

Openness, Integration, and the International Monetary Order

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Motivation

- U.S. dollar's role as the world's anchor currency has recently come into question Rogoff (2025)
- April 2025 tariff announcements: dollar depreciated markedly even as global stress spiked, U.S. rates rose, stock prices fell Jiang et al. (2025)

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This Paper:

1. Better understand the economic forces underpinning the dollar's role as the linchpin of global finance
2. Study these forces as policy tools available to Europe:
under what conditions would the **euro** emerge as the world's anchor currency?

A Standard Model of Exchange Rate Determination

- Two periods: $t = 1, 2$; Unit mass of households split into N countries of measure θ^n . U.S. is the largest.
- Households invest in $t = 1$, consume in $t = 2$

$$U(i) = \frac{1}{1-\gamma} \mathbb{E} [C_2(i, \omega)^{1-\gamma}],$$

where $\gamma > 1$ and

$$C_2(i, \omega) = C_{T,2}(i, \omega)^\alpha C_{N,2}(i, \omega)^{1-\alpha}$$

- Household owns firm producing local non-traded good

$$Y_{N,2}(i, \omega) = \exp(\eta^n) K(i)^\nu$$

- One unit of capital per household initially; freely shipped at $t = 1$ only
- One unit of traded consumption good (numeraire); freely shipped anytime

Model Solution

- Country-specific supply and monetary shocks

$$\eta^n \sim N\left(-\frac{1}{2}\sigma_N^2, \sigma_N^2\right), \quad \mu^n \sim N\left(\frac{1}{2}\sigma_\mu^2, \sigma_\mu^2\right)$$

- Market segmentation:** financiers (ψ) trade stocks/bonds internationally; consumers ($1 - \psi$) hold own-country nominal bond paying $P^n e^{-\mu^n}$

Alvarez, Atkeson & Kehoe (2002); Gabaix & Maggiori (2015); Fanelli & Straub (2021)

- Households/firms are price-takers; markets clear

$$\sum_n \theta^n K^n = 1, \quad \sum_n \theta^n C_{T,agg}^n(\omega) = 1, \quad C_{N,agg}^n(\omega) = Y_{N,2}^n(\omega) \quad \forall n$$

where $C_{agg}^n = \psi C^n + (1 - \psi)\hat{C}^n$

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⇒ Monetary shocks redistribute wealth between consumers and financiers

⇒ Take first order conditions, log-linearize.

Key Mechanism: Dollar Safety

- Currencies appreciate when supply is low (low y_N^n) or inflation surprises low (low μ^n):

$$\bar{s}^{n*} = -\frac{\gamma(1-\alpha)}{\psi(1-\alpha) + \gamma\alpha} y_N^n - \frac{\gamma(1-\psi)(1-\alpha)}{\psi(1-\alpha) + \gamma\alpha} \mu^n$$

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- Appreciation \Rightarrow higher traded goods demand per capita

$$c_T^{n*} = \frac{(1-\alpha)(\gamma-\psi)}{\psi(1-\alpha) + \gamma\alpha} (\bar{y}_N - y_N^n) + \frac{\gamma(1-\psi)}{\psi(1-\alpha) + \gamma\alpha} (\bar{\mu} - \mu^n),$$

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- Shocks to large countries have outsized impact on world traded goods price (SDF)

$$\lambda_T^* = -\frac{(\gamma-\psi)(1-\alpha)}{\psi} \sum_j \theta^j y_N^j - \frac{\gamma(1-\psi)}{\psi} \sum_j \theta^j \mu^j$$

\Rightarrow U.S. dollar appreciates when traded goods are expensive. Other currencies less so.

Dollar Safety Underpins U.S. Exorbitant Privilege

⇒ Dollar is the **safest currency** — safety increases with country size:

$$\text{cov} [\lambda_T^*, p^{n*} - p^{f*}] = (\theta^n - \theta^f) [A \sigma_N^2 + B \sigma_\mu^2], \quad A, B > 0$$

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⇒ Large economies have **lower interest rates** — U.S. exorbitant privilege Hassan (2013):

$$r^{f*} + \Delta \mathbb{E} s^{f,n*} - r^{n*} = \text{cov} [\lambda_T^*, p^{n*} - p^{f*}]$$

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⇒ **Higher firm values, more capital:** U.S. dividends worth most in global bad states
⇒ lower cost of capital, disproportionate international investment

- Central bank of country m stabilizes its real exchange rate against a target \mathcal{T} :

$$\text{var} [s^{\mathcal{T},m}] = (1 - \Omega^{\mathcal{T},m})^2 \text{var} [s^{\mathcal{T},m*}], \quad \Omega = 1: \text{hard peg}, \quad \Omega = 0: \text{float}$$

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- Stabilizer **inherits** the anchor's safety: lower rates, higher firm values, more capital
- Self-financing for small countries (paid to insure the anchor);
costly for large countries (interventions move world prices)

Optimal Stabilization and the Anchor Currency (Hassan, Mertens & Zhang, 2023)

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- ⇒ Small peg tightly, intermediate loosely, the largest float — all pick the **largest** economy: a dollar-centric system, **endogenously**

We calibrate model to 1984 – 2019 period

Parameter	Value	Source
Capital share (ν)	0.33	Standard
Risk aversion (γ)	4.5	Standard
Country sizes (θ^n)	GDP shares	Penn WT
Jointly calibrated		
Financier share (ψ)	0.03	
Traded consumption share (α)	0.45	
Supply shock vol. (σ_N)	0.03	
Monetary shock vol. (σ_μ)	0.01	

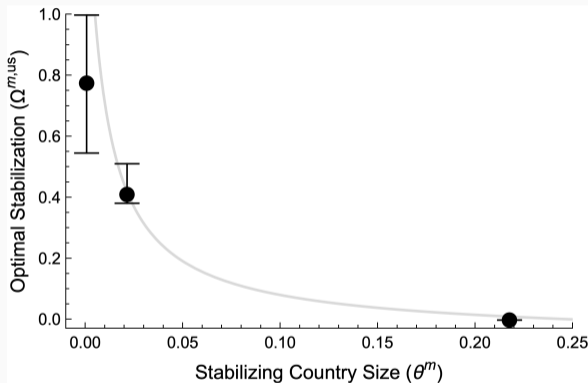
Target moment	Data	Model
Interest rate difference (USA–ANZ, pp)	–2.84 [–3.35, –2.33]	–2.77
Currency excess return (USA–ANZ, pp)	–3.18 [–4.47, –1.89]	–2.77
Strength of stabilization ($\Omega^{\mathcal{T},m}$)		
Small economies (< 1% of world GDP)	0.78 (0.54, 1.00)	1.00
Intermediate (1–10% of world GDP)	0.41 (0.33, 0.42)	0.42
Large (> 10% of world GDP)	0.00 (0.00, 0.00)	0.01

95% CIs in brackets; interquartile ranges in parentheses.

Sources: Ilzetzki, Reinhart & Rogoff (2019); Hassan & Mano (2019); authors' calculations

- Quantitative exercises below use 2023 GDP shares (U.S. 26%, eurozone 15%, China 17%)

The Model Fits the Dollar-Centric System



- Line: model; dots: data
Ilzetzki et al. (2019)
- Almost everyone smaller than eurozone, Japan, China stabilizes
- Smaller countries stabilize more; largest float

- Dollar-centric system emerges from individually optimal choices

Main Findings

1. Currency safety and anchor status arise endogenously from **effective country size**: the weight of an economy's shocks in world prices. The largest integrated economy anchors the system.
2. EU integration and enlargement raise the euro's effective size from 15% to 24% — the tariff threshold at which the euro overtakes the dollar falls from 26% to 6%.
3. A transatlantic bloc erodes both currencies' safety and leaves the door open for a third currency.
4. Capital controls are tariffs on the financial side: they take the renminbi out of the race today. Liberalization \Rightarrow a three-way contest.

Policy and Effective Country Size

- **Effective size** $\tilde{\theta}^n$: GDP share delivering the same currency safety in the frictionless baseline — one statistic for any policy configuration
- Tariff τ^n (met with retaliation) \Rightarrow wedge between home and world traded-goods prices:

$$\lambda_T^n = \lambda_T + \tau^n c_{T,agg}^n$$

- Home shocks transmit less than one-for-one to world prices (complete markets):

$$\tilde{\theta}^n = \frac{(1 - \alpha) + \gamma\alpha}{(1 - \alpha) + \gamma\alpha + (1 - \theta^n)\tau^n} \theta^n < \theta^n, \quad \tilde{\theta}^f > \theta^f \quad \forall f \neq n$$

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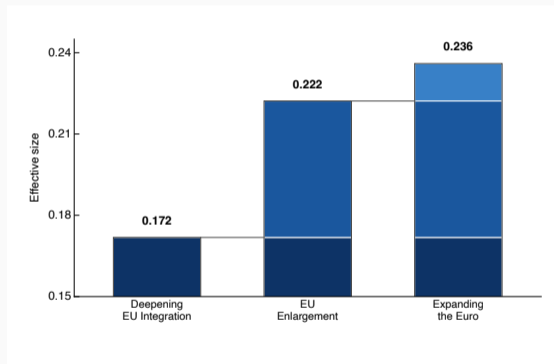
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\Rightarrow Tariffs shrink effective size; autarky drives it to zero — no safety premium

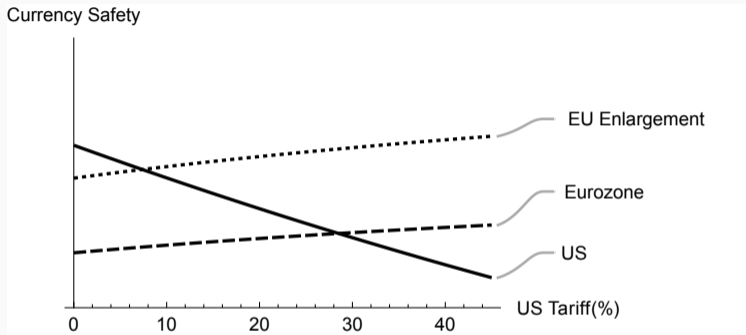
\Rightarrow Capital controls shrink effective size; integration expands it

Lever 1: European integration broadens the appeal of euro as anchor currency



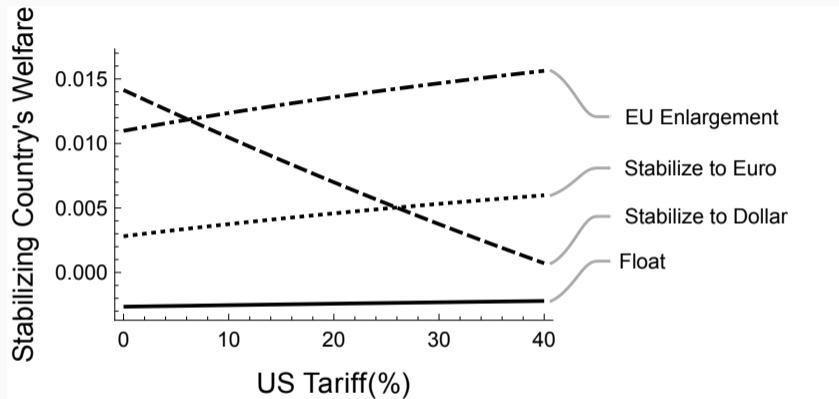
- Real integration = correlated supply shocks; euro adoption = a shared monetary shock
- Eurozone today: 15% of world GDP (U.S.: 26%)
 - deep EU integration: **17.2%**
 - + UK, EFTA, accession countries: **22.2%**
 - + all adopt the euro: **23.6%**
- ~80% of the gain from real-side integration

Lever 2 (Trade): When Does the Euro Overtake the Dollar?



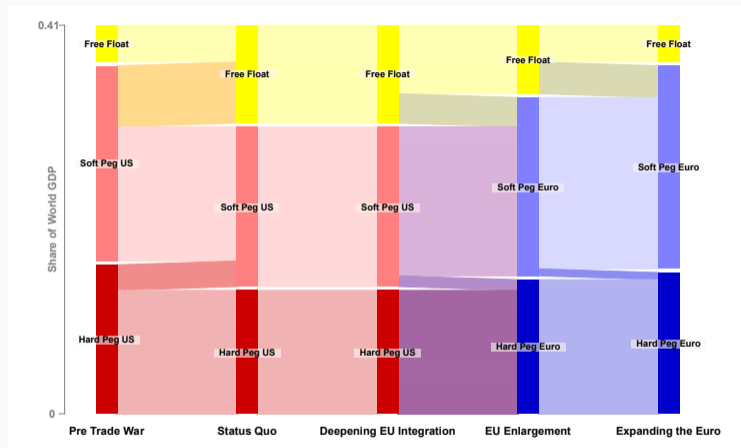
- U.S. tariffs erode dollar safety; the euro gains as Europe stays open
- Euro overtakes at $\tau^{US} = 26\%$ at current eurozone size
 - at **6%** for an integrated, enlarged Europe

Anchor Choice of a Small Open Economy



- Welfare of a small stabilizer under each anchor choice
- Past the threshold: euro peg dominates dollar peg

A Phase Shift in the International Monetary System



- 12% U.S. tariffs weaken but do not break the dollar anchor
- EU enlargement → the euro supplants the dollar as the principal anchor

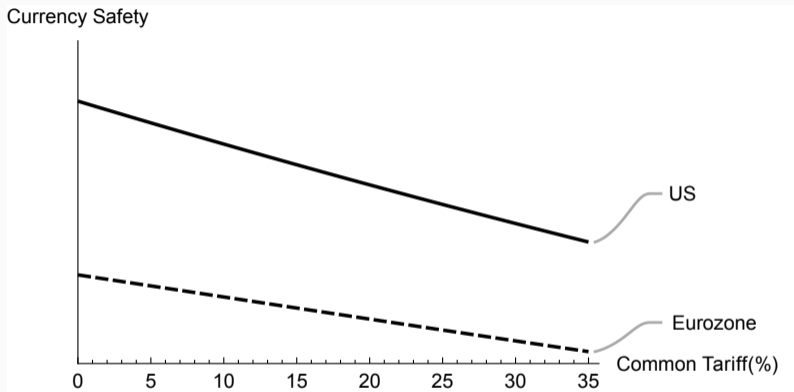
	Δ Interest rate	Δ Capital stock	Δ Wages	Δ Annual interest bill
U.S.: 12% tariff	+0.42 pp	-0.38%	-0.13%	+\$159 bn
Eurozone: stays open	-0.10 pp	+0.11%	+0.04%	-€14 bn
Eurozone: + EU enlargement	-0.67 pp	+0.74%	+0.25%	-€93 bn (additional)

- Debt outstanding 2025Q3: U.S. \$37.6tn, EU €13.9tn
- Safety-premium channel only — excludes trade diversion, reduced competition

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3. A transatlantic bloc erodes both currencies' safety and leaves the door open for a third currency.
4. Capital controls are tariffs on the financial side: they take the renminbi out of the race today. Liberalization \Rightarrow a three-way contest.

Transatlantic Bloc Reduces Appeal of Dollar and Euro as Anchors



- Common external tariff: **both** currencies lose safety — curves converge, never cross
- At 12%: U.S. rates +0.34 pp, EU rates +0.18 pp; the door opens for third currencies

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Lever 3 (Capital): Capital Controls Behave Like Tariffs on the Financial Side

- Cross-border portfolios *finance* trade flows:
current account requires a matching financial account
- No cross-border claims \Rightarrow financial account = 0 \Rightarrow current account = 0:
domestic shocks never reach world prices

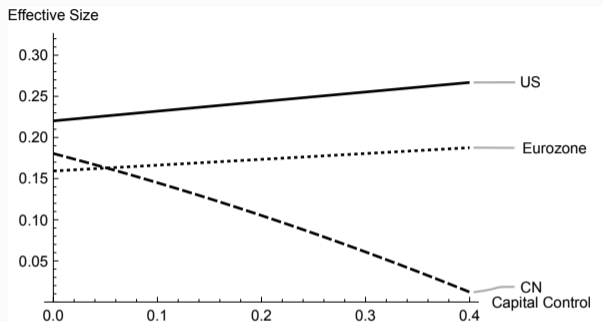
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domestic shocks never reach world prices
- Formally: controls cap the current account (Costinot, Lorenzoni, and Werning, 2014),

$$c_{T,agg}^{CN} = (1 - \kappa^{CN}) c_{T,agg}^{CN*}, \quad \kappa^{CN} = 1: \text{closed}, \quad \kappa^{CN} = 0: \text{open}$$

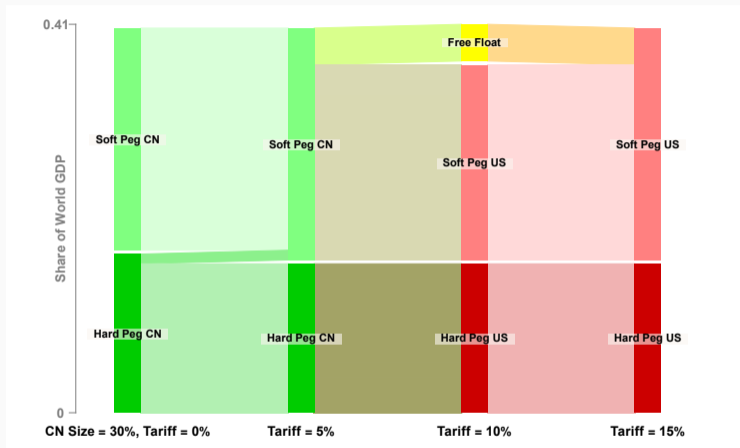
- Each κ^{CN} equivalent to a tariff $\tau^{CN} > 0$ on Chinese imports and exports
- \Rightarrow Capital controls shrink China's effective size exactly as tariffs would

Even Modest Capital Controls Disqualify an Anchor



- At $\kappa^{CN} = 0$: effective size = GDP share (17%); collapses as controls tighten
- Chinn–Ito openness (2023): China 0.13; U.S. and eurozone ≈ 1 Chinn & Ito (2006)
- In the data: no country anchors to the renminbi; $\sim 28\%$ of countries (15% of world GDP) anchor to the euro Ilzetzki et al. (2019)

If China Liberalizes: A Three-Way Race



- Scenario: China grows to 30% of world GDP, opens fully \Rightarrow renminbi is anchor
- Joint tariff on China: 5% weakens the renminbi anchor; 10% restores the dollar

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Conclusion

- Currency safety follows **effective size** — the issuer's weight in world prices; anchor status follows safety
- Europe's three levers, ranked by European control:
 1. **Integration & enlargement**: within European reach — may suffice on its own, given $\approx 12\%$ U.S. tariffs and a closed Chinese capital account
 2. **Trade openness**: the euro's edge — a transatlantic bloc squanders it; a U.S. return to free trade reverses it
 3. **Capital-account openness**: excludes the renminbi today — Chinese liberalization is the main risk
- Fiscal stakes: hundreds of billions per year in debt-servicing costs
- Institutional pillars (Treasury depth, payments, alliances): complements, not substitutes