroleum cracking catalysts; lasers
Terbium	1,809	Green phosphors; high-performance magnets
Dysprosium	1,624	High-temperature magnets (EV motors, wind turbines)
Aluminum	1,537	Transportation; packaging; construction
Gallium	1,418	Semiconductors; LEDs; solar cells
Ruthenium	1,249	Electronics coatings; chip interconnects; catalysts

Reasons for decoupling from China: production of climate-critical minerals is more concentrated than oil and gas



Source: [IEA \(2022\)](#)

PRC Measures to Develop Midstream and Downstream

- The 7th National Five-Year Plan for Rare Earth Industry (1986–1990)
- Investment policies
- State-sponsored R&D investment
- Export tax & value-added tax
- Export quotas (1999-2014) & production quotas (2006-present)
- “Made in China 2025” industrial initiative (2015)
- China’s production of rare-earth end-use products grew by about 70%, 2005-2015.
- Chinese rare earth consumption growth: 7.5% p.a. (2004-2014)
- By 2015, domestic consumption accounted for over 80 percent of the domestic production of rare earths.
- National Mineral Resource Plan for 2016–2020
- Export control law (Oct 2020)
- Legislation to “reinforce the protection of its rare earth resources” and “strengthen full industrial chain regulation” (Jan. 2021)

The Consequences of Chinese Domination of the Minerals Market

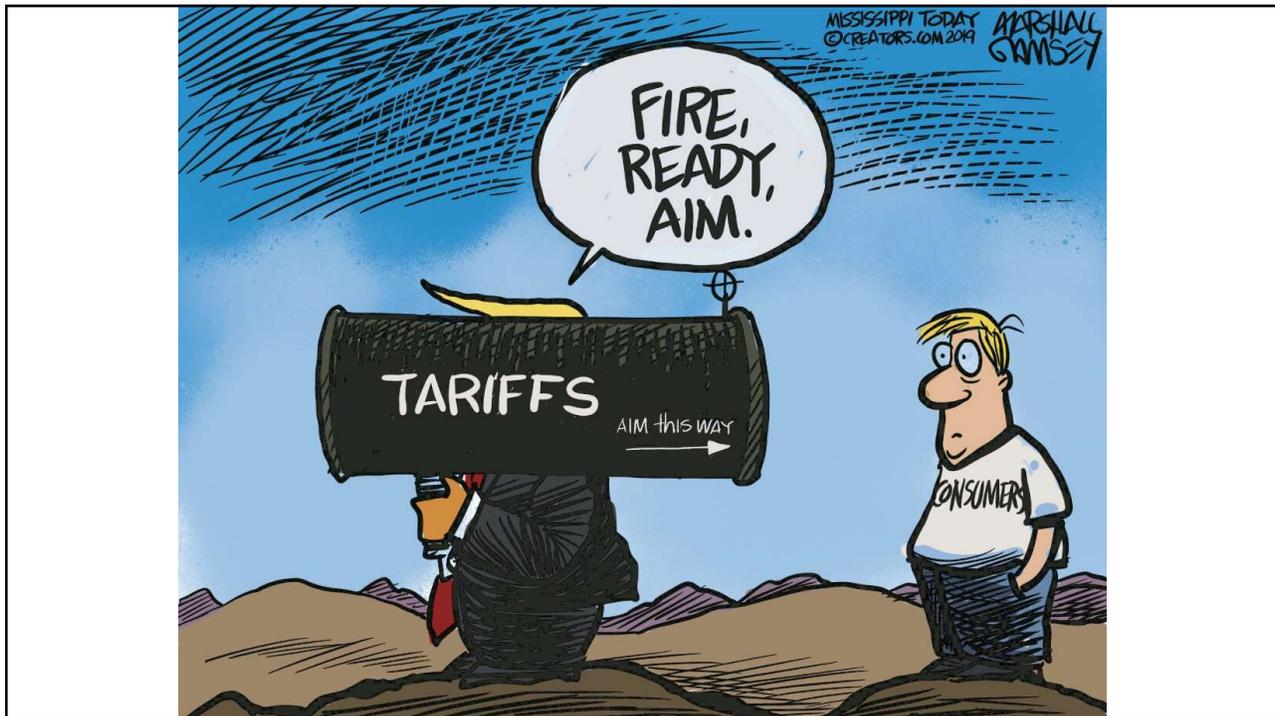
- Sept 2020 – China restricted REE exports to Japan
- August 2023 – Export bans on gallium and germanium products.
- Oct 2025 - Foreign firms required to obtain Chinese government approval to export magnets that contain even trace amounts of Chinese-origin rare earth materials
- Jan 2026 – China targeted Japan with export restrictions on dual-use technologies

Export Controls

Export Controls Affect an Increasing Number of U.S. Firms



Sources: Federal Register; Code of Federal Regulations; FactSet Revere; Compustat.
Notes: The chart shows the number of affected U.S. suppliers over time as the Bureau of Industry and Security includes new foreign customers on the list of targeted foreign firms. The histogram shows the number of new affected U.S. suppliers in a specific year. The red line shows the cumulative number of affected U.S. suppliers over time.



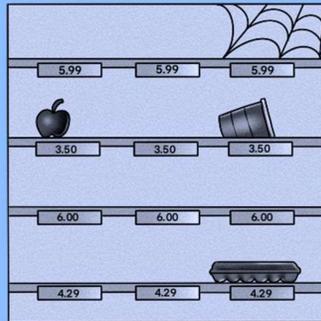
Legal Authority to support tariffs imposed by the President

	Reason for imposing tariffs	Federal agency investigation required?	Limit on duration of action	Limit on tariff rate
Section 232	Threat to national security	Yes, by Commerce Department	None	None
Section 201	Injury to domestic industry	Yes, by International Trade Commission	Four years. May be extended to a maximum of eight years.	50% increase. Phasedown required after one year.
Section 301	Discrimination against US businesses or violation of US rights under trade agreements	Yes, by US Trade Representative	Four years. May be extended with no maximum limit.	None
Section 122	International payments problem	No	150 days. Can be extended with Congressional approval.	15%
Section 338	Discrimination against US commerce	No	None	50%

Source: Congressional Research Service, Bloomberg

What is industrial policy?





Market Failure

['mār-kət 'fāl-yər]

A situation defined by an inefficient distribution of goods and services in the free market.

 Investopedia

Non-excludability

Once provided you can't stop anyone benefitting from the good.

Non-rivalry

If somebody benefits from good, it doesn't reduce the amount available for others

Public Good

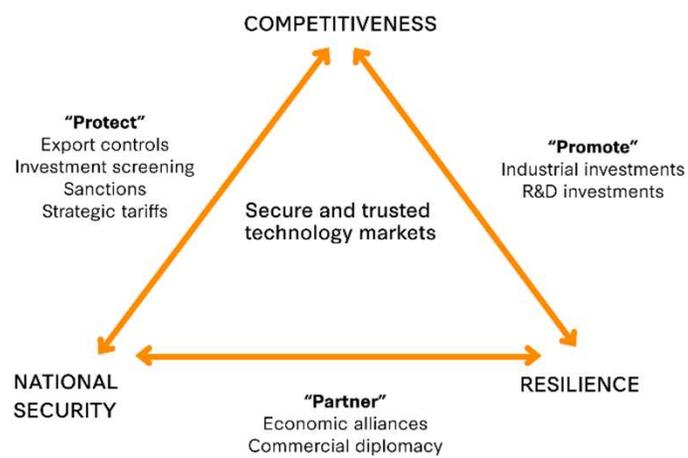
Free Rider Problem - Individuals have an incentive to use good without contributing towards cost.

www.economicshelp.org

Externalities



An Emerging Economic Security Trilemma





Thank you!

Any Questions?

www.NEEDecon.org

Mina Kim

minakim@mkecon.com

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