# Trade War and the Dollar Anchor

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# Motivation

- ▶ Since "Liberation Day" tariffs, concerns about U.S. dollar's global role:
    - Drop in correlation with measures of global stress.
    - Steep depreciation relative to foreign currencies.
    - Retrenchment away from U.S. stocks.
    - Increase in U.S. long-term yields.
- ▶ Is dollar's global role sensitive to U.S. trade policy?
- ▶ Is U.S. "exorbitant privilege" at risk?

This Paper:

1. Risk-based model of dollar's role as safe-haven and anchor currency.
2. Evaluate effects of trade war on international monetary system, U.S. anchor, and U.S. financial privileges.

# Main Findings

1. Dollar safety (safe-haven status) underpins America's key financial privileges:
   - U.S. dollar's anchor status at center of world monetary system.
   - Low U.S. interest rates and currency returns.
   - Low cost of capital for U.S. firms.
   - U.S. attracts disproportionate share of international investment.

2. Dollar safety relies critically on free trade. Loss of free trade makes dollar less safe.

3. Trade war erodes America's financial privileges: drives up U.S. interest rates, triggers capital outflows, and prompts foreign countries to loosen or drop stabilization towards the U.S. dollar anchor.

4. Current tariffs have already raised U.S. rates by 0.5pp. Tariffs exceeding 26% trigger phase-shift towards euro anchor.

# Contribution

- ▶ Models of dollar dominance: Sovereign debt Farhi & Maggiori, 2017; He & al., 2019, trade financing Charhour & Valchev, 2022, invoicing Gopinath & Stein, 2019, safe haven, anchor Hassan et al. (2022)
- → Quantitative model of safe-haven and anchor properties.
- ▶ Risk and safety as determinants interest rates, capital flows Lustig & al. 2011; Colacito & al. 2012, 2018; Hassan, 2013; Maggiori, 2017; Richmond, 2019; Miranda-Agrippino & Rey, 2020; Akinciet al., 2022; Bai et al., 2024.
- → Demonstrate dollar's safety depends on trade policy.
- ▶ Economic effects of U.S. tariffs and economic nationalism Rogoff, 2025; Bianchi and Coulibaly, 2025; Werning et al., 2025; Bergin and Corsetti, 2025; Itskhoki and Mukhin, 2025; Dávila et al., 2025; Chahrour and Valchev, 2024
- → Show the implications of trade policy on the international monetary system.
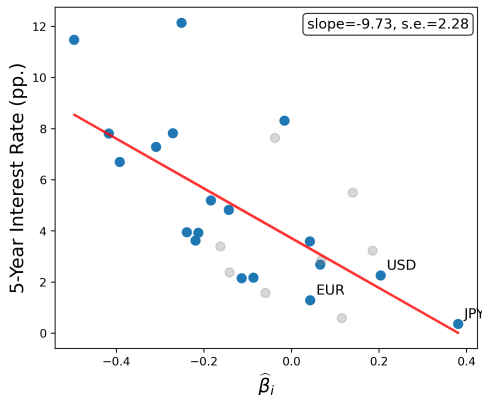
# Outline

# Fact 1: U.S. Dollar Safety



$$\Delta \bar{s}_{\$,t} = \alpha + \beta_\$ \Delta \log GlobalRisk_t + \epsilon_{\$,t}$$

slope=0.16, s.e.=0.07
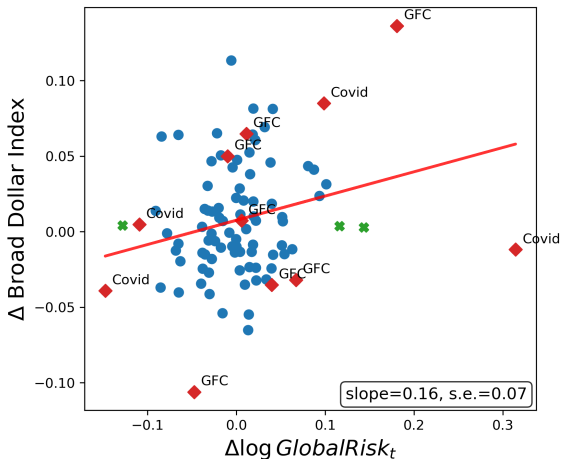
- ▶ U.S. dollar, significantly appreciates in times of global stress.
- ▶ Did not appreciate during 2025 tariff crisis (green crosses).

# Fact 2: Safe Currencies have Low Interest Rates



- ▶ Heterogeneity in currencies' loadings on GlobalRisk (safety) explains cross-country differences in interest rates, currency returns. Lustig & Verdelhan, 2007; Lustig et al. (2011); Menkhoff et al. (2012); ...

- ▶ **Fact 3:** Firms in countries with lower interest rates have lower cost of capital, higher MPK. Richers (2023); di Giovanni et al. (2022); ...
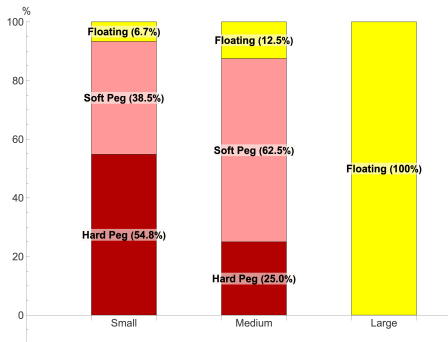
# Fact 4: U.S. Dollar Anchor (Ilzetzki, Reinhart, Rogoff, 2019)

(a) Two-thirds of countries stabilize currency to USD
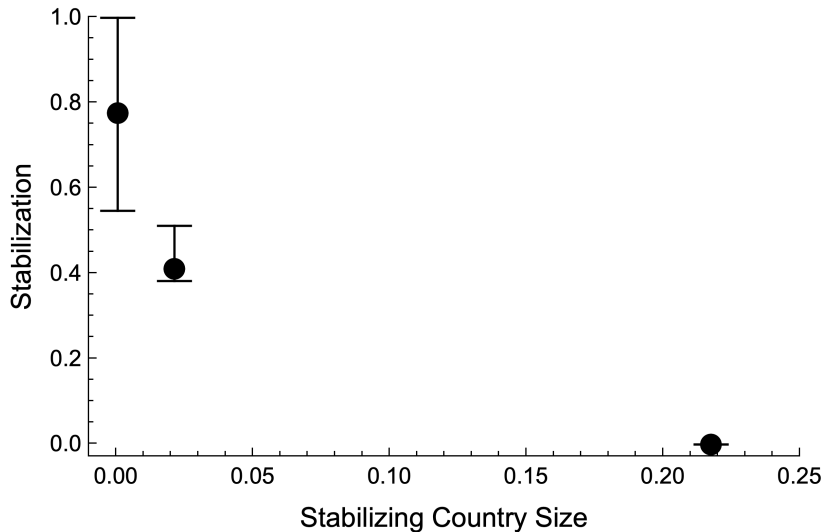
(b) Only large economies float

(c) Smaller economies stabilize; Strictness of stabilization decreases with size.

(d) Stabilizing countries have lower interest rates, their currencies pay lower returns, and their firms produce with relatively more capital than those that do not. (Hassan, Mertens, Zhang, 2022)

# Fact 4: U.S. Dollar Anchor (Ilzetzki, Reinhart, Rogoff, 2019)

# Outline

# Setup (1/2)

- Two periods: $t = 1, 2$;
- Unit measure of households partitioned into $N$ countries of measure $\theta^n$, $n = us, eu, ...$ U.S. largest country.
- Households invest in $t = 1$, all consumption in $t = 2$

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

where $\gamma > 1$ and

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

- Each household owns a firm that produces local non-traded good.

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

- Each firm owns one unit of capital initially. Can be freely shipped at $t = 1$ only.
- Each household endowed with one unit of the homogeneous traded consumption good (numeraire), freely shipped anytime.

# Setup (2/2)

- State $\omega$ characterized by country-specific shocks to local demand and supply

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

- **Key assumption:** Households trade stocks and country-specific risk-free bonds in world financial market (markets span $\omega$ but not policy decisions).

- **In the paper:** Stocks and bonds traded exclusively by financier households (measure $\psi$), consumer households only hold their own country's bond. (Gabaix & Maggiori, Itskhoki & Mukhin)

- Households and firms take prices as given, markets clear.

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

# Key Mechanism: Dollar Safety

- ▶ Lowercase variables denote logs.
- ▶ All countries appreciate when domestic demand "outstrips" supply (high $\chi^n$ or low $y_N^n$). Country $n$'s average log real exchange rate:

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

- ▶ When they appreciate they also demand (absorb) more traded goods per capita.

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

where $\bar{y}_N = \sum_n \theta^n y_N^n$ and $\bar{\chi}_N = \sum_n \theta^n \chi^n$.

⇒ All countries absorb more traded goods per capita when their currencies appreciate.

# Key Mechanism: Dollar Safety

▶ Shocks that appreciate large countries have an outsized impact on the world's price of traded goods (the SDF)

$$\lambda_T^* = -(\gamma - 1)(1 - \alpha) \sum_n \theta^n y_N^n + (\gamma - 1) \sum_n \theta^n \chi^n.$$

▶ The U.S. is special because it is big: It consumes a large share of the world's traded goods when it appreciates. (Other countries do not.)

⇒ **Fact 1**: Dollar Safety. U.S. dollar appreciates in times of global stress, safest currency in the world:

$$\text{cov}(\bar{s}^{US*}, \lambda_T^*) > \text{cov}(\bar{s}^{n*}, \lambda_T^*), \ \forall n \neq US$$

⇒ **Fact 2:** Large economies have lower interest rates — U.S. exorbitant privilege Hassan (2013):

$$r^{n*} + \Delta\mathbb{E}s^{n,us*} - r^{us*} = \text{cov}\left(\bar{s}^{us*} - \bar{s}^{n*}, \lambda_T^*\right), \tag{1}$$

# Dollar Safety, U.S. Equity & Capital Inflows

▶ Because domestic firms produce nontraded goods that are consumed domestically, the value of local firms (dividends) co-moves with the real exchange rate.

$$p_N^{n*} + y_N^{n*} = \frac{(1-\alpha)(\gamma-1)}{(1-\alpha)+\gamma\alpha}(\bar{y}_N - y_N^n) - \frac{(\gamma-1)}{(1-\alpha)+\gamma\alpha}(\bar{\chi} - \chi^n).$$

⇒ **Fact 3:** U.S. firms have a lower cost of capital, are more valuable than foreign firms. Capital flows to the U.S. because U.S. firms are a safer investment than their foreign counterparts, accumulate more capital per capita.

▶ Conclusion: Dollar safety underpins the U.S. exorbitant privilege.

▶ What does a trade war do to dollar safety?

# Outline

# Dollar Safety in a Trade War

- ▶ U.S. imposes tariff $\tau$ on imports, other countries retaliate in equal measure (relax later).
- ▶ Once a traded good enters a country it becomes indistinguishable from domestically endowed units (LOP hold within the country).
- → Wedge between the price of traded goods in U.S. and ROW increasing in size of trade flow.

$$\lambda_T^u = \lambda_T + \tau c_T^u,$$

- ⇒ $\tau > 0$ dampens effect of U.S. shocks on the world market.
- ⇒ Reduces U.S. "effective country size."

$$\lambda_T = -(\gamma - 1)(1 - \alpha) \sum_n \bar{\theta}^n y_N^n + (\gamma - 1) \sum_n \bar{\theta}^n \chi^n$$

where

$$\bar{\theta}^u = \frac{(1 - \alpha) + \gamma \alpha}{(1 - \alpha) + \gamma \alpha + (1 - \theta^u)\tau} \theta^u < \theta^u$$

- ⇒ Trade war weakens dollar safety, erodes exorbitant privilege!

# Calibration

| Parameters | Value | Source |
|---|---|---|
| Size of Tariff ($\tau$) | 0.17 | Goldman S. (2025) |
| Capital Share ($\nu$) | 0.33 | Standard |
| Risk Aversion ($\gamma$) | 5.00 | Standard |
| GDP Share U.S. (1984–2019) | 0.27 | Penn WT |
| GDP Share Euro Zone (1984–2019) | 0.15 | Penn WT |
| **Calibrated Parameters** | | |
| Share of Financier Households ($\psi$) | 0.03 | |
| Share of Traded Consumption ($\alpha$) | 0.45 | |
| Supply Shock Volatility ($\sigma_N$) | 0.03 | |
| Demand Shock Volatility ($\sigma_\chi$) | 0.07 | |

# Targeted Moments (1984-2019)

|                                                        | Data                        | Model |
|--------------------------------------------------------|-----------------------------|-------|
| Interest Rate Difference<br>(USA - ANZ)(pp.)           | -2.48<br>[-2.73,-2.24]      | -2.70 |
| Currency Excess Return<br>(USA - ANZ)(pp.)             | -2.40<br>[-3.53,-1.28]      | -2.70 |
| Correlation of Exchange Rate<br>with Consumption Growth | -0.10<br>[-0.35,0.16]       | -0.07 |
| Standard Deviation of<br>Consumption Growth (%)        | 1.95<br>[1.62,2.29]         | 0.65  |

Evaluate fit relative to two sets of untargeted moments:

1. Market reactions April 1-15, 2025
2. Fit to structure of international FX arrangements (later)

# Untargeted Moments (1/2): Market Reactions

| | Data | Model | |
|---|---|---|---|
| **Changes in...** | Apr 2-15, 2025 | Full Retaliation | Full Retaliation |
| U.S. Interest Rate (USA-G10) (pp.) | 0.34 [-0.13,0.80] | 0.56 | 0.56 |
| U.S. Stock Prices (USA-G10) (pp.) | -4.66 [-7.32,-2.00] | -2.23 | -2.17 |
| U.S. dollar FX Vol. (%) | 8.20 [-,-] | 3.05 | 3.08 |
| Country Sizes | | 1984-2019 | 2023 |

▶ Trade war raises U.S. interest rates, lowers value of U.S. firms, and increases dollar's FX volatility.

# Implications of the Trade War

| Changes in... | Model | |
|---|---|---|
| Relative Capital Accumulation (U.S.-G10)(%) | -0.64 | -0.62 |
| Relative Wages (U.S.-G10) (%) | -0.21 | -0.21 |
| Correlation of Broad Dollar with $\lambda_T$ | -0.12 | -0.15 |
| Country Sizes | 1984–2019 | 2023 |

▶ Trade war reduces capital flows to U.S., U.S. wages, and correlation of dollar with SDF.
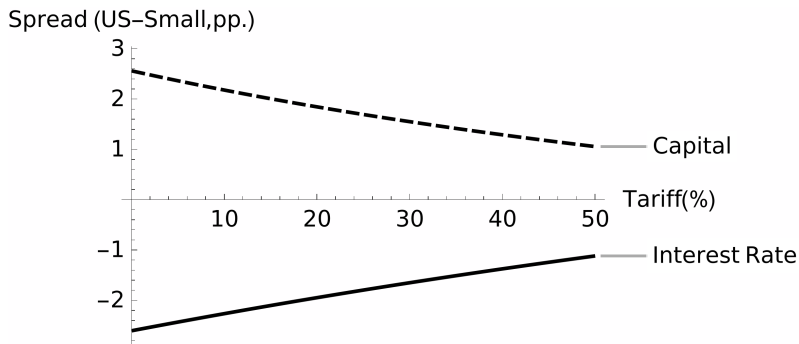
# Comparative Statics: Dollar Safety

**Correlation of each country's (broad) real exchange rate with $\lambda_T$**
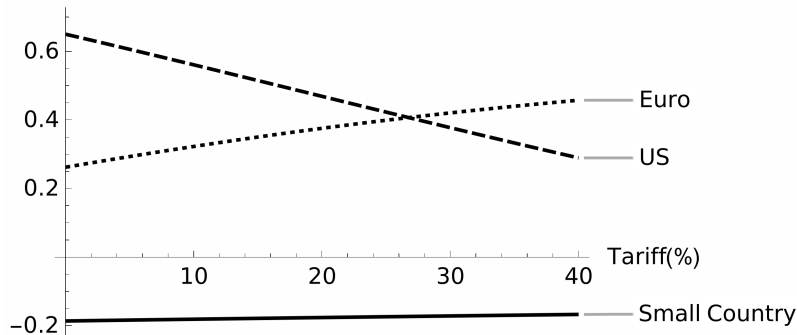


▶ Euro becomes world's safest currency at tariffs exceeding 26%.

# Comparative Statics: U.S. Interest Rates, Capital Intensity

# Partial Retaliation

▶ Numerically solve model to allow for partial retaliations. (Method from Mertens & Williams, 2021)

▶ Unclear how big retaliations have been since April. Estimate 17.0% tariff on U.S. imports, 7% tariff on U.S. exports.

▶ **Summary statistic: Average tariff on U.S. imports and exports.**
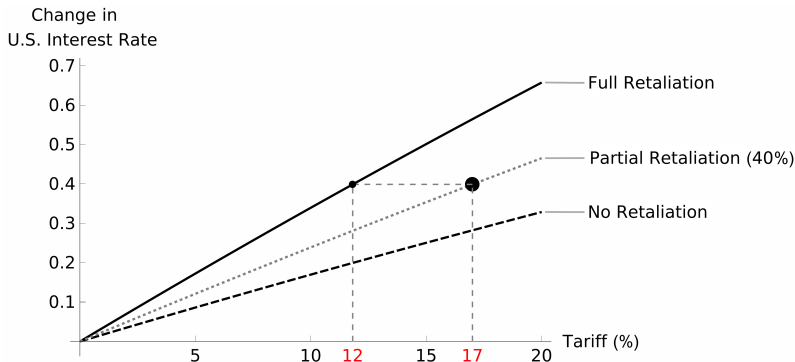
# Summary

- US dollar is the safest currency in the world because US shocks have a large effect on the world price of traded goods.
- Isolating the US goods market from world trade reduces these spill-overs and thus undermines dollar safety.
- A loss of dollar safety prompts higher interest rates, lower equity valuation, capital outflows.

# Outline

# Optimal Stabilizations (Hassan, Mertens, Zhang, 2022)

▶ Key insight: Small countries can inherit part of dollar's safety and financial privileges by stabilizing their real exchange rate relative to the U.S. dollar.

▶ Intervening to increase your country's $\text{cov}(\bar{s}^m, \lambda_T)$ lowers domestic interest rates, makes domestic firms move valuable (attracts investment), and thereby shifts a larger share of world wealth towards your country.

▶ Structure of international monetary system arises endogenously: Small optimally stabilize their exchange rate to the US dollar in order to attract investment.

# Optimal Stabilizations (Hassan, Mertens, Zhang, 2022)

**Extend model:**

- Each country's central bank can decide to stabilize its real exchange rate relative to a chosen target currency.

- Generally: Prices of traded goods are sticky in domestic currency, CB controls money supply, announces nominal exchange rate.

- Here (for simplicity): CB levies state-contingent tax on domestic price of traded goods $z(\omega)$ (=controls directly number of traded goods absorbed) such that

$$\mathsf{var}\left[s^{t,m}\right] = (1 - \Omega^{m,t})^2 \mathsf{var}\left[s^{t,m*}\right],$$

rebate proceeds lump-sum to domestic households.

- Choose target currency ($t$) and degree of stabilization ($\Omega$) to maximize local households' welfare.

# Optimal Stabilizations

▶ Can show: Stabilize by reducing domestic absorption whenever the target country appreciates.

$$c_T^m - c_T^{m*} \approx -\Omega^{m,t} \frac{(1 - \theta^m)}{\alpha\gamma} s^{t,m*}.$$

▶ Self-financing for small country stabilizing to a large country: sell traded goods when they are expensive.

▶ Expensive to do for large countries (impact on $\lambda_T$).

▶ Stabilization increases domestic volatility of consumption but also, lowers interest rates, increases world-market value of domestic firms, attracts investment.

# Optimal Stabilizations

Model replicates **Facts 4 a-d**

a. All countries that stabilize target the currency of the largest economy (the safest currency available).

b. Small countries optimally choose stricter stabilizations.

c. Larger countries find it costlier to stabilize because of their price impact, choose to float.

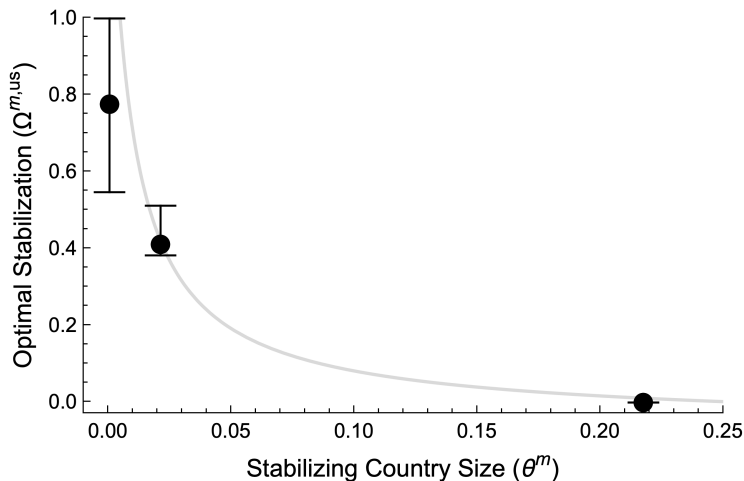d. Countries that stabilize lower their interest rates, increase capital inflows, lower local MPK.

# Calibrated Model: Optimal Stabilization to the US Dollar

▶ Predicts 100% of stabilizations target the U.S. dollar ($t = u$)

▶ Optimal $\Omega$ decreases in country size.
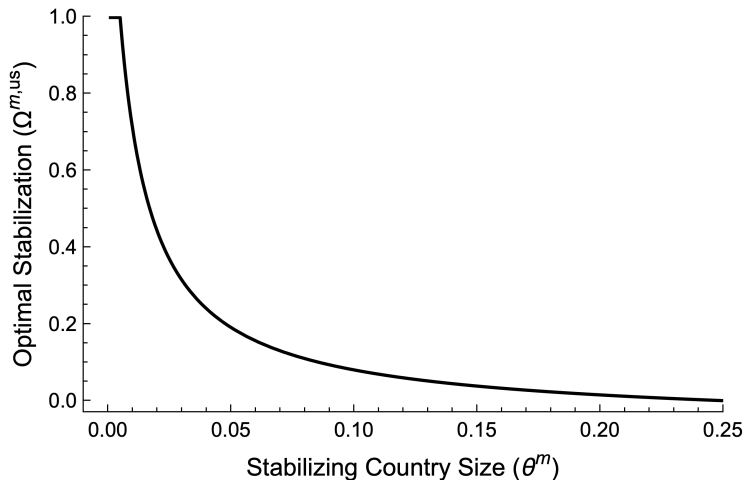
# Calibrated Model: Untargeted Moments (2/2)

Figure: **Data**
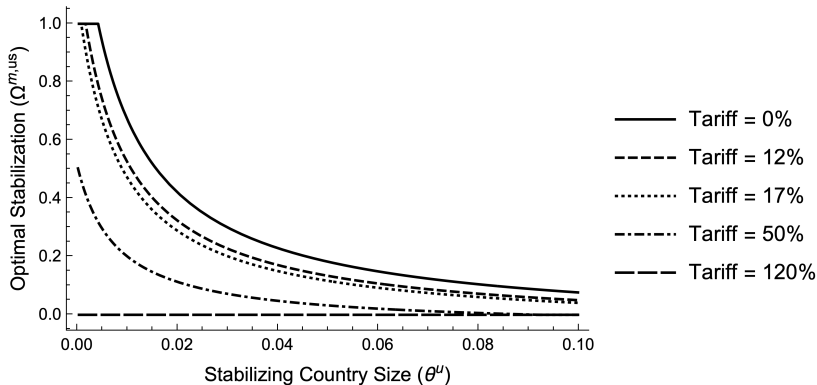


- Fits the structure of the world's monetary system almost perfectly!

# Outline

# Trade War and Optimal Stabilizations

▶ A trade war erodes dollar safety and thus makes it less attractive as an anchor.

$$\frac{d\Omega^{m,us}}{d\tau} < 0$$
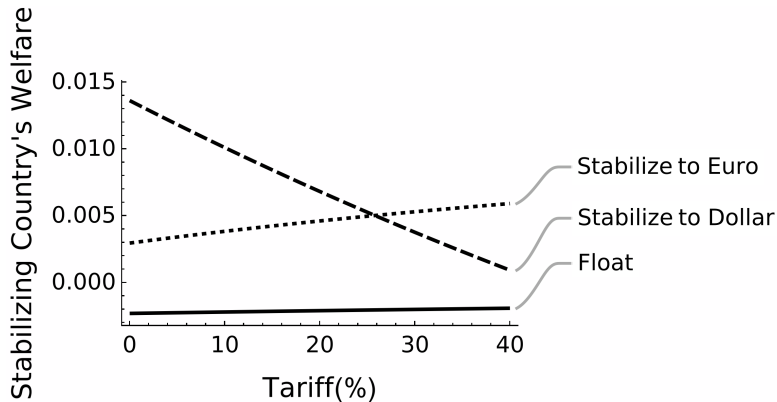
▶ Optimal stabilizations become looser.
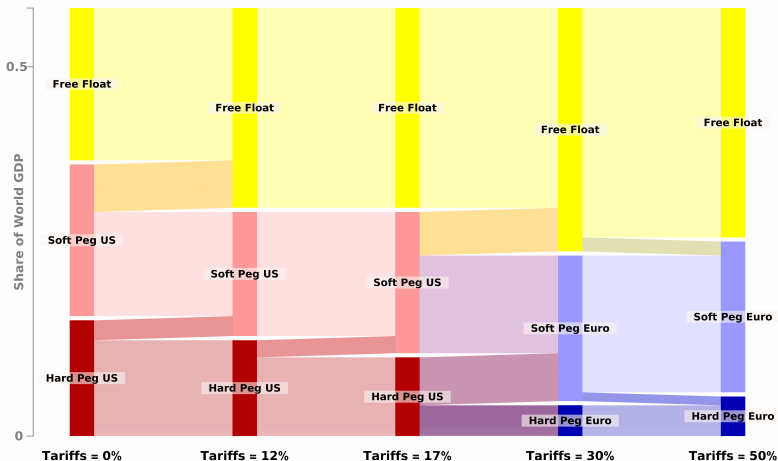
# Trade War and the Euro Anchor

▶ With rising tariffs, the euro area's effective country size increases relative to the United States.

▶ Euro becomes the optimal anchor currency in the world at tariffs exceeding 26%.

# Predicted Effect on the International Monetary System



▶ Phase shift to Euro anchor at average tariffs exceeding 26%

# Conclusion

▶ Introduced model where dollar safety and its role as anchor currency arise endogenously.

▶ U.S. dollar emerges as safest currency because shocks that affect the U.S. move a large share of global demand.

▶ This safe-haven feature is the key force that underpins U.S. exorbitant privilege, makes it anchor of global monetary system.

▶ Isolating U.S. from world's goods markets erodes dollar safety, and with it key financial privileges.

▶ Average tariff of 17% raises U.S. rates by 0.5pp, depreciates U.S. stocks relative to the rest of the world, and loosens the dollar block.

▶ Predict average tariffs exceeding 26% precipitate phase shift towards euro-centric world monetary system.