

Macroeconomics of Geopolitics: Insights from Micro Linkages

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Brown University, NBER, and CEPR

**Envisioning the Future of Global Supply Chains—Johns Hopkins
University**

September 17, 2026



BROWN



Can protectionist policies re-shore supply chains and increase employment?

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No.. but can increase inflation...as also argued by Chairman Warsh yesterday.

Myths:

- Tariffs and sanctions are effective economic tolls to gain geopolitical leverage and will help to achieve domestic employment and growth objectives
- US and China are decoupling
- Supply chains are re-shoring and becoming resilient to global shocks
- Dollar and dollar assets are losing their shine

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- Global trade and finance networks are evolving into hub-and-spoke system with trade centered in China and finance centered in US.

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Globalization 2.0 is underway w/unintended domestic macroeconomic consequences.

1. Trade Fragmentation

- Bilateral trade has fallen (US-China), but not global trade
- Supply chains are sticky—our work
- Frequent trade disruptions due to economic statecraft in the new age of **great power competition** (as in early 1900s).

In Transition towards Globalization 2.0

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2. Financial Fragmentation

- No evidence: surprising!
- Record global capital inflows into the U.S.—the country that imposed highest tariffs;
U.S. equity markets centrality in financial networks—“Geopolitics priced-in”.

1. Capital flows represent international investment decisions $\Rightarrow$ Inter-temporal trade
2. Backed by the ability to move goods internationally $\Rightarrow$ Intra-temporal trade

Cannot have 1) w/o 2)

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“No man is an island entire of itself; every man is a piece of the continent, a part of the main... any man's death diminishes me, because I am involved in mankind...”

—John Donne

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- The macroeconomics of an integrated world cannot be done one country, one sector, one supply chain at a time.

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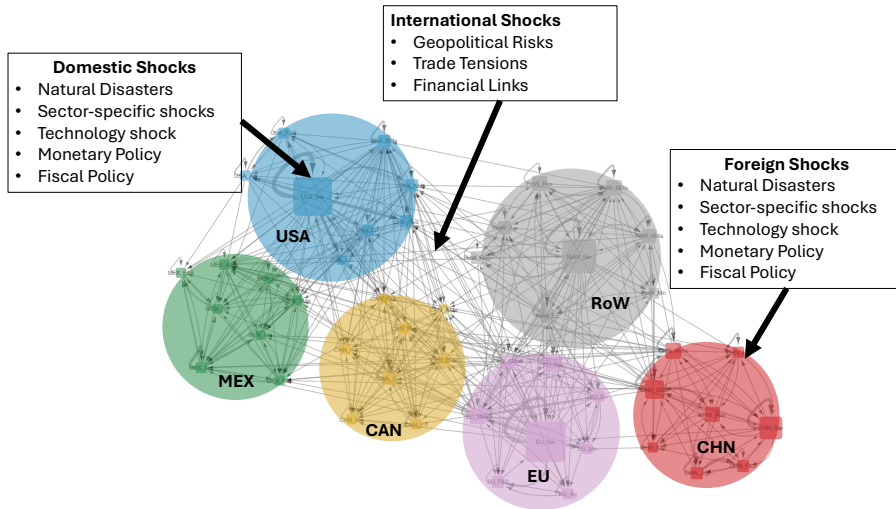
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- Every economy is a node. Every shock travels the edges.
- The macroeconomics of an integrated world cannot be done one country, one sector, one supply chain at a time.
- Our research proposes a new multi-country, multi-sector general-equilibrium model with full international input–output linkages—built on Baqaee–Farhi, **extended to the open economy w/endogenous exchange rates, current accounts, dynamics, and monetary policy.**

A New Global Networks Framework



Global Networks, Risks and the U.S. Economy; Boston FED Annual Conference.

Using geopolitical tools in a highly globally interdependent world?

Global Interdependence w/Global Networks means:

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- Measurement is hard when firms' desire for resilience and growth meet states' geopolitical rivalry—misaligned incentives and **global misallocation of capital**.
- **Continuous dynamic economic leverage**: not from chokepoints (Hormuz) and market power (rare earths)—static leverage; comes from global GE response to heterogeneous policies/shocks.

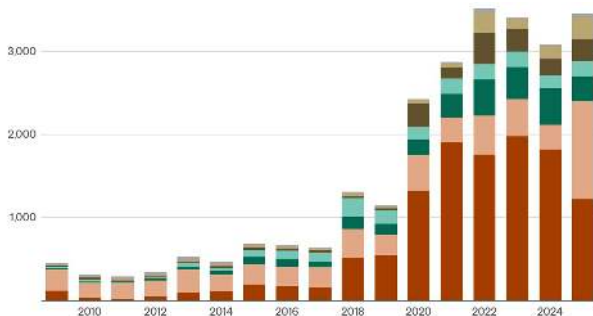
Trade Policy

Since 2020: ↑ Use of Protectionist Tools of Economic Leverage/Economic Security Shaping Global Outcomes

Rise of Economic Security Tools, 2010-2024

Number of new policy interventions per year, by category

Subsidies Import restrictions Localization and public procurement Export promotion Export restrictions Investment restrictions Other



Source: CFR.

Geopolitics and Trade: Stability vs. Weaponization

Two foundational views on hegemons, trade, and international monetary system

Stabilizer: Kindleberger (1941, 1973):

A stable world economy requires a dominant power to supply: an open market, countercyclical lending, stable exchange rates, and lender of last resort.

Weaponizer: Hirschman (1945):

Asymmetric trade relationships generate "influence" and "supply" effects: the larger, less-dependent partner gains coercive leverage over the smaller one.

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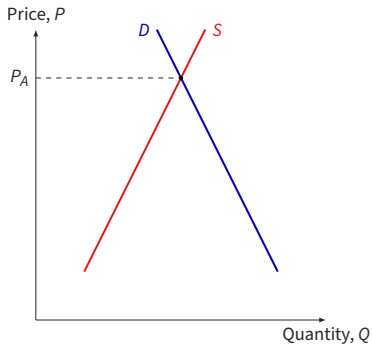
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Our work shows that global trade and finance network can give stabilization and weaponization at the same time to each country from a macro-outcomes perspective...
...with unintended consequences on micro-outcomes.

Textbook Effects of Large Country Tariffs

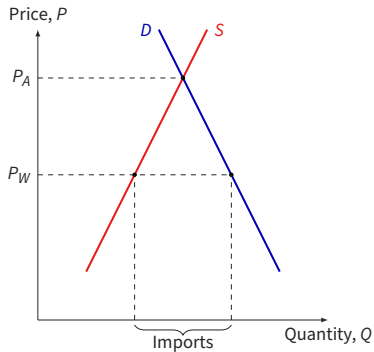
- Autarky, no trade.



Adapted from Krugman, Obstfeld & Melitz (2022).

Similar reasoning in Ossa and Redding (2026).

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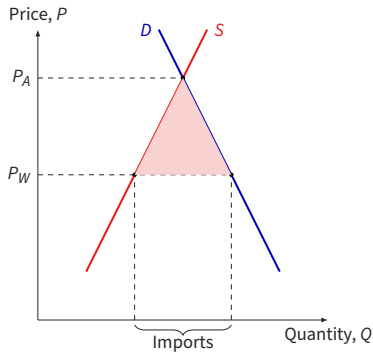


- Autarky, no trade.
- Opening up to trade.
 - World price is lower: $P_W < P_A$.
 - Home imports.

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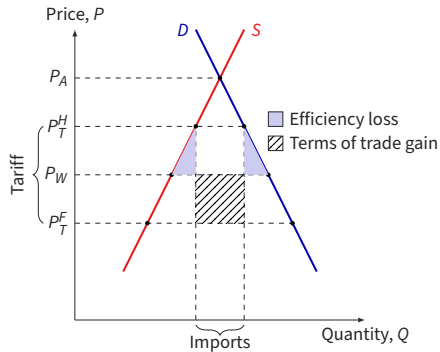


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- Opening up to trade.
 - World price is lower: $P_W < P_A$.
 - Home imports.
 - Suppliers lose, consumers benefit.
 - Home as a whole is better off.
- Home imposes a tariff.
 - Home prices increase: $P_T^H > P_W$.
 - Home imports less, inefficient.
 - TOT gains if tariff revenue compensates inefficiencies. Optimal tariff.

Adapted from Krugman, Obstfeld & Melitz (2022).

Similar reasoning in Ossa and Redding (2026).

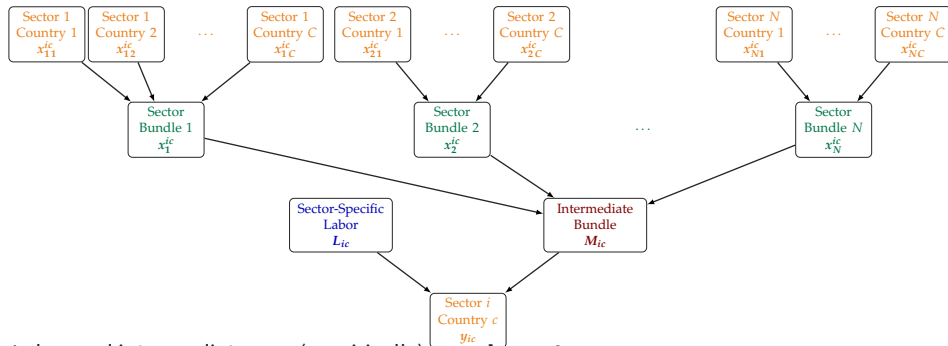
What is Missing from a Macro-Global Networks Perspective?

Central Banks' and financial markets' responses to tariff-induced cost and price $\uparrow$

- SOE vs global general equilibrium
- Complete vs incomplete markets
- Heterogeneous firm responses

Critical for identifying aggregate macro impact, domestically and globally

A New Global Networks Framework–Global Production at the Center



- Labor and intermediates are (empirically) **complements**.
- Sectors (e.g., steel, plastics), complements/country varieties, **substitutes** (elasticity → resilience).
- Allows differentiation between, e.g., German vs. Japanese cars, while **trade imbalances** in the data.
- **Incomplete financial markets**—realistic current account/**global imbalances**.

Çakmaklı, Demiralp, Kalemli-Özcan, Yeşiltaş, Yıldırım (forthcoming, RESTUD), Kalemli-Özcan, Soylu, Yıldırım (2025).

N-country, J-sector Global Model w/Trade and Finance Distortions

The Risk-Sharing Wedge

Deviation from complete financial markets with tariffs.

- Sign determines whether the tariff-imposing country gains or loses.
- Sign depends on trade and financial networks, elasticities, and shock persistence.

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The Propagation Matrix

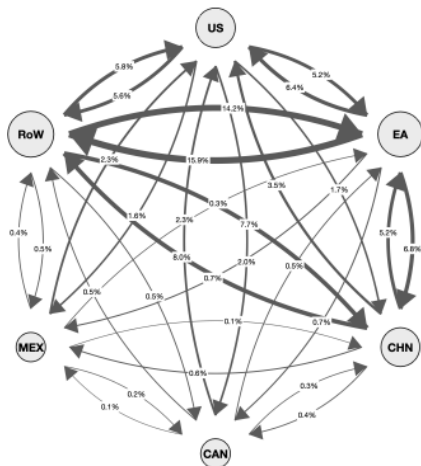
- Inflation persistence rises with number of sectors.
- I-O linkages strengthen persistence of inflation and real marginal cost.
- Open-economy heterogeneity (monetary policy, exchange rate) amplifies propagation.

Inflation-output dynamics changes, stabilization takes longer

Important for evolution of global trade flows and supply-chain re-shaping

Model-Based Evolution of Global Trade and Production Network

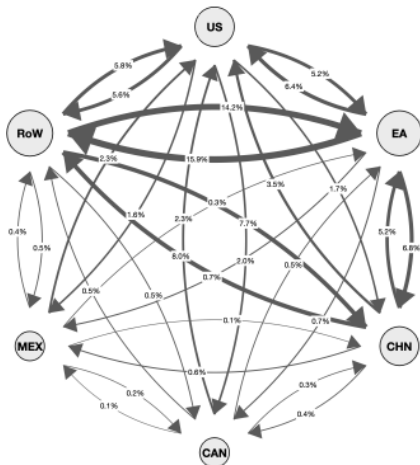
Before 2025



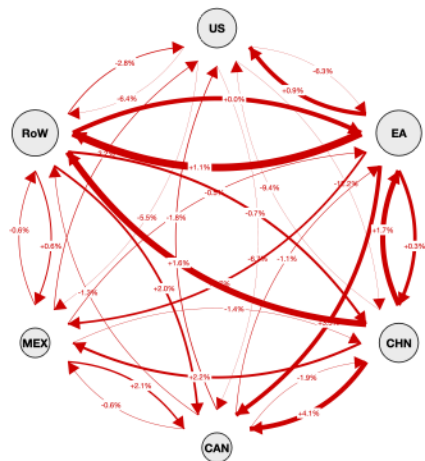
Kalemli-Özcan, Soylu, Yildirim (2025).

Model-Based Evolution of Global Trade and Production Network

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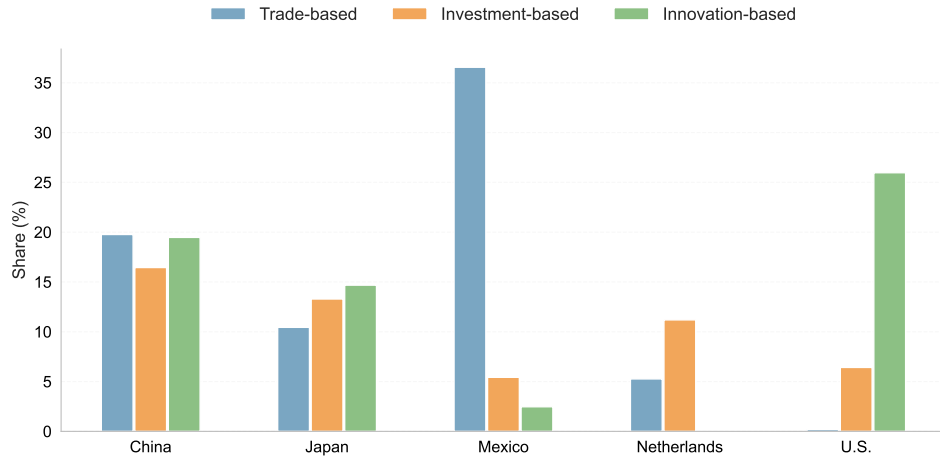
After 2025-2026 Tariffs (12 quarters, 2029)



Kalemli-Özcan, Soylu, Yildirim (2025).

Firm-to-Firm Networks in Data—GLL

Status of 2025 U.S. Supply Chains: Firm-Level REAL Evidence

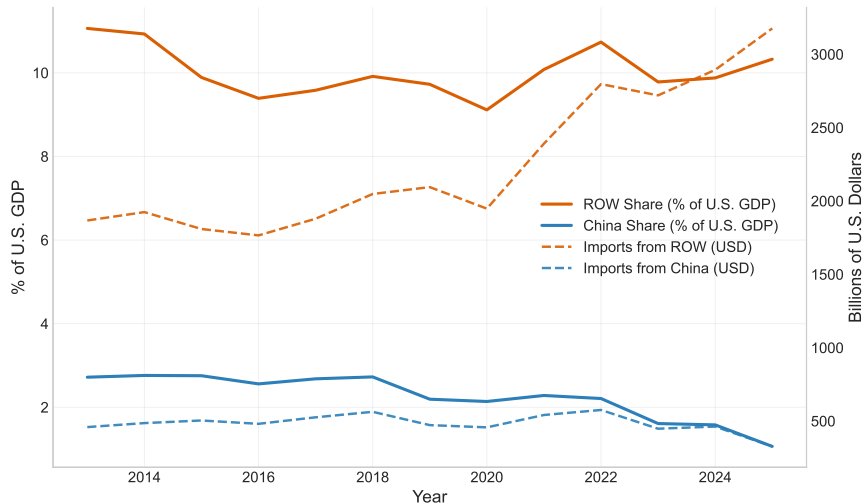


Adamcik, Buckberg, Kalemli-Özcan, Shi, Yildirim (2026).

Firm-Level Actual Outcomes Backed by Interviews

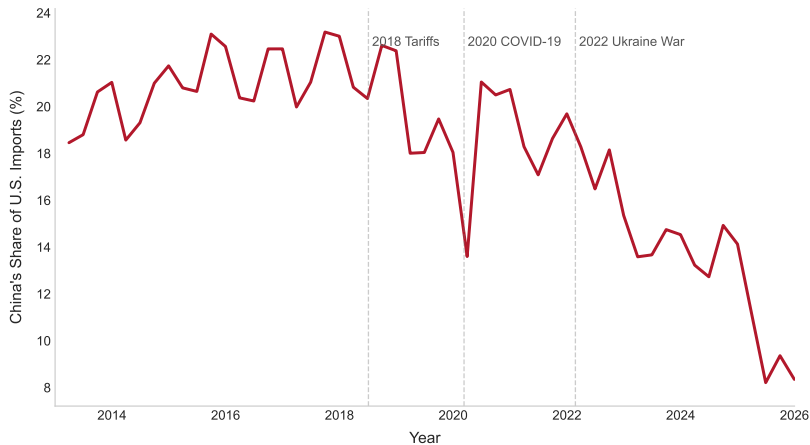
American manufacturer of safety-critical truck components went looking for a domestic source for a large steel casting it had been buying from China. Its supply chain team contacted more than 100 U.S. casting companies. Six or seven sent back a quote. One quote came in around \$1,000 for a part the company buys from China for \$200. Needless to say, the Chinese supplier won out, coming in far cheaper, even after tariffs.

U.S. Imports from China and the Rest of the World



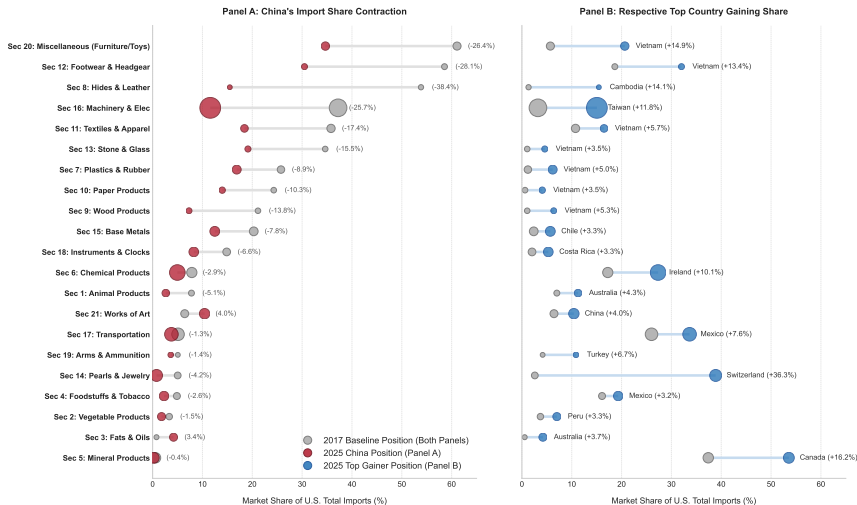
Sources: UN Comtrade and the U.S. Bureau of Economic Analysis (GDP).

China's Share of U.S. Imports



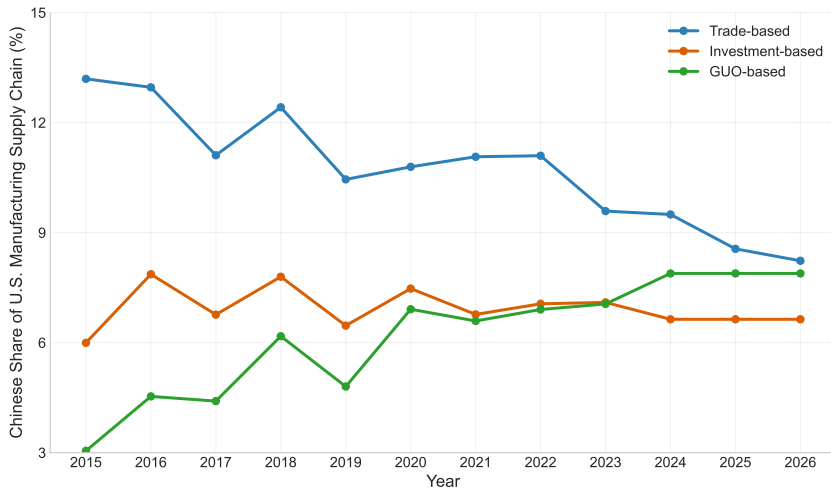
Adamcik, Buckberg, Kalemli-Özcan, Shi, Yildirim (2026).

China's Import Share and the Top Competitor, 2017 vs. 2025



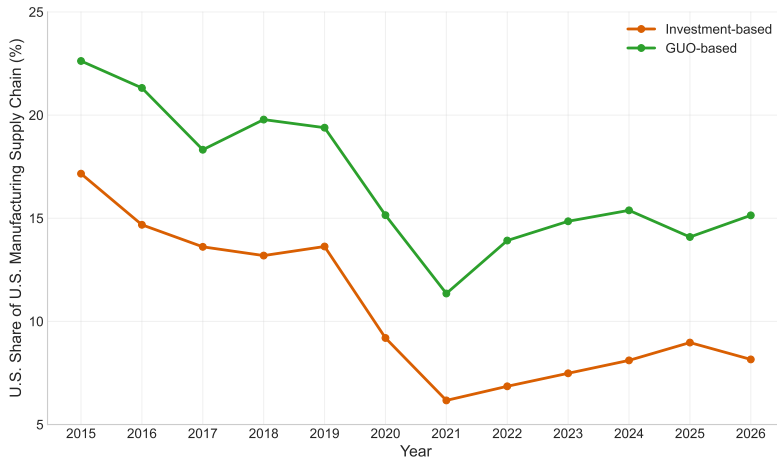
Adamcik, Buckberg, Kalemli-Özcan, Shi, Yildirim (2026).

Chinese Share of the U.S. Manufacturing Supply Chain



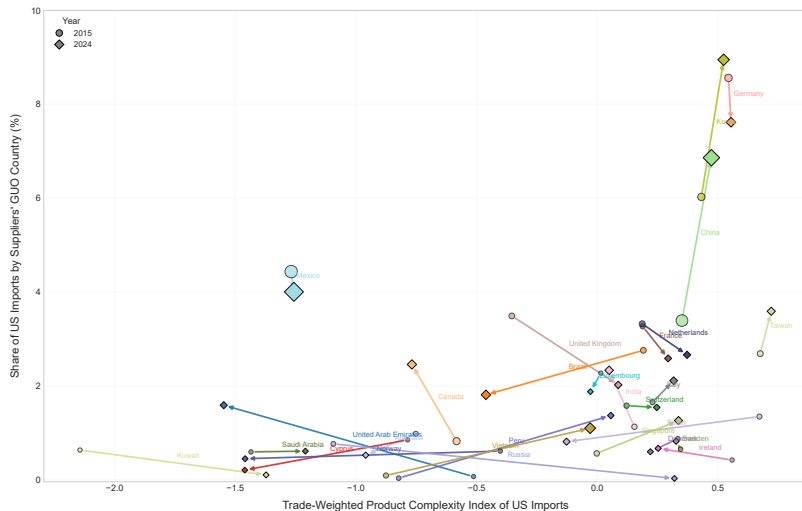
Adamcik, Buckberg, Kalemli-Özcan, Shi, Yildirim (2026).

U.S. Share of the U.S. Manufacturing Supply Chain



Adamcik, Buckberg, Kalemli-Özcan, Shi, Yıldırım (2026).

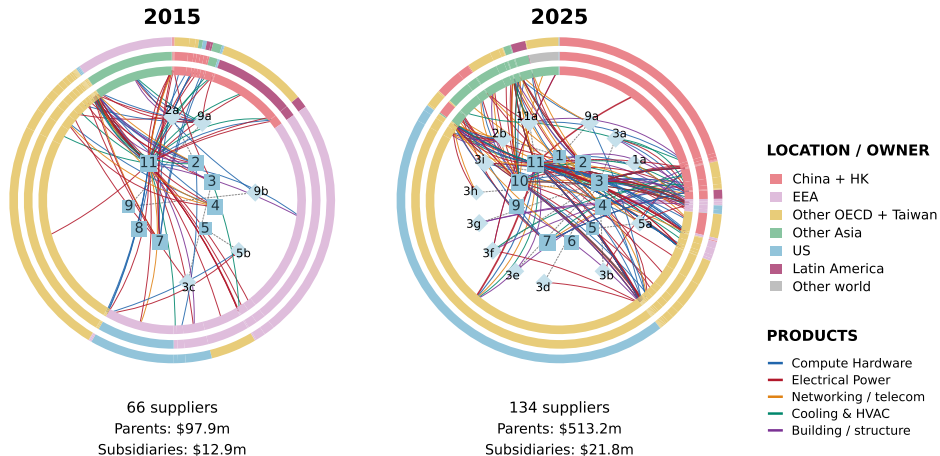
Who owns the capital of U.S. Suppliers?



Adamcik, Buckberg, Kalemli-Özcan, Shi, Yildirim (2026).

Is this all AI?

U.S. AI Supply Chains: Trade, Investment, Innovation



Inner band: location Middle band: immediate owner Outer band: ultimate owner

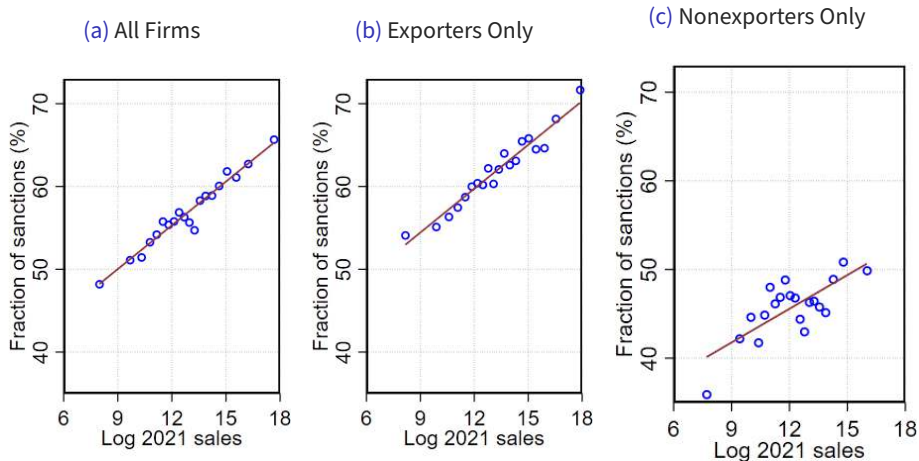
Segment width = supplier share of retained shipment USD in that year. Ring thickness is constant.

Known immediate-owner suppliers only. Ownership snapshots: 2015 / 2023. Arrows: imports; dashed links: ownership.

Sanctions

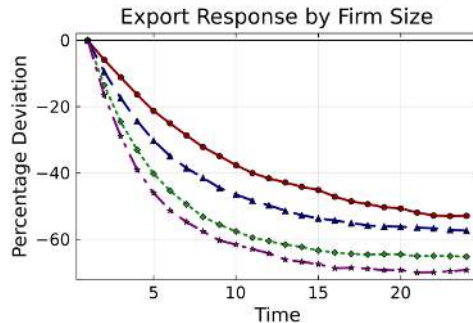
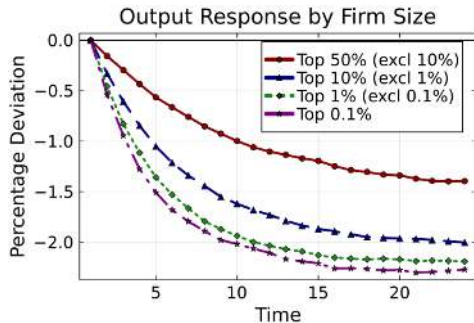
Are Sanctions Similar?

Larger European Firms Face Higher Sanction Risk



Kalemli-Ozcan, Kim, Kwak (2026).

Heterogeneous Responses to Sanctions: Productive Firms Hit!



Kalemli-Ozcan, Kim, Kwak (2026).

Supply Shocks, Chokepoints and International Transmission

Let us go back to Pandemic...

January 28, 2021: Taiwan sought Germany's help in securing Covid-19 vaccines, after Berlin asked for the island's assistance in easing a shortage of semiconductor chips.

⇒ Swap two vital shortages: **The shortage of vaccines and the shortage of chips.**

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December 2021: shortages spread to other sectors, leading to the highest levels of global inflation in four decades!

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Policy underestimated the persistence in supply chain disruptions (and inflation)...

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...w/ few exceptions: some academics and Maersk.

(a) Jan. 28, 2021



Taiwan asks Germany to help obtain coronavirus vaccines

By Reuters Staff

2 MIN READ



TAIPEI (Reuters) - Taiwan has sought Germany's help in securing COVID-19 vaccines, Economy Minister Wang Mei-buu said on Thursday, after Berlin asked for the island's assistance in easing a shortage of automobile semiconductor chips.

(c) Feb. 28, 2021



Carmakers braced for prolonged chip shortage

Executives warn supply is unlikely to meet demand in the first half of the year



(b) Jan. 9, 2021

THE WALL STREET JOURNAL.

Low on Workers, Manufacturers Recruit Their Executives for the Factory Floor

Covid, child care and competition from e-commerce warehouses contribute to labor shortages at many factories

(d) Feb. 22, 2021

THE WALL STREET JOURNAL.

Consumer Demand Snaps Back. Factories Can't Keep Up.

Strained supply chains, labor shortage thwart full reopening; 'everyone was caught flat-footed'

(a) Aug. 25, 2021



(b) Oct. 31, 2021



(c) Nov. 10, 2021



(d) Oct. 22, 2021



China Lockdown 2022

(a) May 9, 2022



(b) May 11, 2022



Suez + Pandemic in 2021 vs Hormuz in 2026: Maersk

(a) April 27, 2021



(b) May 7, 2026



Chokepoints, Shortages, and Inflation-Output

- CPI inflation in country c:

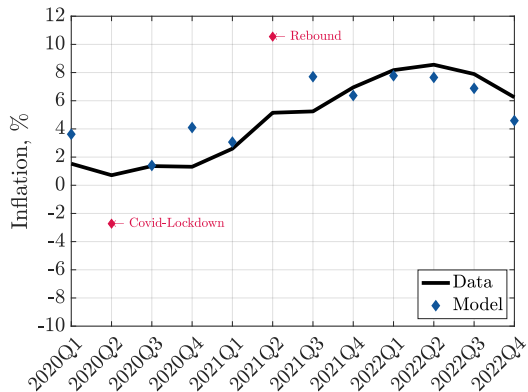
$$\begin{aligned}
 d \log \text{CPI}_c = & \underbrace{d \log E_W^{\$}}_{\text{World Expenditure}} + \underbrace{d \log \mathcal{E}_c}_{\text{Exchange Rate}} - \underbrace{(\lambda^c)^T d \log A}_{\text{Productivity Shocks}} - \underbrace{(\Lambda^c)^T d \log L}_{\text{Factor Changes}} \\
 & + \underbrace{(\Lambda^c)^T d \log \Lambda}_{\text{Local-Global D-S Imbalance}}
 \end{aligned}$$

- Under geopolitical fragmentation:

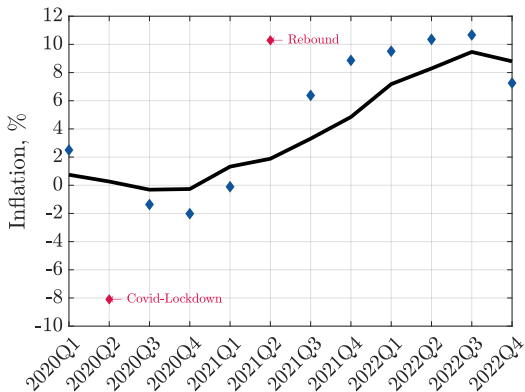
$$\begin{aligned}
 d \log \text{CPI}_c = & d \log E_W^{\$} + d \log \mathcal{E}_{c,US} - (\lambda^c)^T d \log A - (\Lambda^c)^T d \log L + (\Lambda^c)^T d \log \Lambda \\
 & + \underbrace{(\lambda^c)^T (\Omega^{\mathcal{N}} \odot d \log \tau) \mathbf{1}_{CN}}_{\text{Trade cost effects}}.
 \end{aligned}$$

2021 Inflation

(a) United States



(b) Euro Area



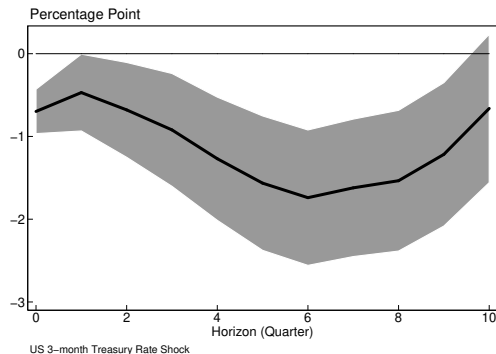
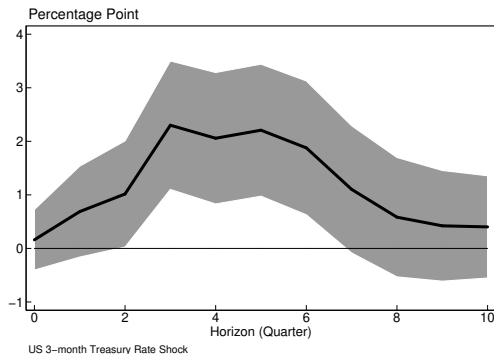
di Giovanni, Kalemli-Özcan, Silva, Yıldırım (2022).

Monetary Policy and International Transmission

What do we know–What to expect?

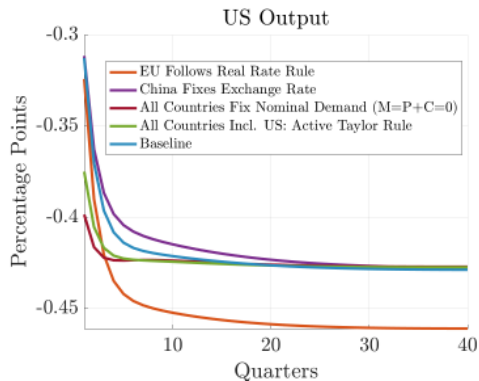
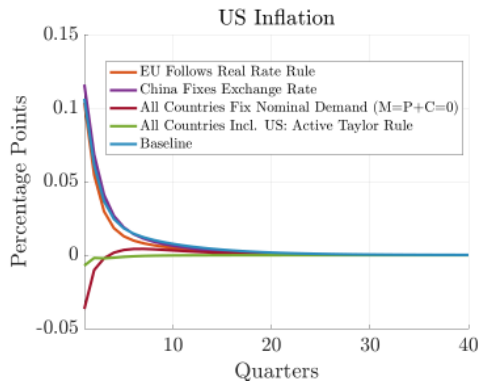
- The U.S. monetary policy's international footprint is large.
- Geopolitical fragmentation leads to persistently $\uparrow$ prices + $\downarrow$ growth, domestically and globally
- **Cross-country differences in monetary policies** will play an increasingly important role in **pricing risk** under Globalization 2.0.

Risk Premia: Diverging Bond Spreads to U.S MP Shocks in EM vs AE



Kalemli-Ozcan (2019, Jackson Hole Symposium).

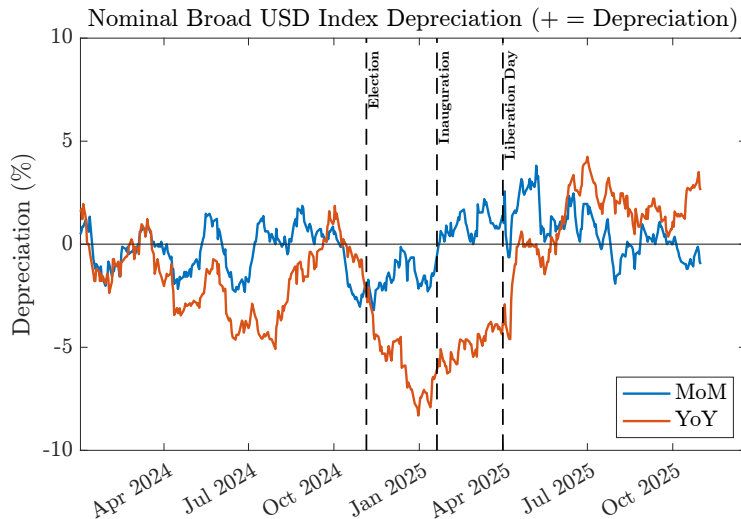
Macro Impact of Geopolitics Depends: CBs Heterogeneous Responses



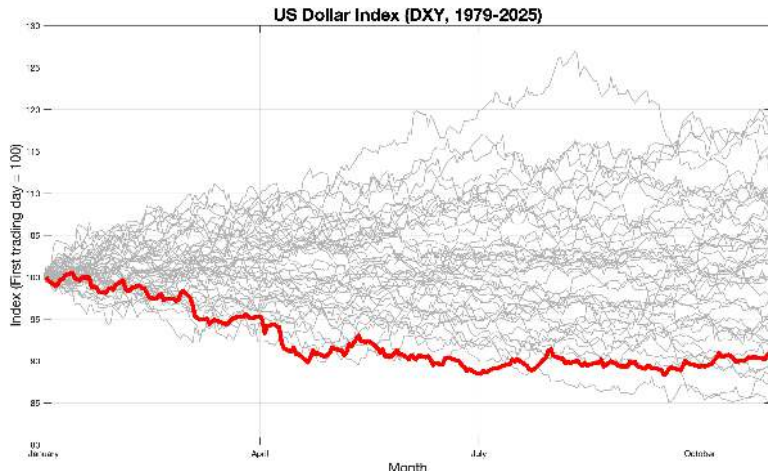
Kalemli-Özcan, Soylu, Yıldırım (2025).

The U.S. Dollar

Broad US Dollar Index



Historical Comparison of the Yearly Performance of the US Dollar, 1979..



Each gray line: DXY within one calendar year, first trading day = 100; **red: 2025** (through October 31).

Source: Kalemli-Özcan and Soylu, "Can Policy Uncertainty Drive the Dollar?" (*ARFE*)

Testable Predictions from the GLL Model

Each shock has a different sign and magnitude

Shock	$\hat{\varepsilon}_t$ (USD dep.)	$\hat{S}_t$ (equities)	$i_{H,t} - i_{F,t}$

Testable Predictions from the GLL Model

Tariff level: appreciation + higher differential — and it must act *symmetrically*

Shock	$\hat{\mathcal{E}}_t$ (USD dep.)	$\hat{S}_t$ (equities)	$i_{H,t} - i_{F,t}$
Tariff level $\tau_t \uparrow$	—	—	+

Testable Predictions from the GLL Model

Convenience-yield decline: depreciation $\Rightarrow$ moves CIP wedge + differential

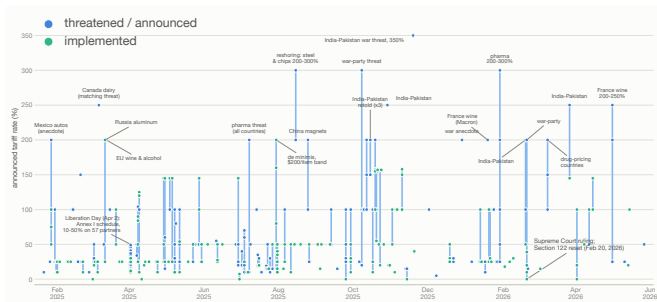
Shock	$\hat{\mathcal{E}}_t$ (USD dep.)	$\hat{S}_t$ (equities)	$i_{H,t} - i_{F,t}$
Tariff level $\tau_t \uparrow$	—	—	+
Convenience yield $\psi_t \downarrow$	+	—	+

Testable Predictions from the GLL Model

Uncertainty: the *only* shock pairing depreciation and falling equities with a *flat* differential

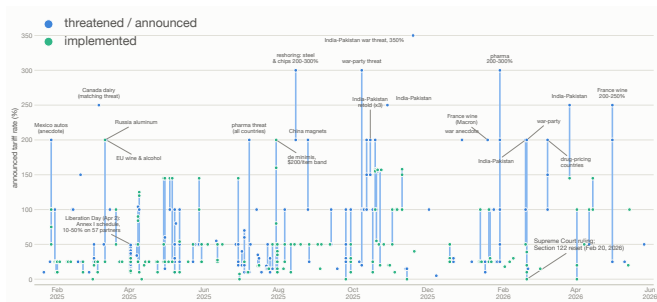
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Tariff level $\tau_t \uparrow$	—	—	+
Convenience yield $\psi_t \downarrow$	+	—	+
Uncertainty $\sigma_t^2 \uparrow$	+	—	≈ 0 (κ vs. η offset)

TiRADE: the tariff signal agents actually faced via announcements



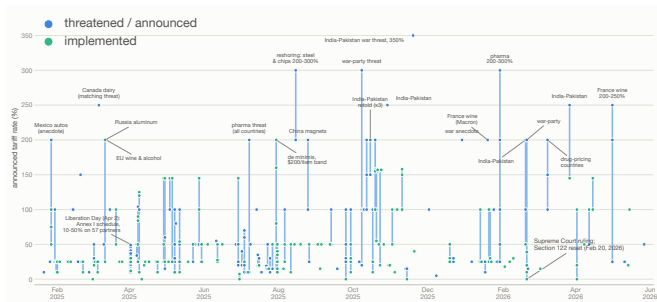
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- 434 rate statements from Jan 2025–May 2026

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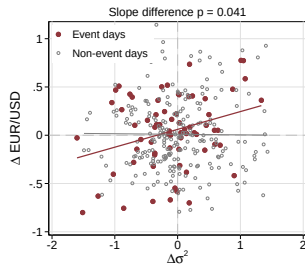
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- **71% outside the statutory record** (WTO and IMF, 2025)

TiRADE: the tariff signal agents actually faced via announcements

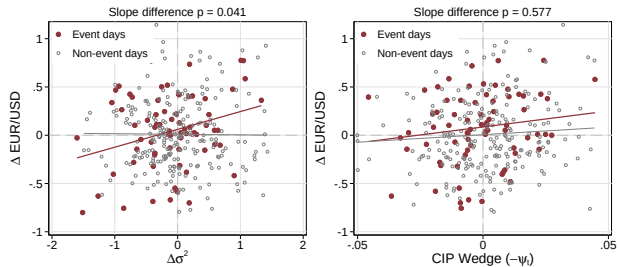


- Every communicated tariff *rate*: speeches, social media, and official communications
- 434 rate statements from Jan 2025–May 2026
- **71% outside the statutory record** (WTO and IMF, 2025)
- 177 announcement clusters (20-min merge) with timestamp—**DOWNLOADABLE AT GLL!**

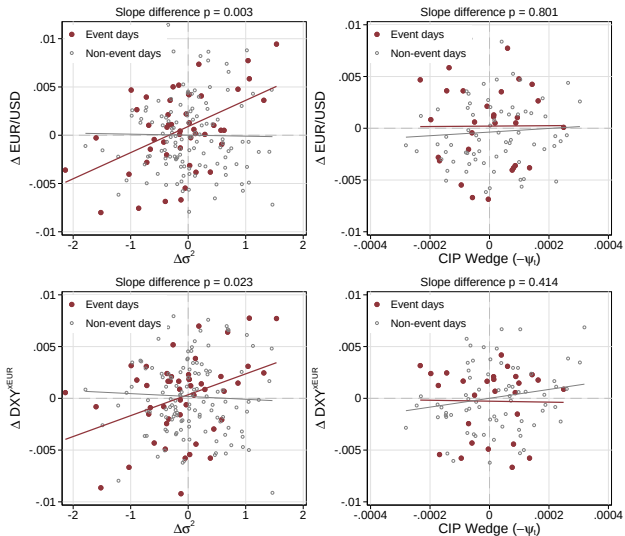
Policy Uncertainty and the Exchange Rate



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Takeaways

Policy Lessons from 2020-2026 Global Experiment

1. **Global trade, production and finance networks shape the impact of geopolitical shocks**

- Global interdependence and complementarity in supply chains bind us
- Geopolitics can be self-defeating with unintended consequences; Who gains-who loses depend on incomplete financial markets and trade+finance networks
- Tariffs are a costly way to fix deficits and global imbalances

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2. **Supply chains are sticky but global capital is mobile**

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- China investment and ownership in supply chains increased over time, while the U.S. has declined though U.S. still dominates the innovation supply chain

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3. **Monetary policy is decisive even w/asymmetric shocks but stabilization takes longer**

- Supply shocks lead to persistent inflation. Global impact.
- Expectations and uncertainty bite.
- The dollar's depreciation was priced **tariff-regime uncertainty**.
- Predictability is a policy asset.

Some food for thought..

Four stagflationary shocks in four years: pandemic, two wars, tariffs

- Why the resilience? ...comes from interdependence.
- **Back to Kindleberger vs Hirshman:** Network centrality and granularity can provide macro stabilization and global weaponization simultaneously.
- In an integrated world, every shock is everyone's shock. **Our job is to model and measure the edges as carefully as the nodes.**

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“... And therefore never send to know for whom the bell tolls; it tolls for thee.”

—John Donne

<https://www.globallinkages.org/>

Papers w/ Jake Adamcik, Elaine Buckberg, Julian di Giovanni, Daisoon Kim, Junhee Kwak, Alvaro Silva, Can Soylu, Filiz Unsal, Yuqi Shi, Muhammed Yildirim.



Thank you!

