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 $t = 2$

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

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

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

- **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)

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$\Rightarrow$ Monetary shocks redistribute wealth between consumers and financiers

- Households/firms are price-takers; markets clear

$$\sum_n \theta^n K^n = 1, \qquad \sum_n \theta^n C^n_{T,agg}(\omega) = 1, \qquad C^n_{N,agg}(\omega) = Y^n_{N,2}(\omega) \ \forall n$$

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

$\Rightarrow$ 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

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

where $\bar{y}_N = \sum_j \theta^j y_N^j$ and $\bar{\mu} = \sum_j \theta^j \mu^j$

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  where $\bar{y}_N = \sum_j \theta^j y_N^j$ and $\bar{\mu} = \sum_j \theta^j \mu^j$
- 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

$\Rightarrow$ Dollar is the **safest currency** — safety increases with country size:

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

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

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

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

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

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

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

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- Costly for large countries (interventions move world prices)

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$\Rightarrow$ 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	

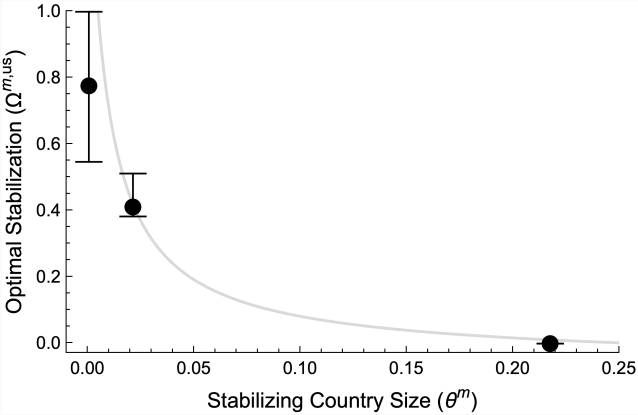
Target moment	Data	Model
Interest rate difference (USA−ANZ, pp)	-2.84 $[-3.35, -2.33]$	-2.77
Currency excess return (USA−ANZ, pp)	-3.18 $[-4.47, -1.89]$	-2.77
Strength of stabilization ($\Omega^{\mathcal{T},m}$)		
Small economies ($< 1\%$ of world GDP)	0.78 (0.54, 1.00)	1.00
Intermediate (1–10% of world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

- 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

Trade Policies Affect Anchor Currency Status (Hassan, Mertens, Wang and Zhang, 2025)

- Safety and anchor status determined by **effective size** $\tilde{\theta}^n$.
- What happens if the U.S. imposes a tariff τ on imports and others retaliate?

$\Rightarrow$ Wedge between home and world traded-goods prices:

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

$\Rightarrow$ $\tau > 0$ dampens U.S. shock effects on world market.

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$\Rightarrow$ Trade war reduces U.S. effective country size:

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

$\Rightarrow$ Tariffs reduce dollar safety and incentives to stabilize to the dollar

Main Findings

1. Currency safety and anchor status arise endogenously from the **weight of an economy's shocks in world prices**. The largest integrated economy anchors the system.

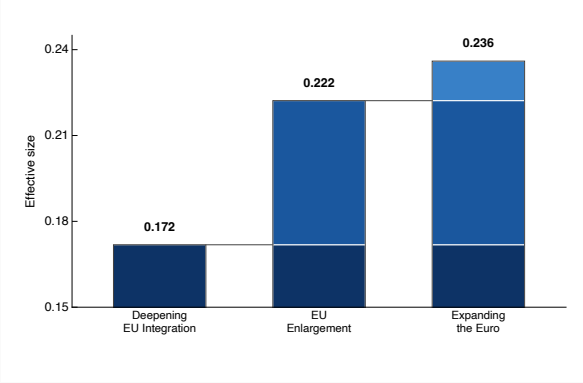
2. Trade barriers reduce the weight of an economy's shocks in world prices and reduce its anchor status.

3. 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%.

4. A transatlantic bloc erodes both currencies' safety and leaves the door open for a third currency.

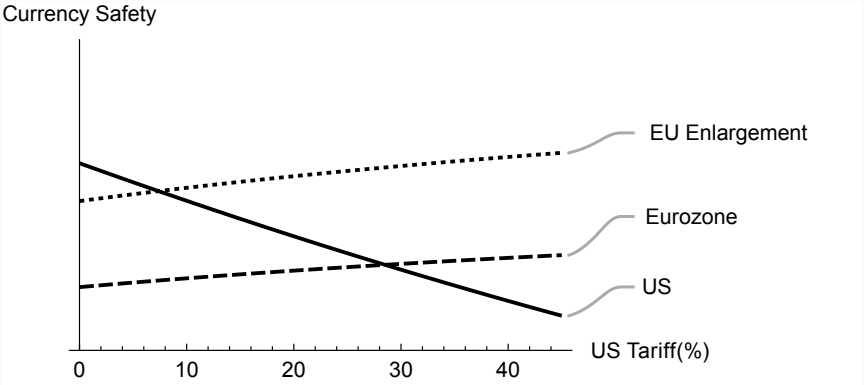
5. Capital controls act as tariffs on the financial side: they take the renminbi out of the race today. Chinese liberalization can lead to a three-way contest.

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



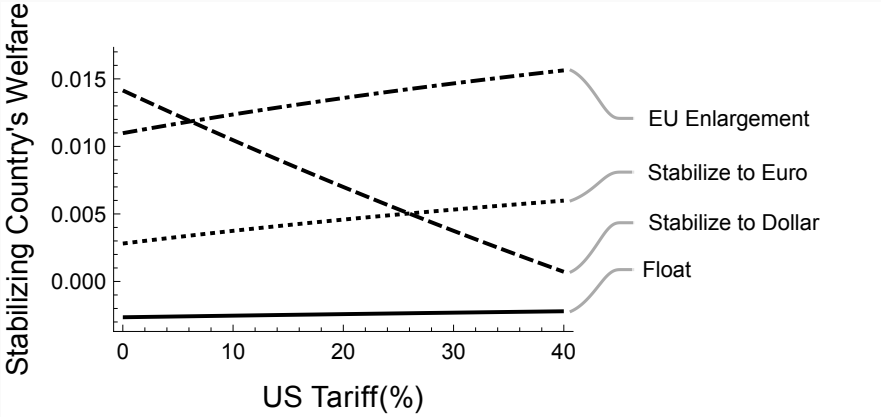
- Real integration = correlated supply shocks; euro adoption = a shared monetary shock
- Eurozone today: 15% of world GDP (U.S.: 26%)
  - → deep EU integration: **17.2%**
  - → + UK, EFTA, accession countries: **22.2%**
  - → + all adopt the euro: **23.6%**
- ∼80% of the gain from real-side integration

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



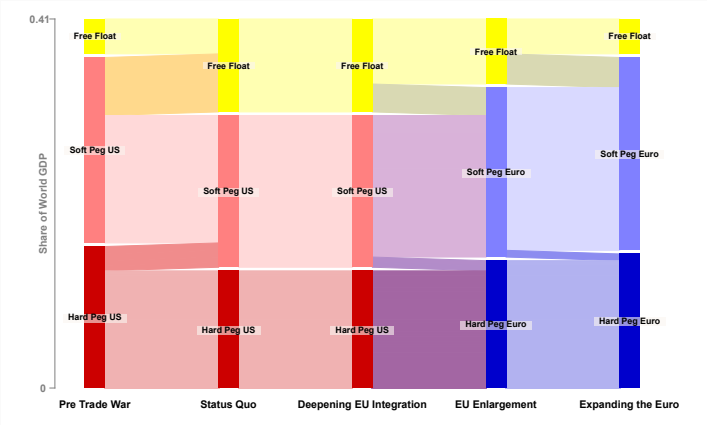
- U.S. tariffs erode dollar safety; the euro gains as Europe stays open
- Euro overtakes at $\tau^{US} = 26\%$ at current eurozone size
  — at **6%** for an integrated, enlarged Europe

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 $\rightarrow$ the euro supplants the dollar as the principal anchor

Fiscal Stakes

	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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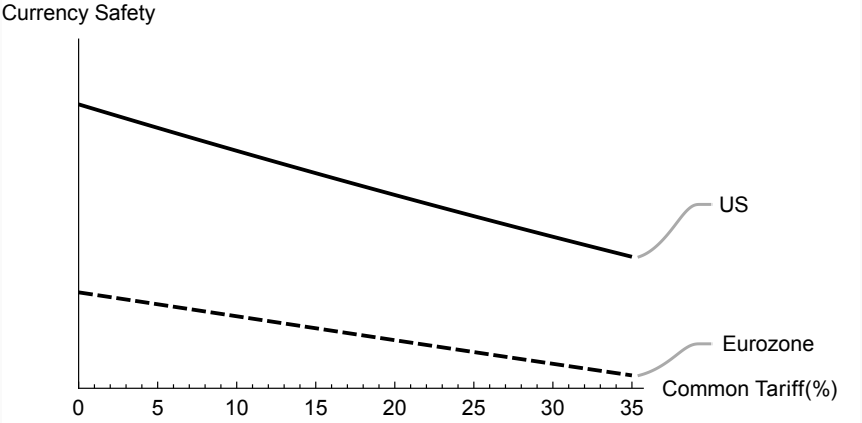
Transatlantic Bloc Reduces Appeal of Dollar and Euro as Anchors



- 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

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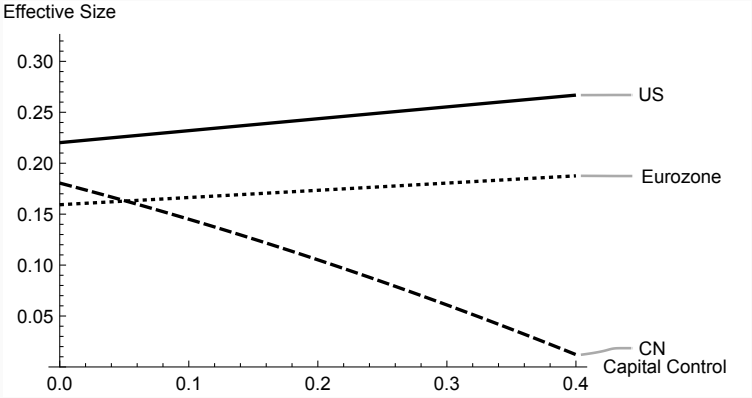
  current account requires a matching financial account
- Formally: controls cap the current account (Costinot, Lorenzoni, and Werning, 2014),

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

- Each κ^{CN} equivalent to a tariff $\tau^{CN} > 0$ on Chinese imports and exports

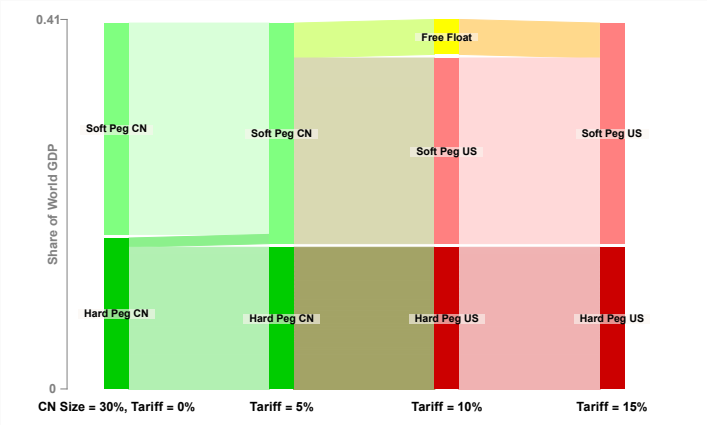
$\Rightarrow$ Capital controls shrink China's effective size exactly as tariffs would

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)

If China Liberalizes: A Three-Way Race



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

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Conclusion: A Policy Roadmap for the Euro

- We presented a risk-based view of anchor currency status grounded in the **size and openness** of the issuing economy
- Three policy levers act on the effective size of the euro, in order of European control:
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- Fiscal stakes are large: safe-haven status moves debt-servicing costs by **hundreds of billions per year**