Exchange Rates and Monetary Policy

Şebnem Kalemli-Özcan

Brown University, NBER, and CEPR

Capital Flows, Exchange Rates and Geopolitics

May 7-9, 2026, Banco de Espana

Exchange rates and monetary policy in a globally interdependent world

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- What are the implications for international transmission of shocks?

New insights from ongoing projects at the Global Linkages Lab (GLL) + revisit previous findings from the literature.

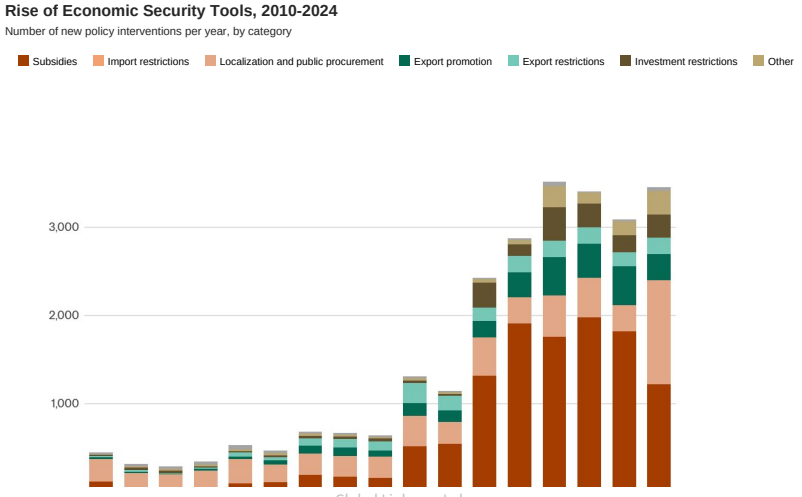
1. Global Trade, Tariff Uncertainty, and the U.S. Dollar, w/Can Soylu and Muhammed Yildirim.
   AEA, Papers and Proceedings, January 2026.

2. Global Networks, Monetary Policy and Trade, w/Can Soylu and Muhammed Yildirim
   NBER, CEPR, March 2025.

3. Global Transmission of Fed Hikes: The Role of Policy Credibility and Balance Sheets, w/Filiz Unsal
   Brooking Papers on Economic Activity, 2023.

4. U.S. Monetary Policy and International Risk Spillovers
   Jackson Hole Symposium Proceedings, 2019.

Increase Use of Tools of Economic Leverage/Economic Security Shaping Global Outcomes



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.

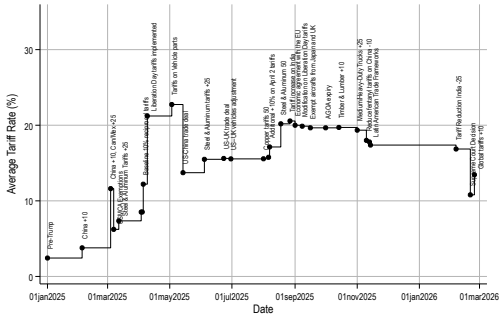
Weaponizer: Hirschman (1945):
Asymmetric trade relationships generate "influence" and "supply" effects: the larger, less-dependent partner gains coercive leverage over the smaller one.

We show that the same trade and finance network can give stabilization and weaponization at the same time from a macro inflation-output perspective.

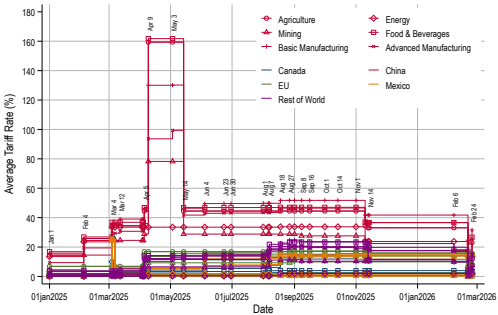
Tariffs

The 2025-2026 tariff episode: U.S. effective tariff rate went from 2.4 (J25) to 22.7 (M25) to 10.8 (M26)

(a) Effective U.S. tariff rate



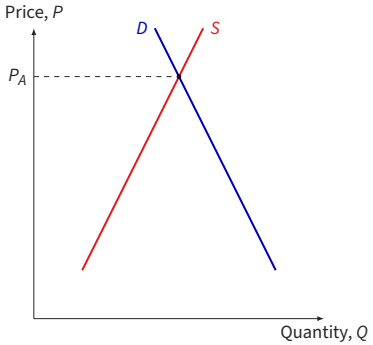
(b) Country-sector heterogeneity.



Central question. What is the macroeconomic impact of tariffs?

Textbook Case

Textbook Effects of Large Country Tariffs

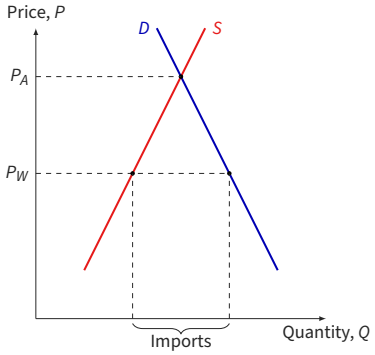


- Autarky, no trade.

Adapted from Krugman, Obstfeld & Melitz (2022).

Similar reasoning in Ossa and Redding (2026).

Textbook Effects of Large Country Tariffs



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

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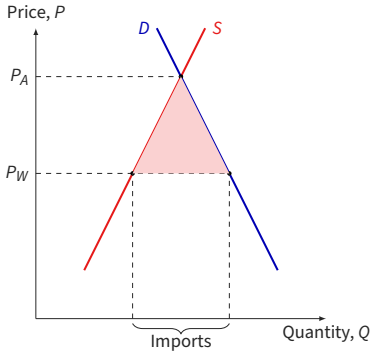

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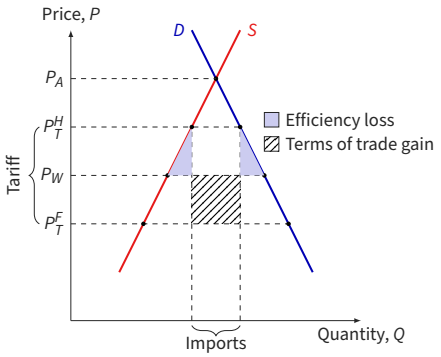

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  - World price is lower: $P_W < P_A$.
  - Home imports.
  - Suppliers lose, consumers benefit.
  - Consumer benefits are larger $\Rightarrow$ Home as a whole is better off.
- Home imposes a tariff.
  - Home prices increase: $P_T^H > P_W$.
  - If home is large, ROW demand for home goods will be lower.
  - The prices in ROW decrease: $P_T^F < P_W$ with Tariff = $P_T^H - P_T^F$.
  - Home imports less, efficiency loss.
  - TOT gains if tariff revenue compensates inefficiencies.Basis for optimum tariff.

What is Missing?

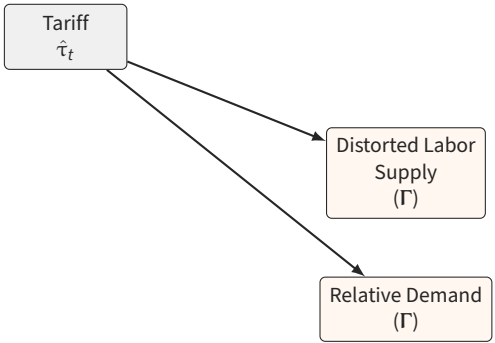
Central Banks' and financial markets' responses

- SOE vs global general equilibrium
- Complete vs incomplete markets

A New Open Economy Macro Framework with I-O, NK and Incomplete Financial Markets

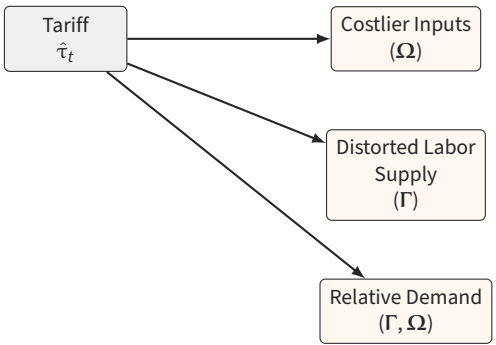
N-Country, J-Sector NKOE Model

Consumption shares $\boldsymbol{\Gamma}$: ToT gains vs. distorted labor supply



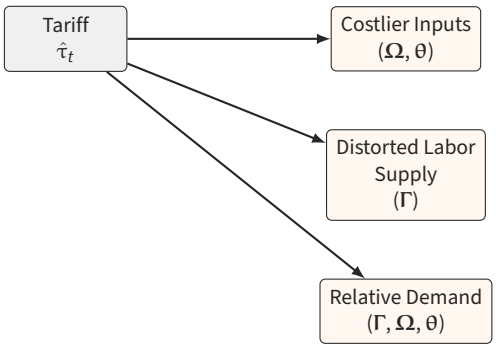
N-Country, J-Sector NKOE Model

I-O matrix $\mathbf{\Omega}$: ToT gains vs. higher marginal cost propagated by network



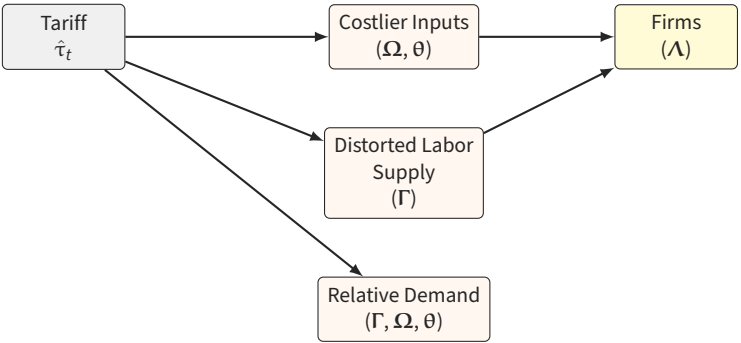
N-Country, J-Sector NKOE Model

EoS θ: high $\theta \Rightarrow$ easy to substitute $\Rightarrow \hat{Y}_t \uparrow$ or low $\theta \Rightarrow$ complements & bottlenecks, $\rightarrow \hat{Y}_t \downarrow$



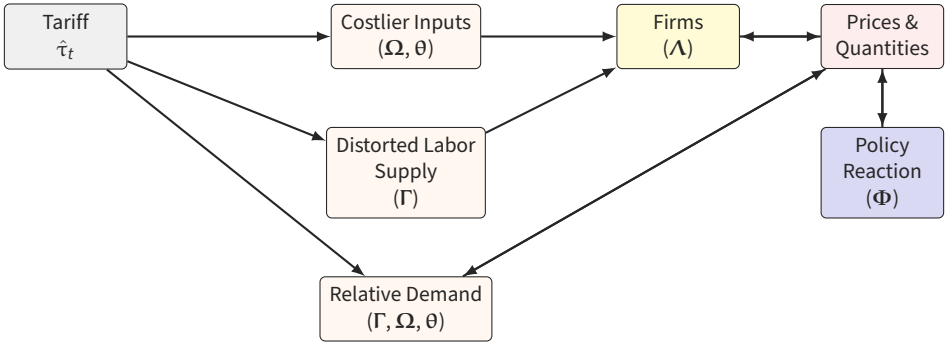
N-Country, J-Sector NKOE Model

Stickiness $\boldsymbol{\Lambda}$: Combines PCP&DCP. Low $\Lambda \Rightarrow$ flatter NKPC or high $\Lambda \Rightarrow$ steeper NKPC



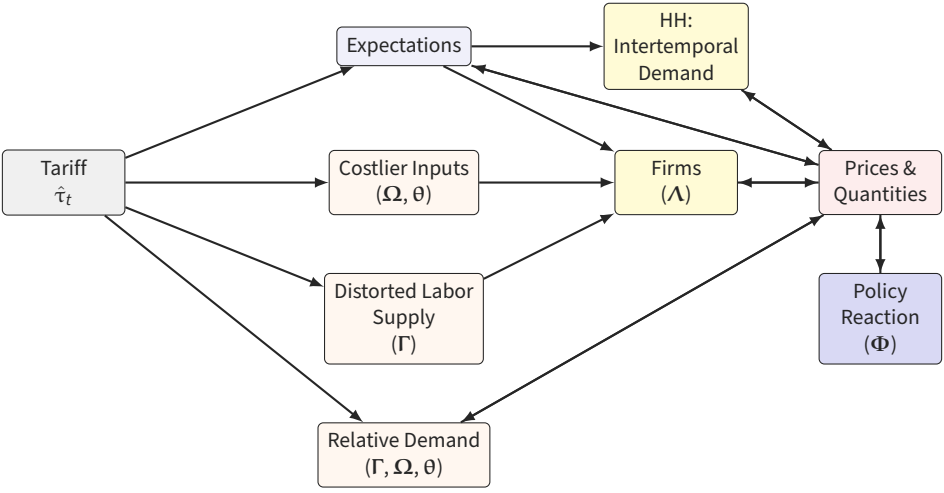
N-Country, J-Sector NKOE Model

Policy $\mathbf{\Phi}$: response to $\pi_t^P \Rightarrow$ tariffs contract demand



N-Country, J-Sector NKOE Model

Tariffs lead to intertemporal tradeoffs $\Leftrightarrow$ via expectations



Two new analytical objects in global general equilibrium w/SR +LR effects:

The risk-sharing wedge $\hat{w}_t$

Martingale deviation from Backus-Smith complete markets.

- Sign determines whether the tariff-imposing country gains or loses.
- Sign depends on network, elasticities, and shock persistence.
- Static transfers in balanced trade models overstate it.

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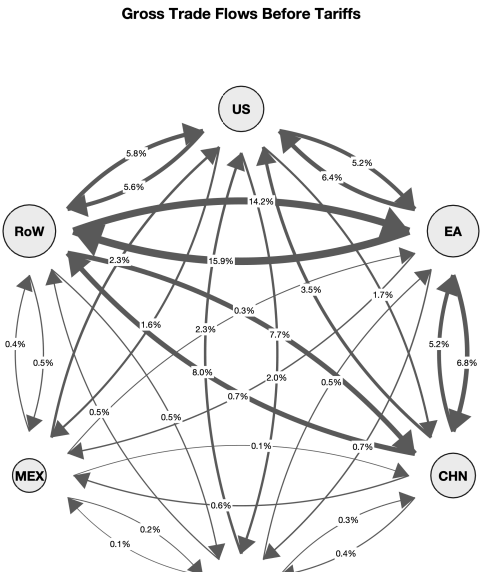
The NKOE propagation matrix $\mathbf{\Psi}^{\text{NKOE}}$

Coefficient on lagged real marginal cost.

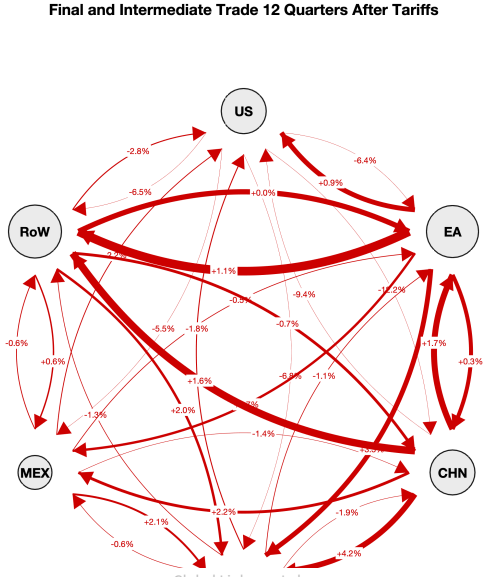
- With $J = 1$, $\mathbf{\Psi}^{\text{NKOE}} = \mathbf{0}$; with $J > 1$, $\mathbf{\Psi}^{\text{NKOE}} \neq \mathbf{0}$.
- Inflation persistence rises with J; I-O linkages strengthen persistence.
- Open-economy heterogeneity (monetary policy, exchange rate) amplifies propagation.

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

Real Trade Flows Before

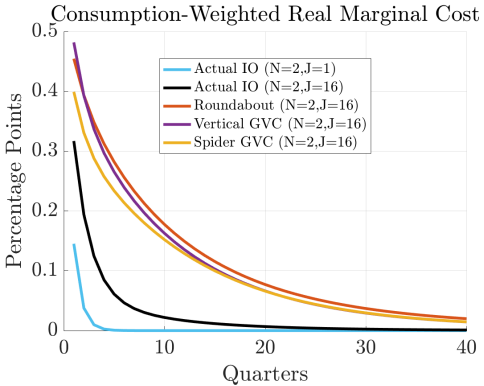


Predicted Trade Flows 12 quarters After



Network granularity and persistence

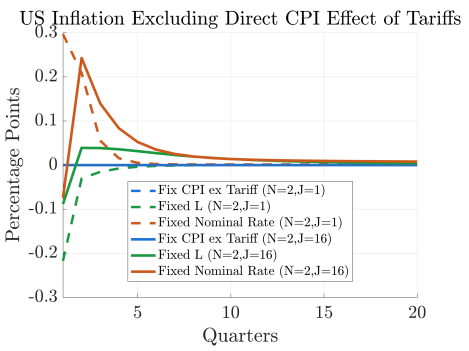
Setup. CPI-weighted real marginal cost, 10% U.S. tariff on RoW, passive monetary policy.

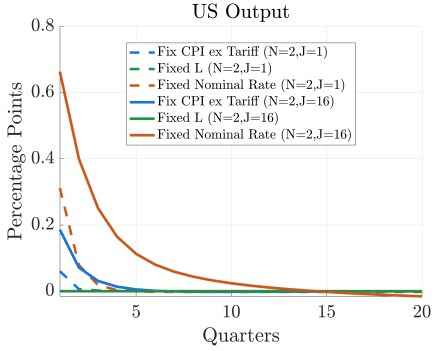


All granular networks aggregate to the *same* 2×2 matrices $\boldsymbol{\Gamma}$ and $\boldsymbol{\Omega}$.

- $J = 1$: fastest decay; inherited distortions vanish quickly.
- $J > 1$: slower decay; larger initial impact.
- Persistence varies across granular networks even conditional on $J > 1$.

Inflation-output trade-off is also persistent





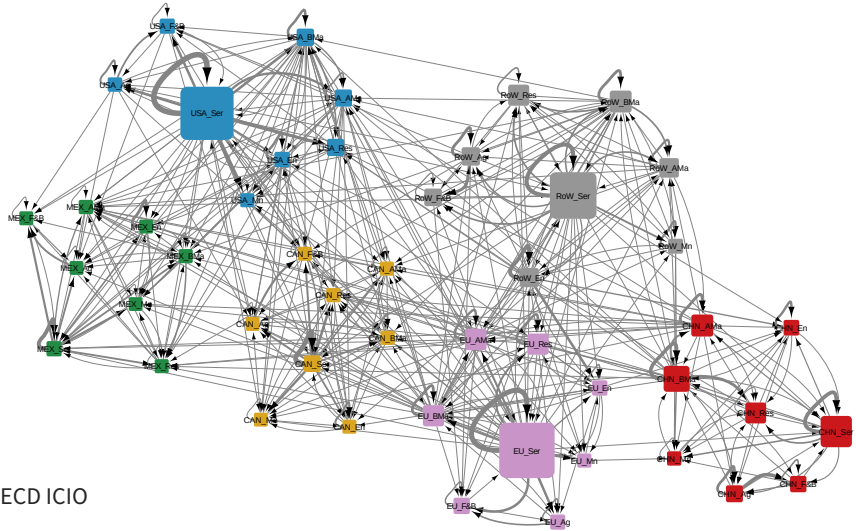
Three policy regimes. Passive; perfect CPI stabilization; employment stabilization.

Result. $J > 1$ slows convergence. Multi-sector economy remains farther from terminal equilibrium for longer.

Normative implication. Stabilization burden is larger under granular networks, regardless of policy rule. Whether it falls on inflation, output, or both depends on the rule.

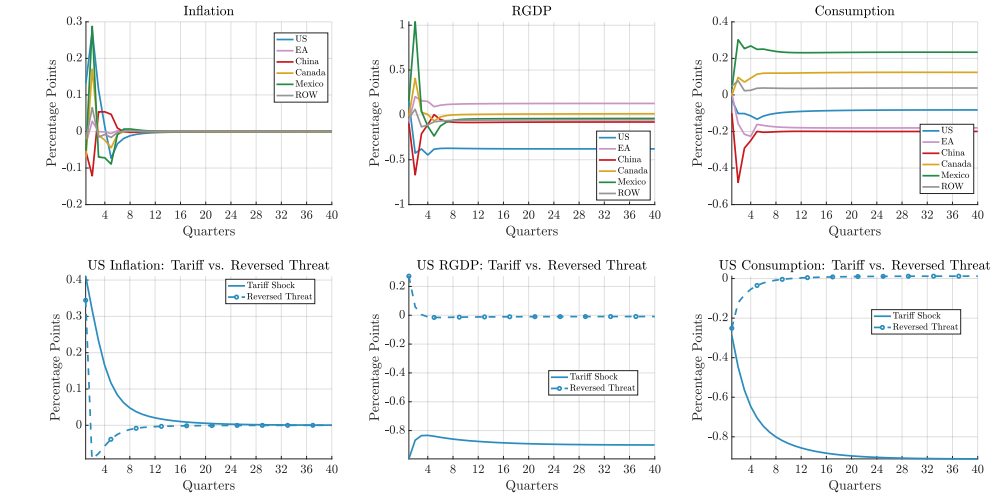
Reality

Global trade and production network—Interconnected and complex



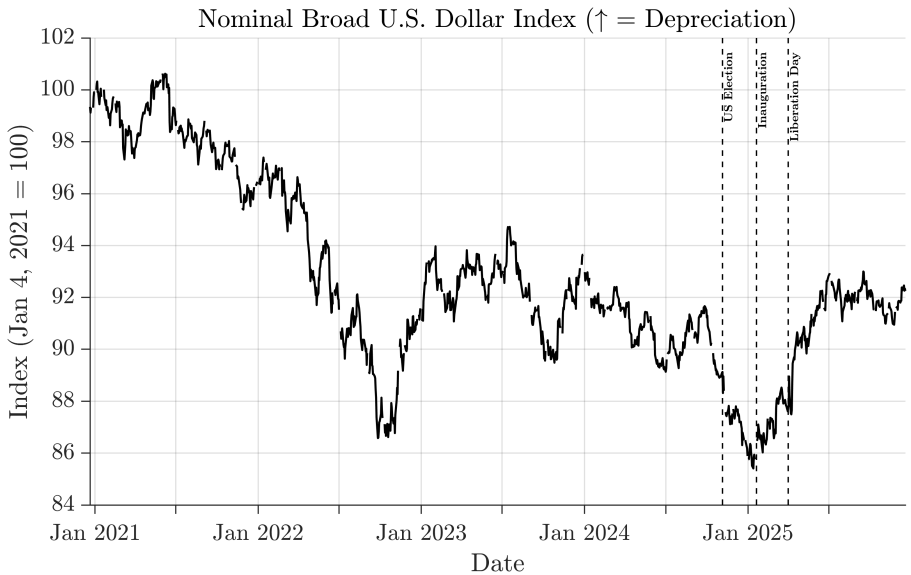
Source: OECD ICIO

2025-2026 implemented tariffs



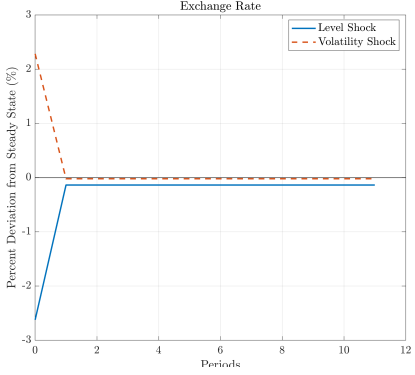
- **U.S. aggregate effects.**: Real GDP: +0.15% on impact, –0.4% in subsequent periods, Inflation: +0.13pp.
- **Reversed threats.** Sizeable macro effects: Inflation +0.34pp. Consumption –0.25%. Real GDP +0.27%.

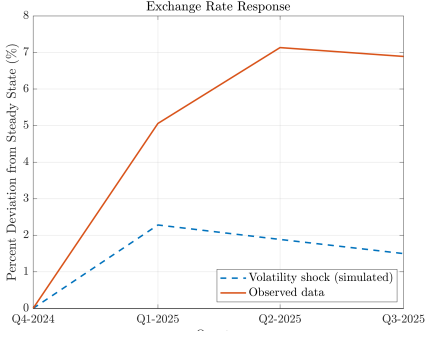
Why did dollar depreciated after 'Liberation Day'?



Tariff vs Tariff Volatility Impact on Exchange Rate

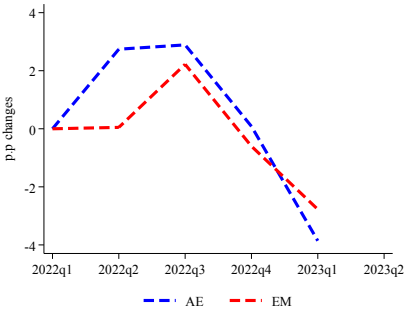
$$\hat{\mathcal{E}}_t = \underbrace{\left(\left(R_H^{-1} - \frac{1}{2}\right)(1-2\gamma)^2 - \frac{1}{2}\right)}_{<0} \hat{\tau}_t + \underbrace{R_H^{-1}(1-2\gamma)^2(\eta+\kappa)}_{>0} \sigma_t^2 + \underbrace{\frac{(1-R_H^{-1})(1-2\gamma)^2}{\gamma}}_{>0} \hat{V}_{H,t-1}$$

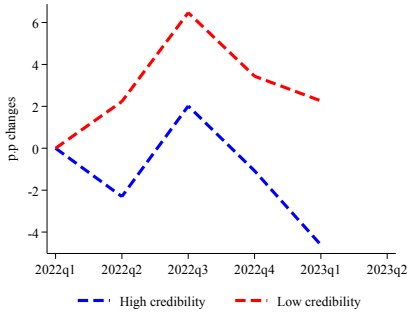




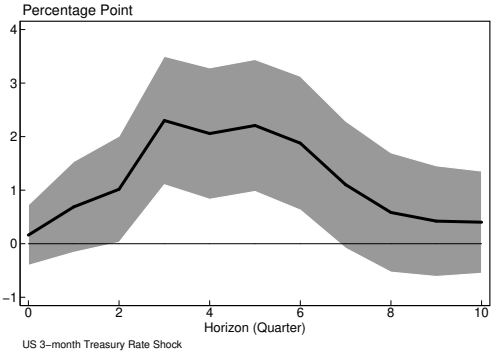
International Transmission

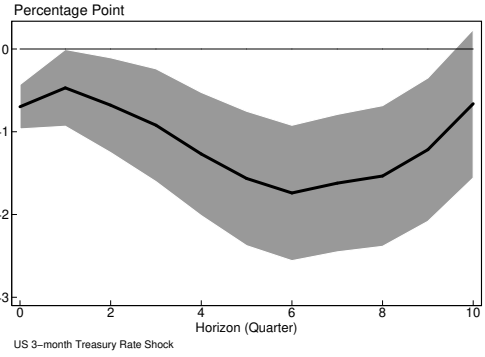
Exchange Rates during 2022-2023 US-FED Tightening





EM vs AE Government Spreads w/ US Monetary Policy Shocks





Takeaways

The open-economy and network dimensions are both important for the impact of geopolitical tools, as tariffs, on domestic macro outcomes

1. The risk-sharing wedge $\hat{w}_t$

Summarizes wealth transfers, shaped by trade and finance network.

2. The NKOE propagation matrix Ψ^{NKOE}

Persistence of real marginal cost distortions. N-country monetary policy + exchange-rate adjustment do not suffice.

1. **Implemented U.S. tariffs (2025-2026): MODEST, hurting the U.S., trade diversion to Europe—if liberation day tariffs were to pass, result would be global stagflation.**
2. **Models without I-O linkages overstate inflation and understate output decline.**
   - Back to Kindleberger vs Hirshman: Network centrality and granularity can give stabilization and weaponization at the same time for macroeconomic outcomes.

https://www.globallinkages.org/

Global Linkages Lab at Brown University

Thank you!