

The Remains of the Trade: The U.S.–China Trade War and its Aftermath

Pol Antràs

Harvard, NBER, & CEPR

Adrian Kulesza

Harvard University

Andrea F. Presbitero

IMF & CEPR

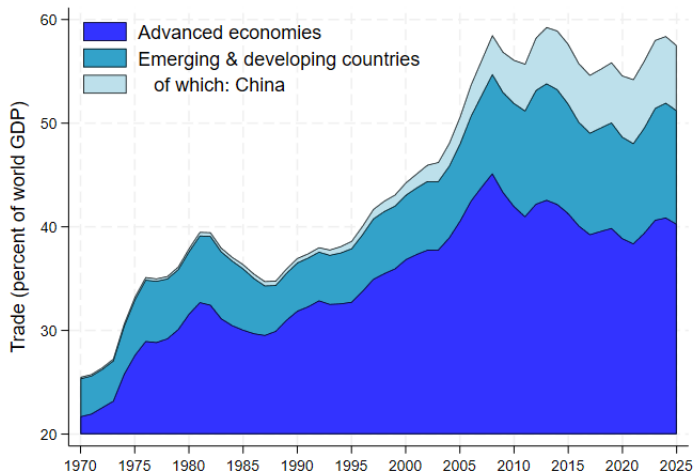
China Shock 2.0: Causes, Consequences, and Policy Responses
Banca d'Italia, September 28, 2026

Road Map

- The U.S.–China Trade War and the Great Reallocation
 - ▶ Overview of recent trends
- Caught in the Middle: Third-Country Spillovers
 - ▶ Diagnostics: measuring exposure
 - ▶ Four margins: export competition, import competition, consumer gains, and sourcing gains
- Opening the Black Box of the Indices
 - ▶ The product-level shock and Chinese export reallocation
 - ▶ Decomposing the country-level indices

The U.S.–China Trade War and the Great Reallocation

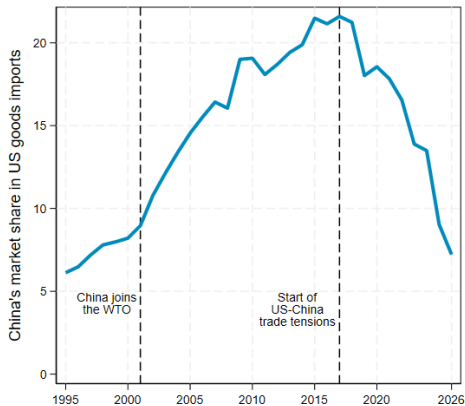
The world is not (yet) deglobalizing, but links are changing



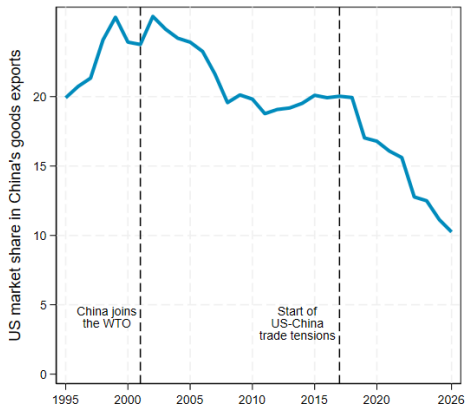
Sources: World Bank's World Development Indicators.

A salient example of reshuffling: The U.S.–China decoupling

China's market share in U.S. imports

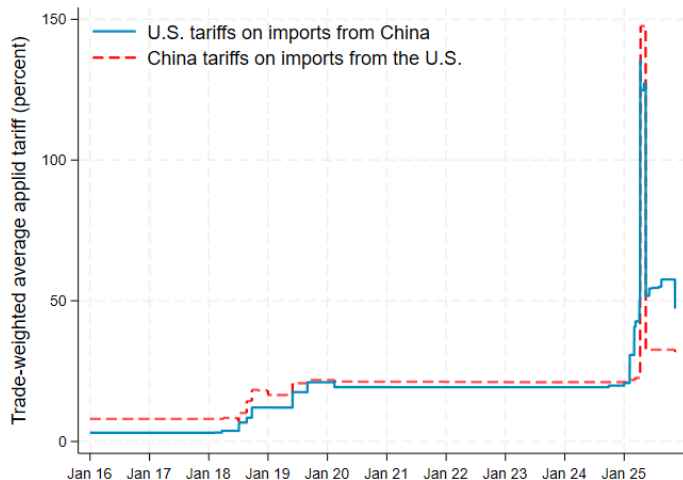


U.S. market share in China's exports



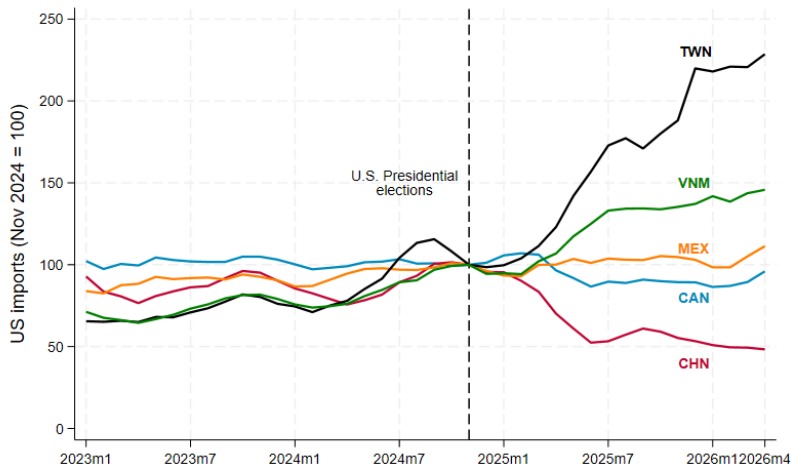
Notes: Data for 2026 refer to January and February. **Sources:** US Census, CEPII-BACI dataset (Gaulier & Zignago 2010), and Trade Data Monitor.

Key for reshuffling: Ongoing U.S.–China tensions



Sources: Bown (2025).

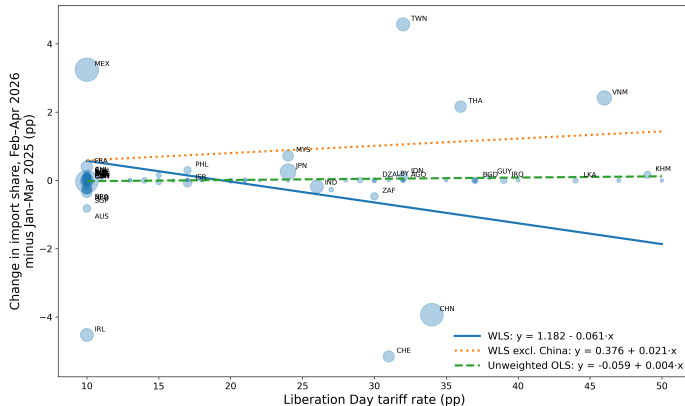
Trump reelection was a pivotal point



Notes: Series show U.S. goods imports from each partner, indexed to Nov. 2024 = 100. Values are a 3-month backward moving average. **Source:** U.S. Census Bureau (<https://www.census.gov/foreign-trade/balance/index.html>).

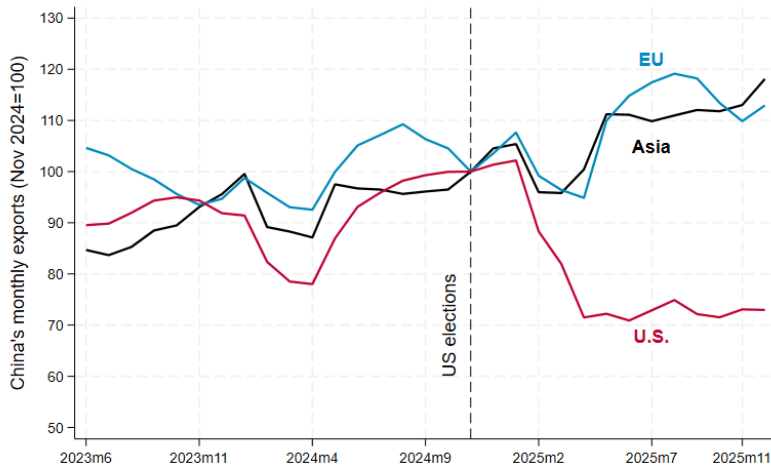
But misleading to think of this as standard trade diversion

- April 2025 tariffs led to widespread protectionism
- Policy environment became more uncertain and more *transactional*
- April tariffs have limited predictive power for relative U.S. import growth



Notes: Update chart from Alfaro and Chor (2025).

China has redirected its exports



Notes: Exports are 3-month backward-looking moving averages. The Asia aggregate includes Bangladesh, Cambodia, Hong Kong SAR, India, Indonesia, Malaysia, Pakistan, the Philippines, Singapore, Sri Lanka, Taiwan Province of China, Thailand, and Vietnam. EU = European Union. **Sources:** Trade Data Monitor.

Caught in the Middle: Third-Country Spillovers

General considerations

- How are third markets affected by U.S.–China trade tensions?
- **Trade diversion** effects are potentially important, but there is still substantial uncertainty over the tariffs third countries will *eventually* face
- The sharp reduction of Chinese exports to the U.S. appears **persistent**, and has been mirrored by sizable increases in Chinese exports elsewhere
- This has generated an intensification of **competitive pressures in third markets**
- This is **our focus**

Decompose exposure into four margins

Negative effects of Chinese competition via:

- ① **Export Competition**: Chinese exporters redirect shipments and displace other sellers in shared destination markets
- ② **Import Competition**: redirected Chinese goods raise import penetration and competitive pressure in importing markets

Positive effects of Chinese competition via:

- ③ **Consumer Gains**: redirected Chinese goods reduce prices for consumers in importing countries
- ④ **Sourcing Gains**: redirected Chinese intermediate goods reduce input costs for producers in importing markets

Data and sample

- Bilateral trade data (in 2023) at the product level from CEPII-BACI
- Elasticities: Soderbery (2018); tariffs: Rodriguez-Clare et al. (2026); binary input-output connections: Fetzner et al. (2026); upstreamness: Antras et al. (2012)
- Our measures are available for up to 224 economies, based on trade data for 5,380 HS6 products
- We exclude countries with a population less than 200,000 (plus Hong Kong & Macao)
- Since indices require product-country elasticities which may be unavailable, we drop countries where our indices represent less than 25 percent of the underlying trade flows
- This leaves us with 110 countries as baseline sample

All data and indicators are at: https://pantras-hash.github.io/remains_of_the_trade

One caveat and one generalization

Caveat:

- Our indices are first-round exposure measures for covered products, not a general-equilibrium welfare calculation

Generalization:

- The framework extends beyond the U.S.-China tariffs
- The same country-specific weights can be combined with price shocks from China or any other large exporter coming from industrial policy, productivity growth or weaker domestic demand

Diagnostic: Measuring Export Exposure

Measuring export exposure via export similarity

- Start with **Finger and Kreinin (1979) export similarity** between country o and country c (for China) in a given destination

$$ESI_{ijd} = 100 \times \sum_{p \in \mathcal{P}} \min \left\{ \frac{X_{idp}}{X_{id}}, \frac{X_{jdp}}{X_{jd}} \right\}.$$

- ESI_{ijd} is high when country o and China have similar export shares across products p in market d
- Expanding index to consider all destinations (other than US and China):

$$ESI_{ij} = 100 \times \sum_{d \in \mathcal{W}_-} \sum_{p \in \mathcal{P}} \min \left(\frac{X_{idp}}{X_i}, \frac{X_{jdp}}{X_j} \right)$$

where $\mathcal{W}_-$ is the set of all countries in the world ($\mathcal{W}$) excluding the U.S. and China

Does export similarity capture export competition? Some problems

The Finger and Kreinin (1979) index is an insightful measure of export similarity, but it is much less clear that it constitutes a good index of export competition pressures:

- *ESI* is **symmetric**: is China as exposed to Honduras as Honduras is exposed to China?
- *ESI* is also symmetric across products: does not take into account that Chinese competitive pressures might be felt more intensively in some products than others

An alternative theoretically-grounded approach

We develop an index of export competition based on an [Armington model](#):

- In each destination d , expenditure on product p is allocated across origin varieties according to [CES demand function](#)
- A China-specific U.S. policy shock reduces Chinese exports to the U.S. and, via an [upward sloping Chinese export supply function](#), leads to lower prices in all other destinations
- Model traces the [first-order implications](#) of this shock on the exports of a given country o to all destination markets d other than the U.S. and China

Export competition: Model-based building blocks

- Percentage response of country o 's exports is shaped by three easily observed objects:

1. Share of Chinese exports of good p going to the US (size of p shock)

$$\phi_p = \frac{Q_{cup}}{\sum_{d \in \mathcal{W} \setminus \{c\}} Q_{cdp}}$$

2. Share of China in d 's absorption of p (incidence of shock in d)

$$\chi_{cdp} = \frac{X_{cdp}}{\sum_{o \in \mathcal{W}} X_{odp}}$$

3. Share of o 's exports going to d (relevance of shock for o)

$$s_{odp} = \frac{X_{odp}}{X_{od}}$$

Export Competition Index (ECI_j)

Baseline export competition index

$$ECI_j = 100 \times \sum_{d \in \mathcal{W}_-} \sum_{p \in \mathcal{P}} (\sigma_{dp} - 1) \times \Phi_p \times \chi_{cpd} \times s_{jdp}$$

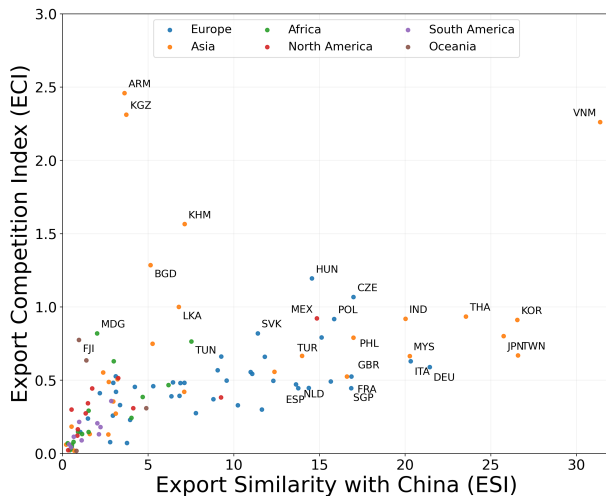
where

$$\Phi_p = -d \log p_{cp} = \phi_p \times \frac{\varepsilon_{cup}}{\bar{\varepsilon}_{cp} + \eta_{cp}} \Delta \log (1 + \tau_{cup})$$

- High value means China's redirected exports hit product–destination cells that matter for country j 's exports
- ε_{cup} is the US demand elasticity for Chinese product p , $\bar{\varepsilon}_{cp}$ is the average import-demand elasticity faced by China worldwide, and η_{cp} is the supply elasticity of Chinese exports
- We compute shares with 2023 data and use the latest tariff changes

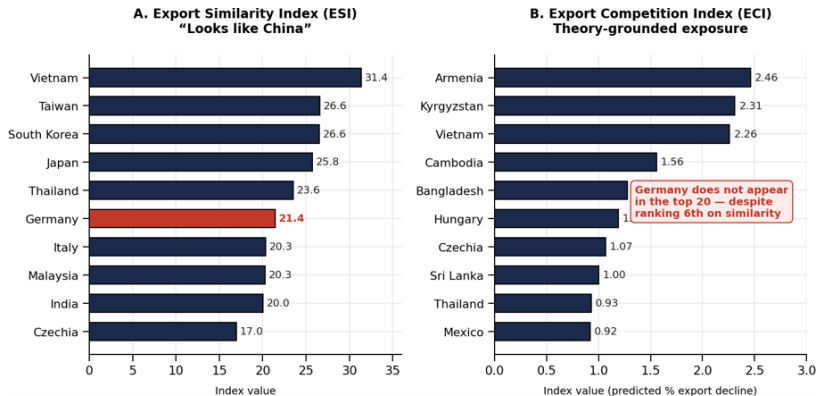
Export similarity versus export competition

- Positive correlation (0.493)
- The two measures rank many countries markedly differently
- Smaller specialized exporters typically seem more exposed under our model-based competition index



Export similarity versus export competition: the case of Germany

- Germany ranks 6th in the *ESI*—a textbook case of a country that “looks like” China
- Yet, once we derive exposure from the *ECI*, Germany does not even appear in the top 20



Diagnostics: Measuring Import Exposure

Import Competition Index (ICI_j)

- Percentage change of country d 's domestic sales in our model is given by:

Import competition index

$$ICI_j = 100 \times \sum_{p \in \mathcal{P}} (\sigma_{jp} - 1) \times \Phi_p \times \chi_{cjp} \times s_{jp}$$

where

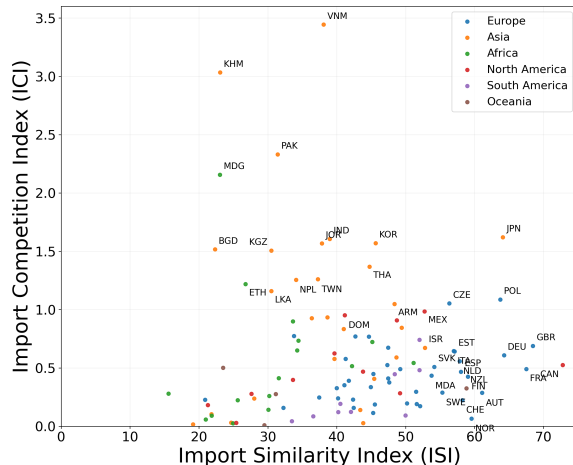
$$\Phi_p = -d \log p_{cp} = \phi_p \times \frac{\varepsilon_{cup}}{\bar{\varepsilon}_{cp} + \eta_p} \Delta \log (1 + \tau_{cup}) ;$$

$$s_{jp} = \frac{S_{jp}}{\sum_{p' \in \mathcal{P}} S_{jp'}} \simeq s_{jp}^X = \frac{\sum_{d \in \mathcal{W}} X_{jdp}}{\sum_{d \in \mathcal{W}} \sum_{p' \in \mathcal{P}} X_{jdp'}}$$

- ICI measures whether domestic producers in j are exposed to redirected Chinese goods
- s_{jp} hard to observe at the product-level but can be proxied with export shares (s_{jp}^X)

Import similarity vs. Import competition

- Import similarity is problematic: Is this an import competition shock? Or rather just cheaper imports for consumers?
- No correlation (-0.039)
- A country can import goods similar to U.S. imports from China without producing those goods domestically
- What matters is that domestic producers are concentrated in sectors where Chinese import pressure rises



Imports can be good: Consumer Gains Index (CGI_j)

Consumer/import-price exposure

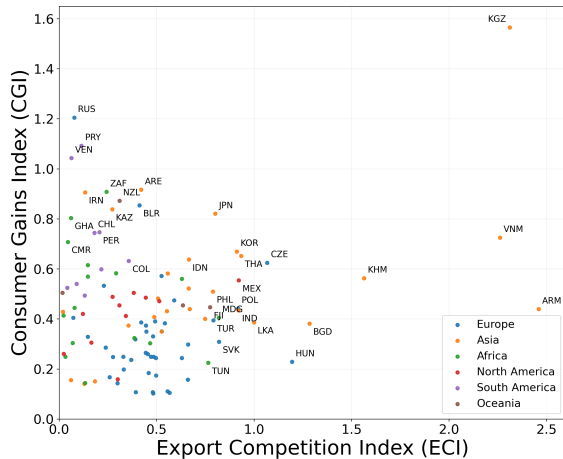
$$CGI_j = 100 \times \sum_{p \in \mathcal{P}} s_{jp}^M \times \chi_{cjp}^M \times \Phi_p$$

- Redirected Chinese exports can hurt domestic producers but lower prices for consumers
- χ_{cjp}^M is China's share in destination j 's imports of good p
- s_{jp}^M is the share of country j 's imports accounted for by product p

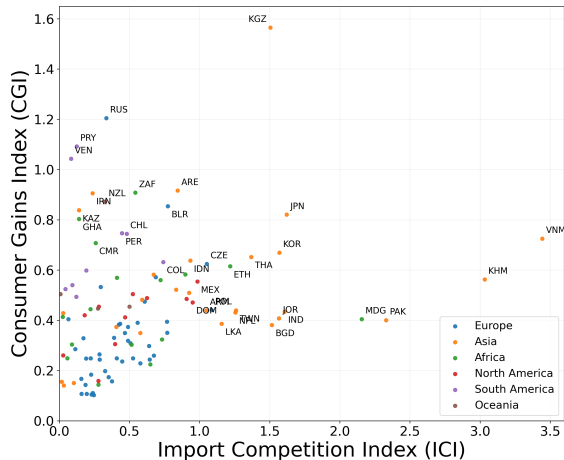
Two alternative versions of the CGI: one focusing on final goods only, and one on intermediates

Consumer gains differ from competition indices

CGI_j vs. ECI_j



CGI_j vs. ICI_j



Diagnostics: Sourcing Gains

Sourcing Gains Index (SGI_j)

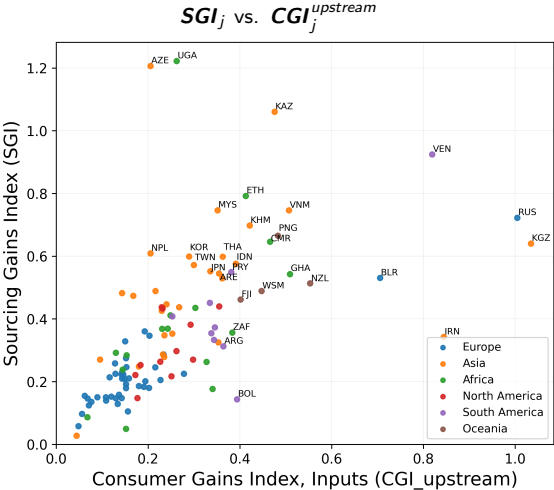
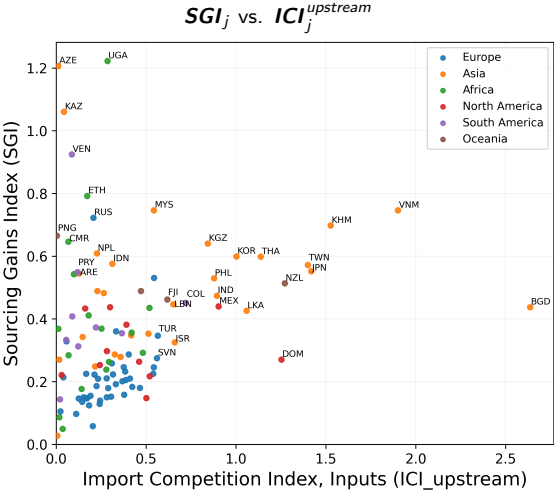
- Redirected Chinese exports lower prices for downstream producers
- This reduces downstream costs and enhances sales and exports of downstream producers
- Percentage total sales growth governed by:

Sourcing gains index

$$SGI_j = 100 \times \sum_{d \in \mathcal{W}_-} \frac{X_{jd}}{X_j} \sum_{p \in \mathcal{P}} (\epsilon_{jdp} - 1) s_{jdp} \sum_{z \in \mathcal{P}^I} a_{pz} \chi_{cjz}^M \Phi_z$$

- a_{pz} is use of input z by sector p (from [Fetzer et al., 2024](#))

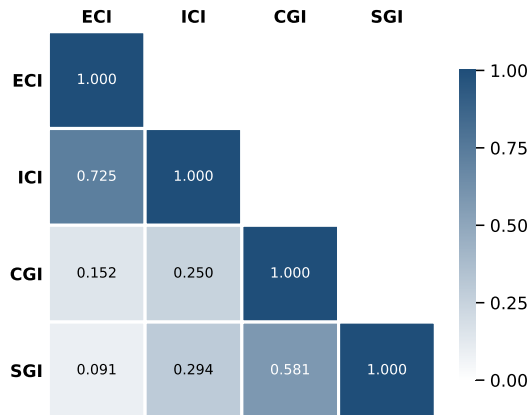
Sourcing gains reflect distinct input–output linkages



Taking stock

- The indices capture four **distinct, not mutually exclusive, channels**
- The implied magnitudes are economically meaningful
 - ▶ Exports decline 0.4-0.9% for large economies, and up to 3% for the most exposed ones, while consumer gains are above 1% for some countries

Across-Index Pearson Correlation



Robustness

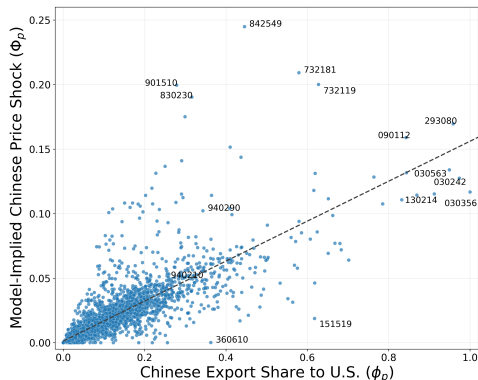
- A “basic” variant of the indices with common elasticities and tariff changes
 - ▶ Indices only shaped by observable shares ϕ_p
- A “long” variant of the indices with shares computed from 2017 data and tariff differences from January 2018 to September 2025
 - ▶ Long indices are highly correlated with baseline ones
- A coarser version of the *ECI* at the product level, to account for the possibility that the shock leads to large increases of Chinese exports to relatively underserved destinations

Opening the black box of the indices

The Product-Level Shock Combines Exposure and Price Adjustment

$$\Phi_p = -d \log p_{cp} = \phi_{cup} \left(\frac{\varepsilon_{cup}}{\bar{\varepsilon}_{cp} + \eta_{cp}} \right) \Delta \log(1 + \tau_{cup})$$

- ϕ_{cup} : initial U.S. exposure
- Φ_p : model-implied decline in Chinese f.o.b. prices
- Pearson correlation 0.831 and the rank correlation is 0.963



The Product-level shock predicts reallocation beyond the U.S.

	Dependent variable: $\Delta \log X_{cdp}$					
	(1)	(2)	(3)	(4)	(5)	(6)
ϕ_p	1.280*** (0.223)	0.998*** (0.230)				
Φ_p			3.371*** (0.810)	2.115** (0.968)		
$(\varepsilon_{cdp} - 1)\Phi_p$					1.715*** (0.501)	1.413** (0.557)
Destination fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
HS2 fixed effects	No	Yes	No	Yes	No	Yes
Observations	479,835	479,835	391,915	391,915	300,862	300,862
HS6 products	5,189	5,189	4,068	4,068	4,011	4,011
Destinations	191	191	191	191	163	163
R^2	0.071	0.128	0.079	0.124	0.089	0.137

Products with greater initial U.S. exposure subsequently grew faster across non-U.S. destinations. The full elasticity-adjusted predictor is positive, though weaker within HS2 sectors.

U.S. export contraction matches the predicted signs

	Dependent variable: $Y_p \equiv (\tilde{X}_{cup}^{post} - \tilde{X}_{cup}^{pre}) / \tilde{X}_{cp}^{pre}$					
	(1)	(2)	(3)	(4)	(5)	(6)
ϕ_p	-0.446*** (0.070)	-0.503*** (0.070)				
$\phi_p \Delta \log(1 + \tau_{cup})$			-0.874*** (0.281)	-0.869*** (0.302)		
$\varepsilon_{cup} \phi_p \Delta \log(1 + \tau_{cup})$					-0.311 (0.221)	-0.338 (0.216)
$(\varepsilon_{cup} - 1) \phi_p \Phi_p$					0.496 (1.218)	0.270 (0.974)
HS2 fixed effects	No	Yes	No	Yes	No	Yes
Observations	4,617	4,617	4,580	4,580	3,485	3,485
R^2	0.207	0.295	0.124	0.210	0.058	0.234

The direct tariff component reduces Chinese exports to the U.S.; the endogenous f.o.b. price decline partly cushions that contraction. The coefficients support the signs, not the model's exact one-for-one magnitudes.

Each country-level index can be decomposed by product

$$\mathbf{z}_j = \sum_{p \in \mathcal{P}} \mathbf{z}_{jp}, \quad \mathbf{Z} \in \{\mathbf{ECI}, \mathbf{ICI}, \mathbf{CGI}, \mathbf{SGI}\}.$$

- All four indices aggregate the same product-level shock Φ_p
- The weights differ: export exposure, domestic-production exposure, import-expenditure exposure, and input-output exposure
- The decomposition shows whether exposure is broad-based or concentrated in a small number of products

Top product contributions to export competition

Rank	Economy	<i>ECI_j</i>	HS6	Top product	Share
1	Armenia	2.46	852872	Colour televisions	25.87
2	Kyrgyzstan	2.31	870891	Radiators and parts	26.64
3	Vietnam	2.26	851712	Cellular telephones	32.19
4	Cambodia	1.56	611030	Synthetic sweaters & cardigans	9.05
5	Bangladesh	1.28	611030	Synthetic sweaters & cardigans	14.45
6	Hungary	1.19	850760	Lithium-ion batteries	48.07
7	Czechia	1.07	850760	Lithium-ion batteries	11.87
8	Sri Lanka	1.00	611610	Knitted gloves, plastic- or rubber-coated	8.03
9	Thailand	0.93	851762	Data transmission and routing apparatus	5.87
10	Mexico	0.92	851762	Data transmission and routing apparatus	12.31

Top product contributions to import competition

Rank	Economy	ICI_j	HS6	Top product	Share
1	Vietnam	3.44	851712	Cellular telephones	13.99
2	Cambodia	3.03	611020	Cotton sweaters and cardigans	16.37
3	Pakistan	2.33	620342	Men's cotton trousers	12.02
4	Madagascar	2.16	620342	Men's cotton trousers	19.82
5	Japan	1.62	950450	Video game consoles and machines	5.86
6	India	1.61	851712	Cellular telephones	30.80
7	South Korea	1.57	851712	Cellular telephones	20.03
8	Jordan	1.57	610463	Women's synthetic-fibre trousers	20.74
9	Bangladesh	1.52	620342	Men's cotton trousers	17.12
10	Kyrgyzstan	1.51	870891	Radiators and parts	19.15

Consumer gains are typically more diffuse

Rank	Economy	CGI_j	HS6	Top product	Share
1	Kyrgyzstan	1.57	611030	Synthetic sweaters & cardigans	5.29
2	Russia	1.20	847130	Portable computers	5.33
3	Paraguay	1.09	851712	Cellular telephones	33.62
4	Venezuela	1.04	852872	Colour televisions	5.49
5	United Arab Emirates	0.92	851712	Cellular telephones	34.47
6	South Africa	0.91	850760	Lithium-ion batteries	28.08
7	Iran	0.91	870899	Motor-vehicle parts and accessories	7.52
8	New Zealand	0.87	847130	Portable computers	12.97
9	Belarus	0.85	852872	Colour televisions	12.23
10	Kazakhstan	0.84	847130	Portable computers	5.27

Sourcing gains can be highly concentrated

Rank	Economy	<i>SGI_j</i>	HS6	Top product	Share
1	Uganda	1.22	710813	Semi-manufactured gold	73.99
2	Azerbaijan	1.21	270900	Crude petroleum oil	96.48
3	Kazakhstan	1.06	270900	Crude petroleum oil	92.57
4	Venezuela	0.92	270900	Crude petroleum oil	68.71
5	Ethiopia	0.79	090111	Coffee, not roasted or decaffeinated	59.59
6	Malaysia	0.75	270900	Crude petroleum oil	14.78
7	Vietnam	0.75	270900	Crude petroleum oil	7.36
8	Russia	0.72	270900	Crude petroleum oil	47.03
9	Cambodia	0.70	611020	Cotton sweaters and cardigans	6.12
10	Papua New Guinea	0.67	271111	Liquefied, natural gas	32.43

Conclusions

Conclusions

The U.S.-China trade war has not led to deglobalization, but it is causing the rise of **fragmented globalization**

- U.S. sourcing shifted away from China; Chinese exports moved toward third markets
- Third countries face export and import competition, but may also obtain gains
- The product-level evidence supports the predicted direction of Chinese export reallocation
- Product-level decompositions make the four diagnostic indices transparent and identify the sectors driving each country's exposure

Much as in Ishiguro's *The Remains of the Day*, the drama lies less in rupture than in reorganization: continuity in the aggregate, but a profound reshuffling in who trades what with whom, and on what terms

Thank you!

Check our interactive data platform:

https://pantras-hash.github.io/remains_of_the_trade/