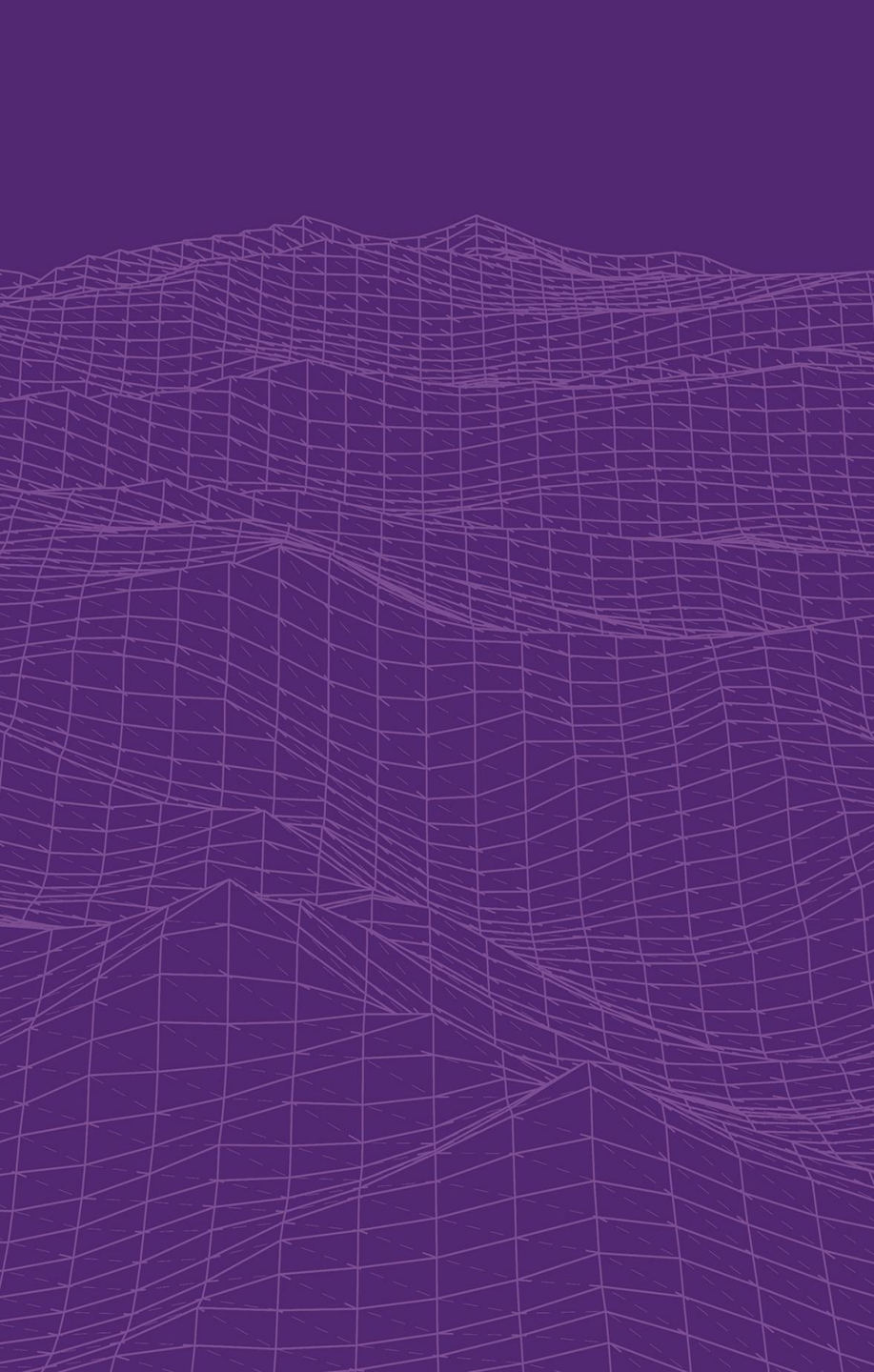




Global Spillovers from U.S. Bond Supply Shocks

4th PDM Conference

**Global financial risks:
spillovers and sovereign market impacts**

September 11, 2026

Danila Smirnov (IMF)

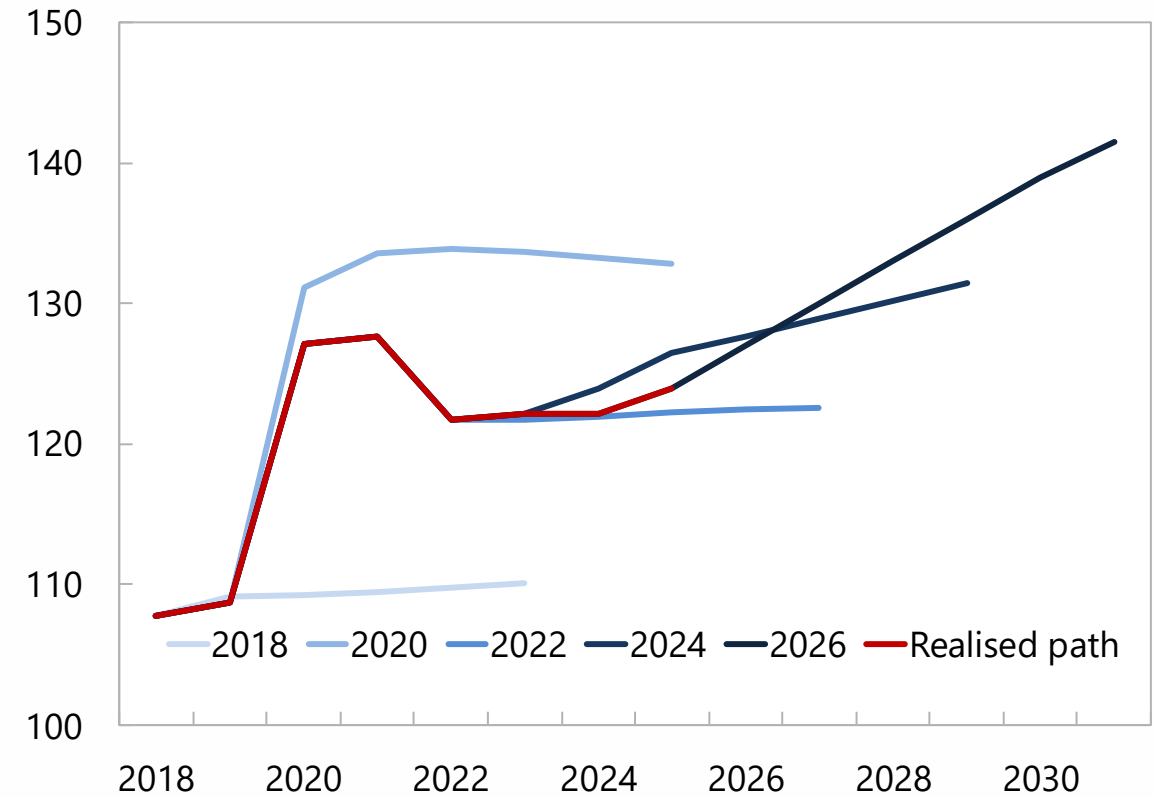
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Background. Evolution of U.S. Debt and Projections

U.S. debt trajectory revised upwards

- **Pre-COVID:** gradually rise above 110%
- **April 2024:** reach 131% in 2030
- **Current :** almost 140% by 2030

U.S. General Government Debt Projections (Percent of GDP)

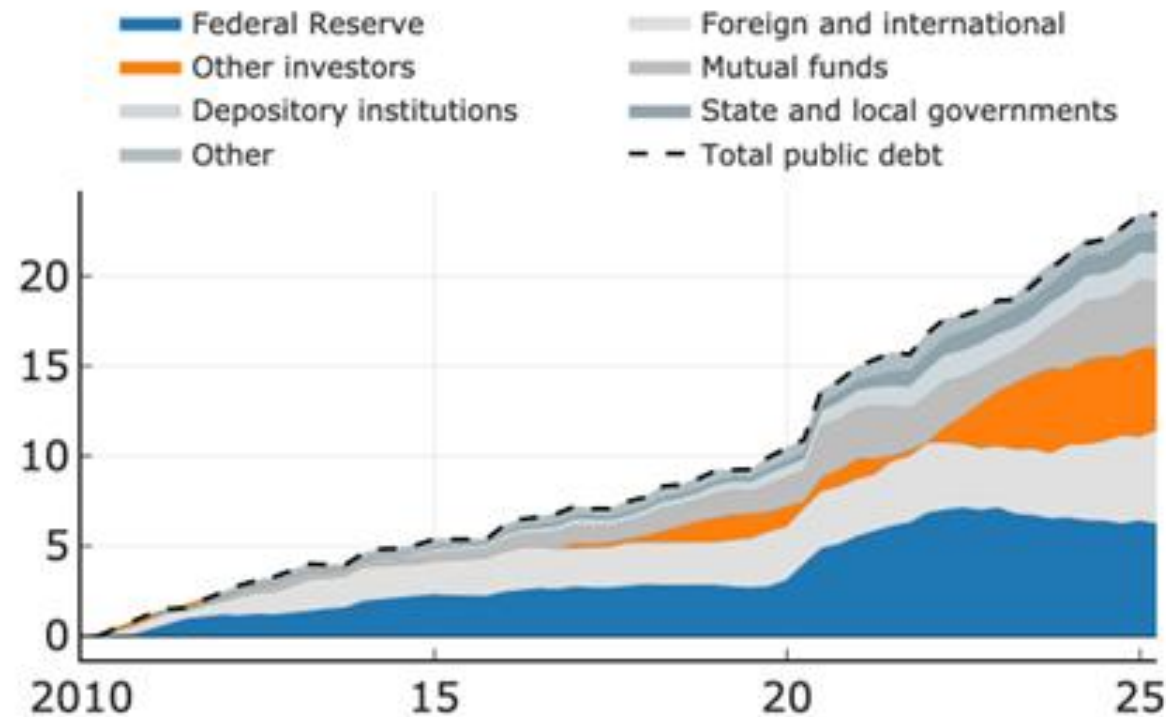


Source: IMF WEO projections

Structural Shifts in U.S. Fiscal Policy Create Global Spillover Triggers

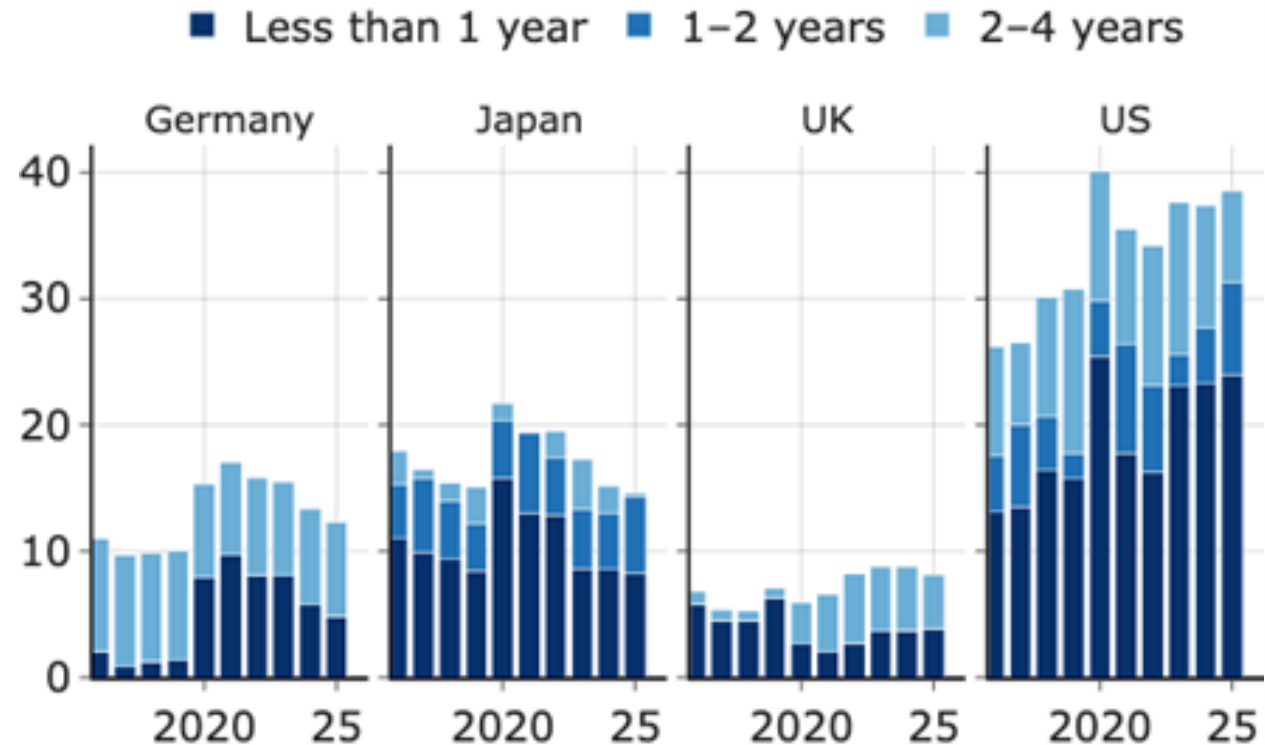
Cumulative Change in Holders of US Public Debt since the First Quarter of 2010 (Trillions of dollars)

(Trillions of dollars)



Private investors replacing Fed as marginal buyers

Short-Term Debt in Advanced Economies (Percent of total outstanding)



U.S. and other AE shift toward short-term debt

This Project Research Question and Contribution

How do unexpected changes in U.S. Treasury issuance affect?

- Global sovereign bond yields?
- Real economic activity abroad?
- Which countries are most vulnerable?

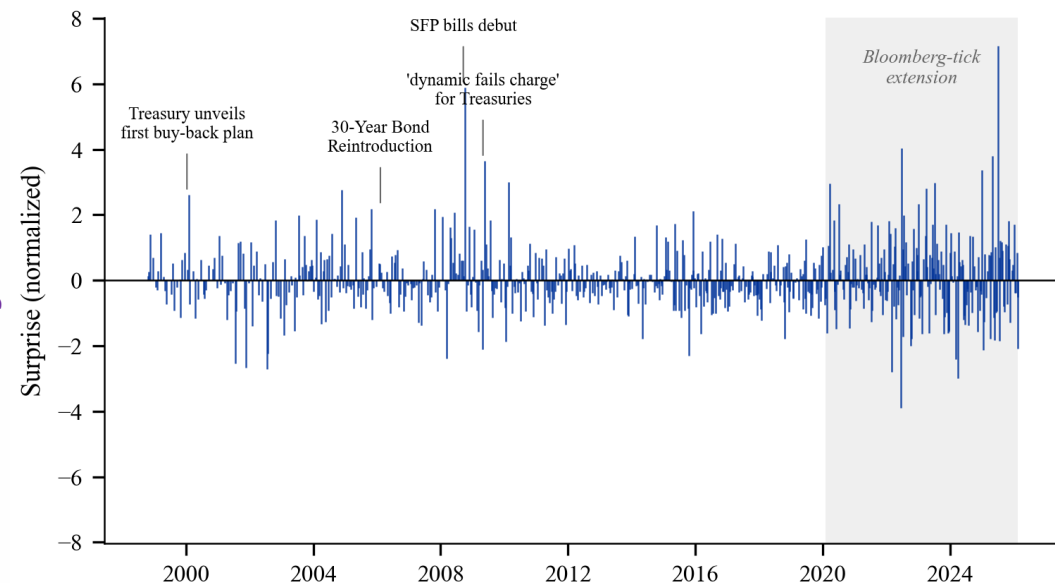
Key Contribution:

- **Identification:** Use high-frequency yield movements around Treasury auction announcements to isolate exogenous supply shocks
- **Distinction:** Supply-side shocks (fiscal expansion) vs. demand-side shocks (monetary policy/safe haven flows)
- **Policy relevance:** Quantify fiscal externalities and identify vulnerable countries

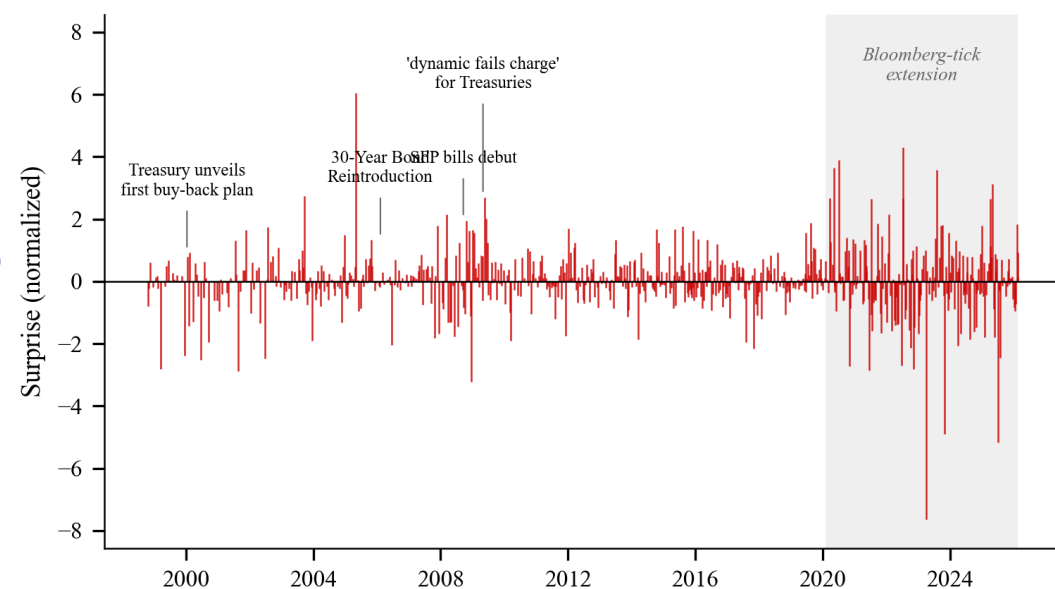
Identifying U.S. Treasury Supply Shocks From Auction Surprises

- **Event window:** 30-minute yield changes around scheduled auction announcements isolate supply news from macro news
- **Sample:** 462 auction events, 1998–2020
- **Two shocks:**
 - **Debt expansion:** broad upward shift in the curve
 - **Maturity extension:** twist/steepening shock
- **Data from** Phillot (2025); **Shock decomp.** Bi et al. (2026)
- **Shaded region:** post-2020 extension from Bloomberg tick data under same identification

Debt expansion
(raises the yield curve)

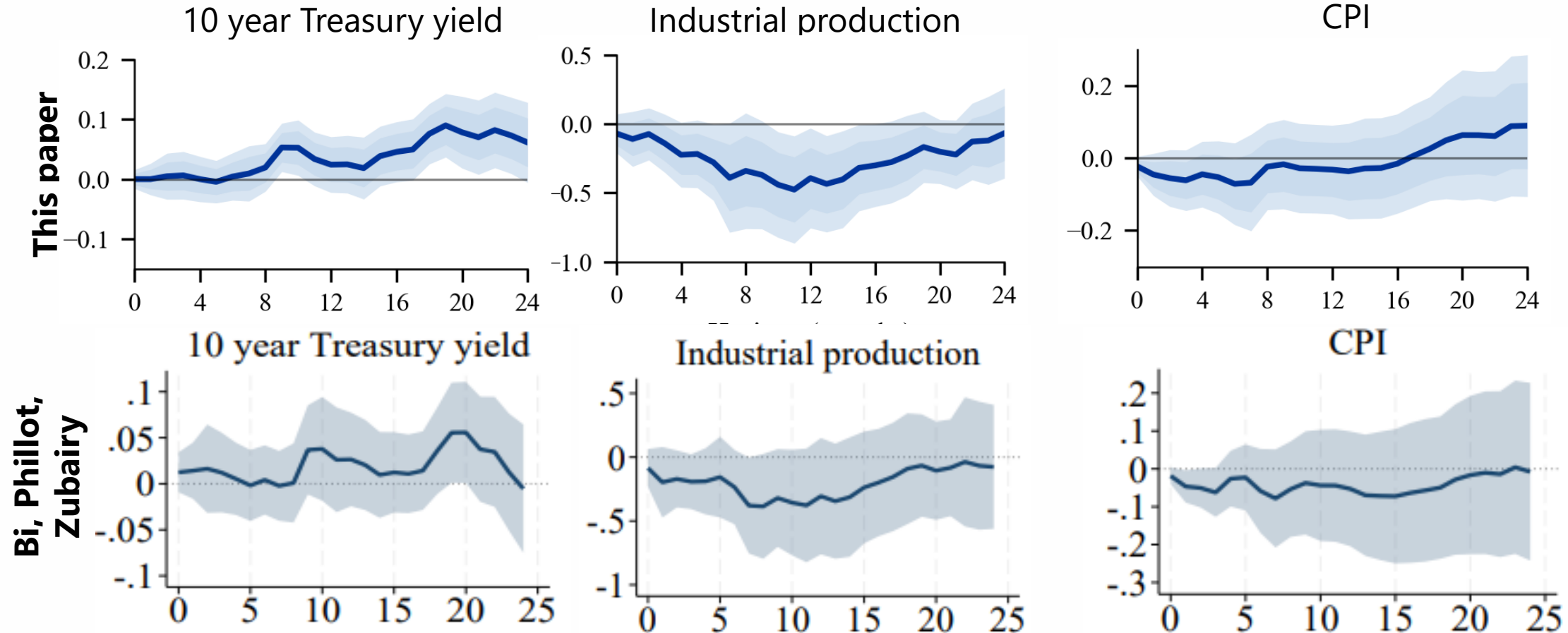


Maturity extension
(steepens the yield curve)



Domestic U.S. results Closely Match with Bi, Phillot, Zubairy (2026)

Responses to a monthly contractionary shock

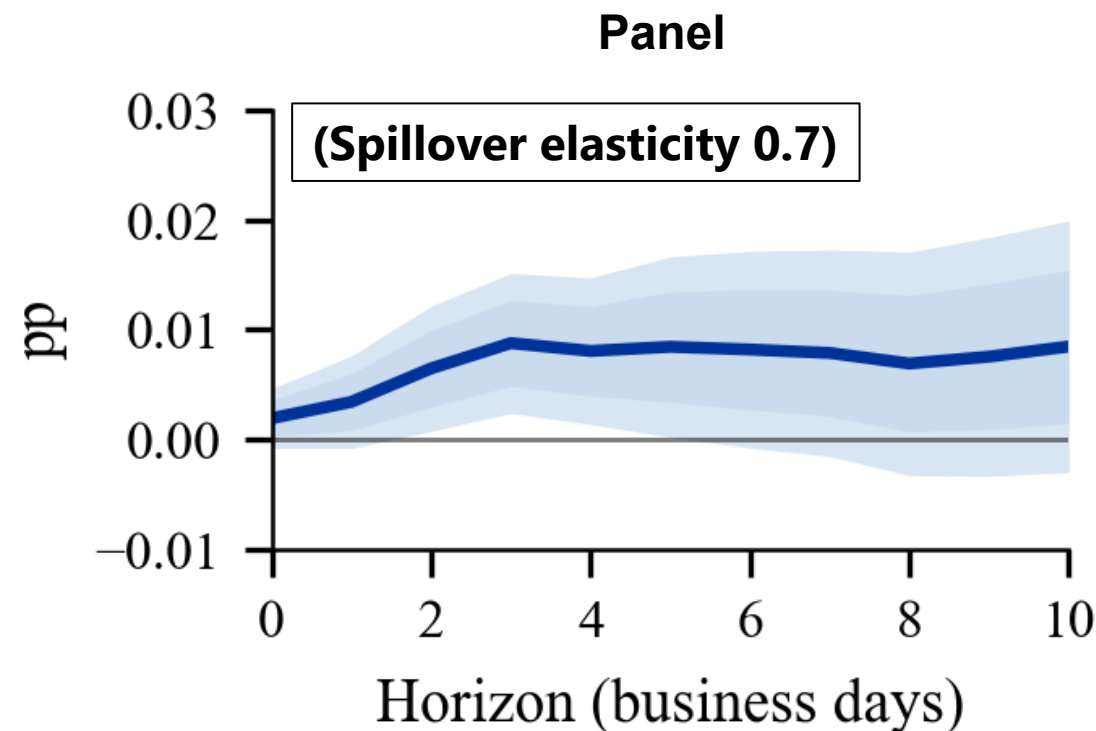
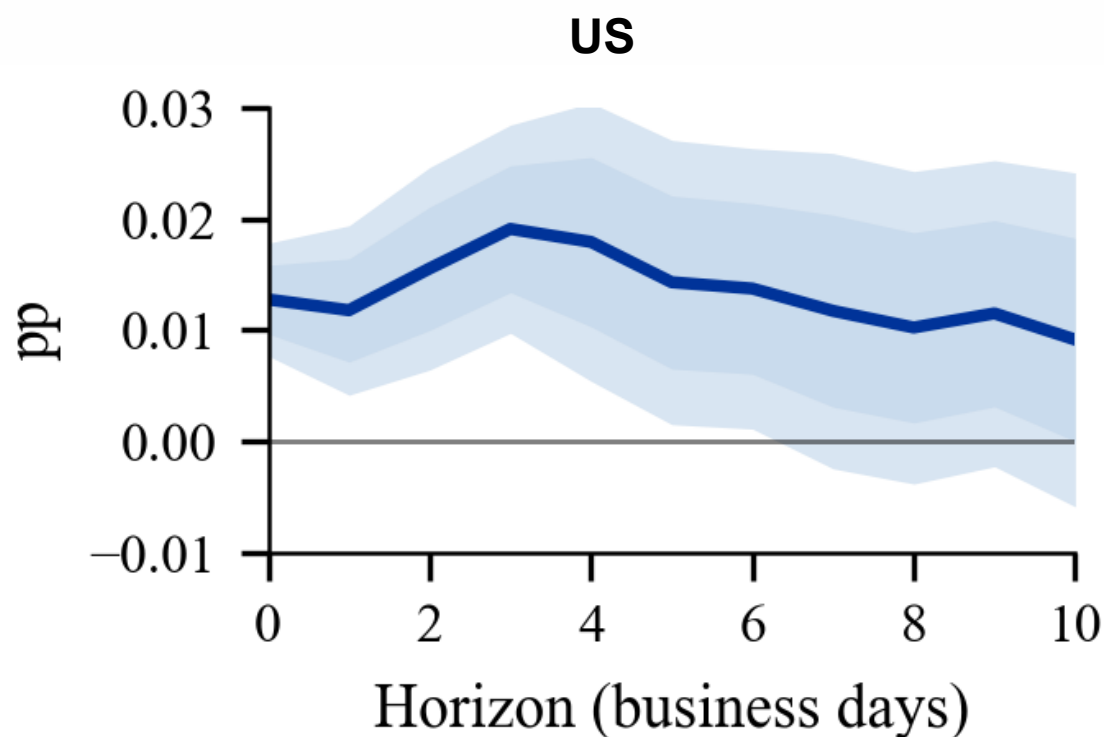


Sources: Phillot (2025); IMF staff calculations.

Notes: : Responses are cumulative and expressed in percentage points (for interest rates) or percent (for log variables), following: $y_{t+h} - y_{t-1}$, to the one-standard-deviation first principal component raising the yield curve after Treasury auction announcement shock, aggregated at the monthly frequency. Shaded areas denote 68% and 90% confidence bands; Bi, Phillot & Zubairy 90% confidence bands. Estimates are obtained using OLS local projections at monthly frequency, for horizons up to 24 months. Standard errors are Newey–West (HAC) with horizon-dependent bandwidths. Regressions control for lagged dependent variables, lagged shocks, key macroeconomic conditions (including interest rates, activity, and prices), and Granger-causality informed variables.

U.S. Treasury Supply Shocks Transmit to Global Bond Markets

10-year Yield Response to a One Standard Deviation Debt Expansion Shock



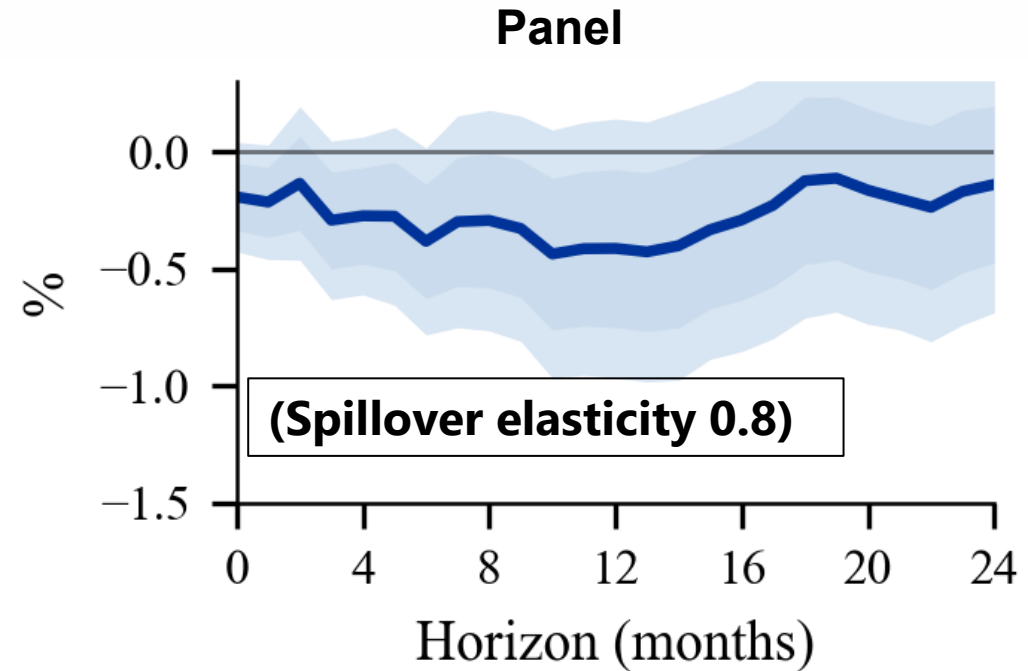
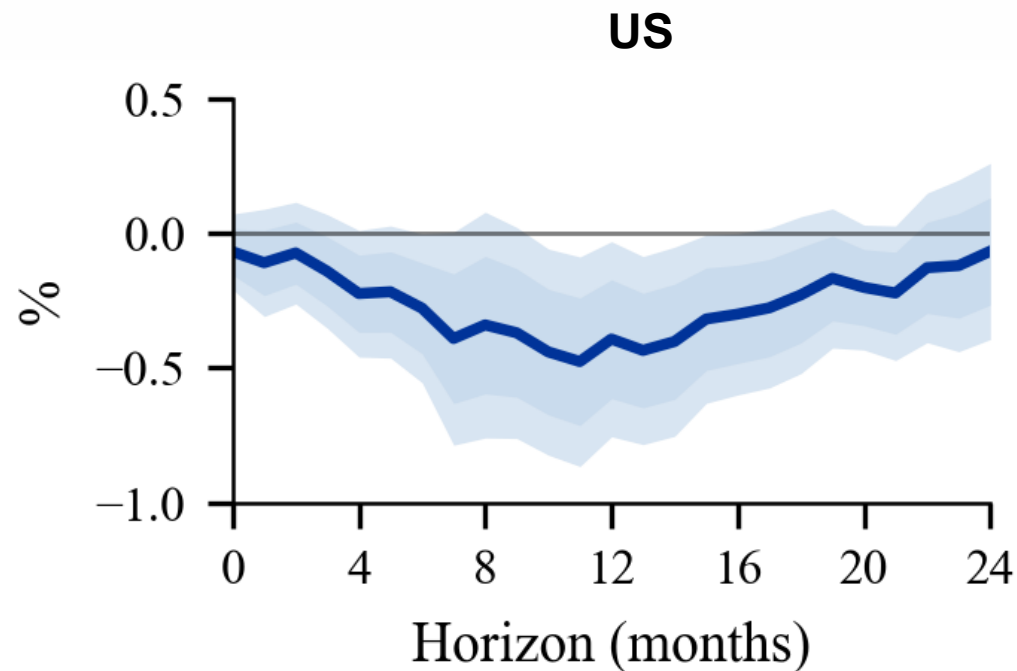
Sources: shocks from Phillot (2025). IMF staff calculations.

Note: Responses are in basis points per one-standard-deviation shock. Shaded areas: 68 percent and 90 percent confidence bands. Standard errors: HAC for US, two-way clustered for panel. Daily OLS local projections are estimated over horizons of up to ten business days. The dependent variable is $Y_{t+h} - Y_{t-1}$ for the U.S. 10-year Treasury yield and $Y_{i,t+h} - Y_{i,t-1}$ for foreign 10-year sovereign yields. The shock is a contractionary Treasury-supply shock identified on auction announcement days as the first principal component raising the yield curve and residualized ex-ante with respect to fixed effects (year, day-of-week, and country, where applicable), auction related dummies, and controls selected based on Granger-causality tests. Unbalanced panel of 39 countries over the period 1998-2020.

Real Spillovers are As Large Abroad as in the U.S.

- **Foreign real effects exceed domestic ones:** foreign IP declines as much as U.S. IP
- **Why?** The shock tightens global financial conditions, weakens U.S. demand for imports, and moves FX

Industrial Production Response to a One Standard Deviation Debt Expansion Shock

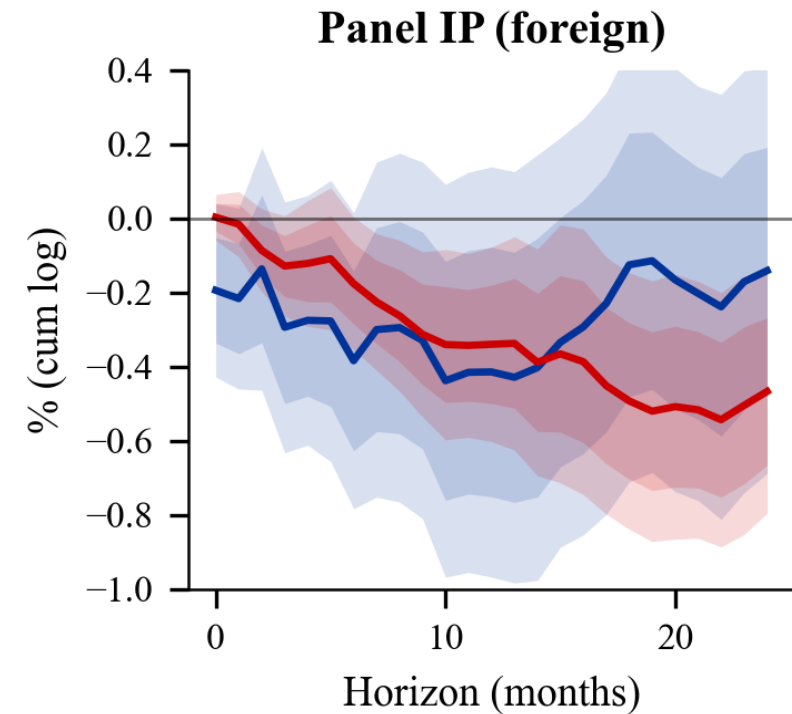
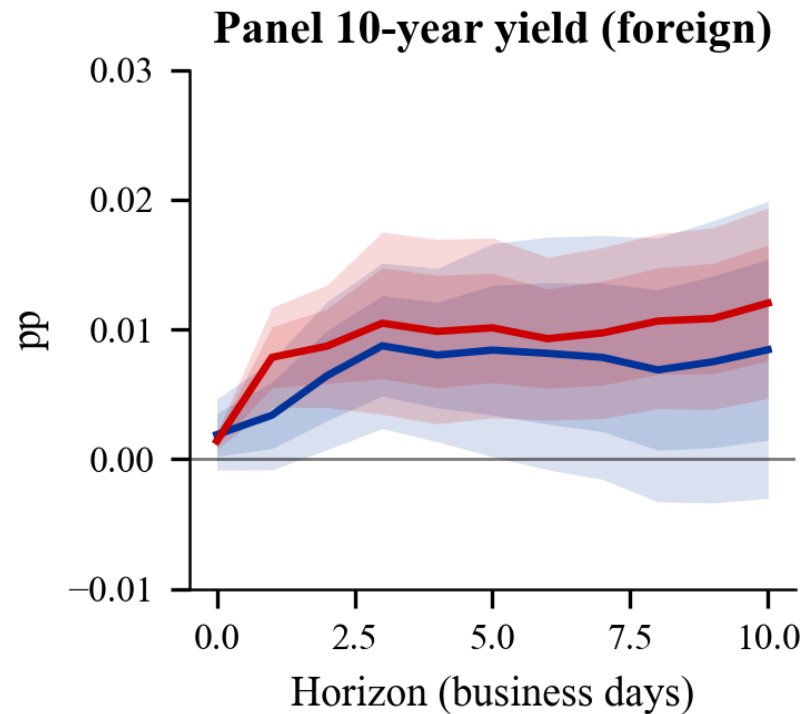
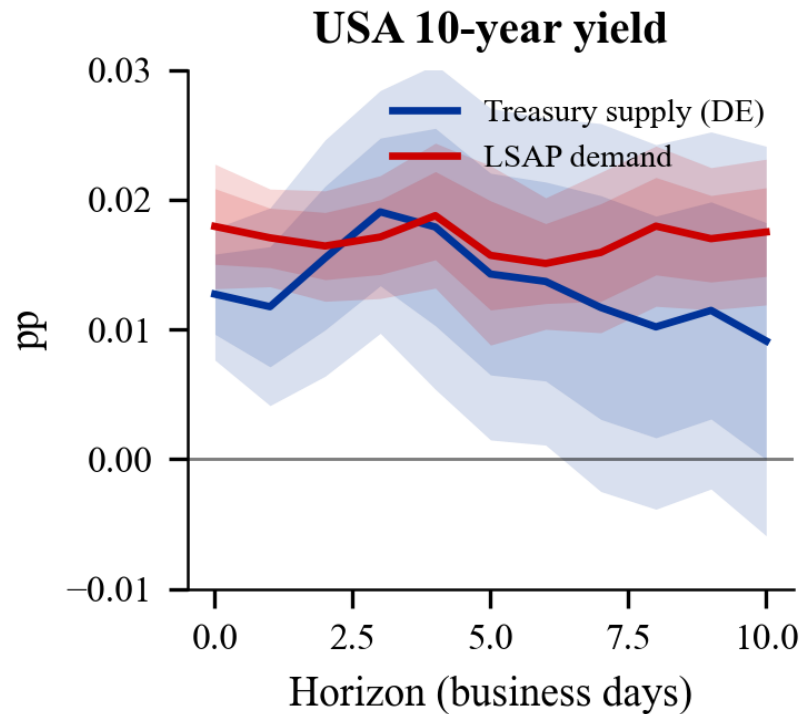


Sources: Phillot (2025); IMF staff calculations.

Notes: Monthly panel local projections of cumulative responses $100 \cdot (\log IP_{i,t+h} - \log IP_{i,t-1})$ to a US Treasury supply shock. Shaded areas denote 68% and 90% confidence bands. The shock is constructed by aggregating high-frequency event-day Treasury supply surprises within each month and set to zero in non-event months. Panel estimates exclude the United States and include country fixed effects and controls.

Comparison with the Demand Shock (LSAP)

- Compare the **supply side** shock results with the **demand side** shock
- Comes from the **-LSAP component** of U.S. monetary policy announcements



Sources: Swanson (2021), Phillott (2025); IMF staff calculations.

Notes: Regression specifications kept the same and only shocks replaced across for LSAP (sample 1991-2019) or TSY (sample 1998-2020). Shaded areas denote 68% and 90% confidence bands.

Why are Foreign Effects Larger than Domestic Effects?

Three Channels Reinforce Each Other

- **Financial channel:**

Higher U.S. long rates raise foreign sovereign and corporate borrowing costs

- **Trade channel:**

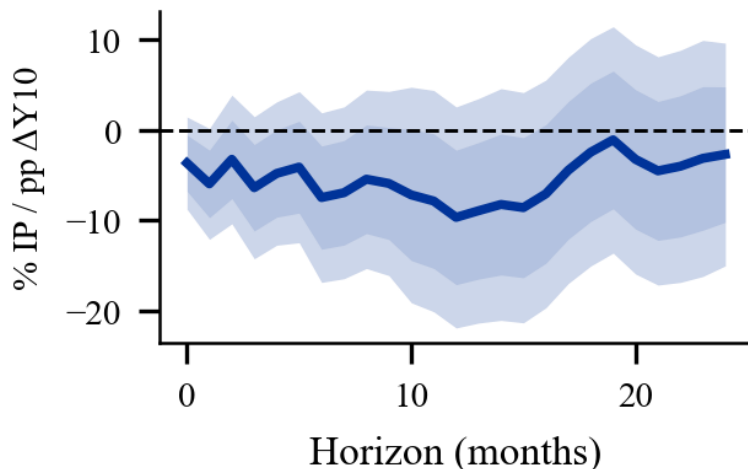
Lower U.S. activity reduces demand for foreign exports

- **Exchange rate channel:**

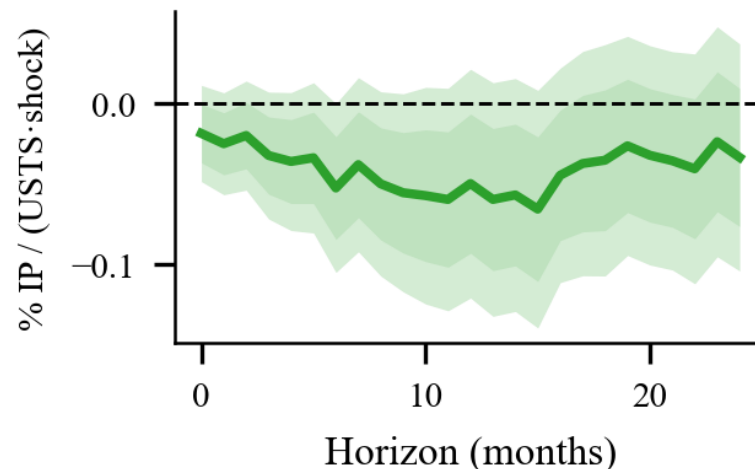
Depreciation of foreign currencies further tightens financial conditions and affects competitiveness

Channel-Specific Explanatory Power

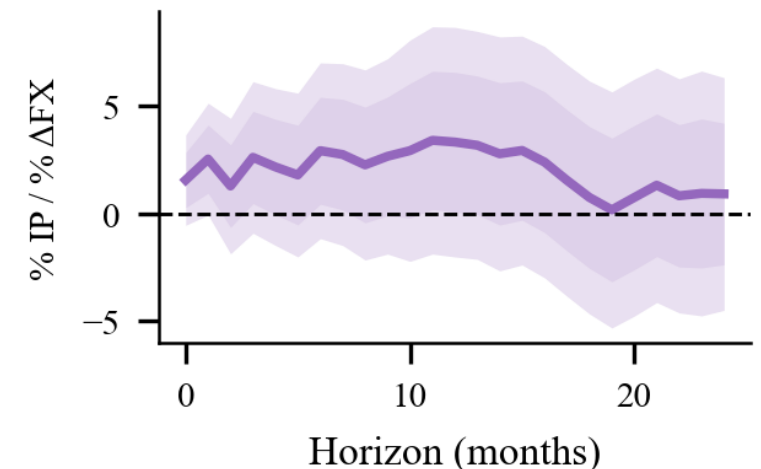
Financial
(daily peak FS, modal $h^*=3d$
 $\bar{\gamma}=+0.011$ pp/shock)



Trade
(USTS×shock, $\bar{\gamma}=\text{mean(USTS)}=1.956\%$ GDP)



FX
(daily peak FS, modal $h^*=6d$
 $\bar{\gamma}=-0.027$ %FX/shock)

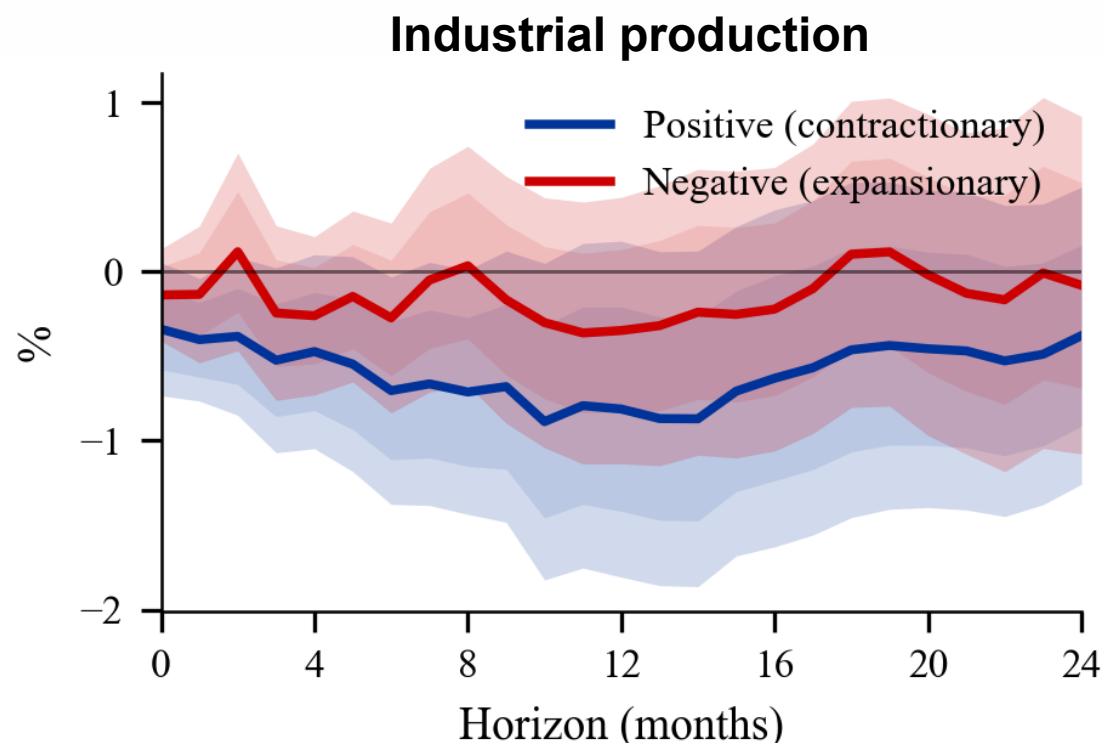
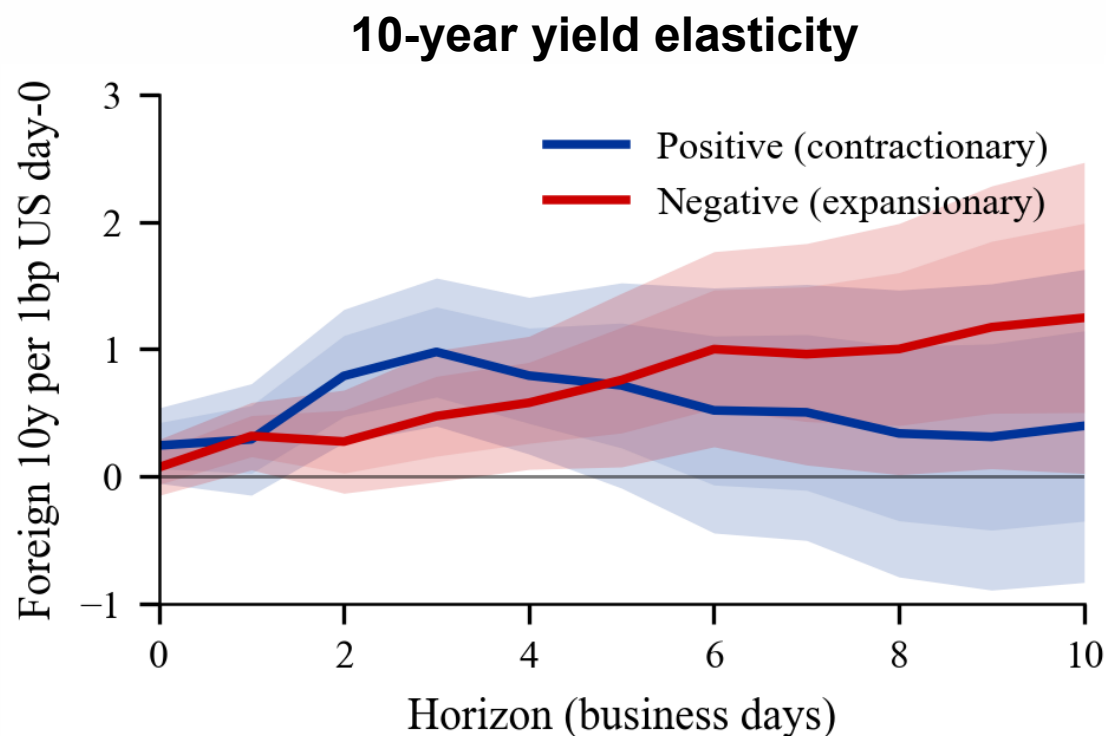


Spillovers heterogeneity

Asymmetry: Contractionary Shocks Hit Harder

Spillover Effects Are Asymmetric: Contractions Hit Harder Than Expansions

Effects are stronger for contractionary moves (yield increases) than for expansionary episodes (yield declines)



Note: Impulse responses estimated separately for positive (contractionary, rate-raising) and negative *(expansionary, rate-lowering) debt expansion shocks. Left: 10-year sovereign yield response elasticity. Right: industrial production. Shaded areas denote 68% and 90% confidence bands.

Two Dimensions Explain Heterogeneity

Financial integration amplifies pass-through

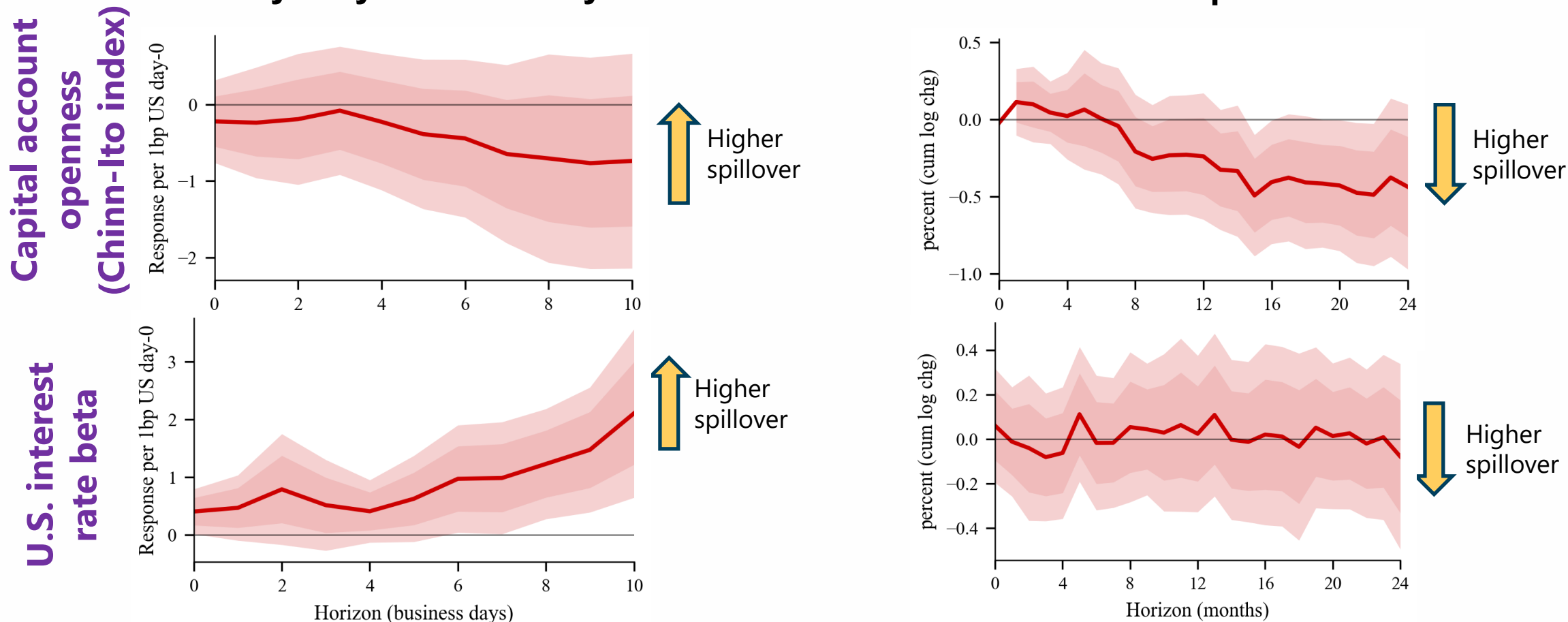
- Foreign investor share
- Capital account openness

Macro resilience dampens real spillovers

- Fiscal space
- Current account balance
- Market access / Debt-at-Risk

Financial Integration Amplifies Both Yield Spillovers and Output Losses

Open capital accounts strengthen portfolio-balance transmission



Sources: Phillot (2025); IMF staff calculations.

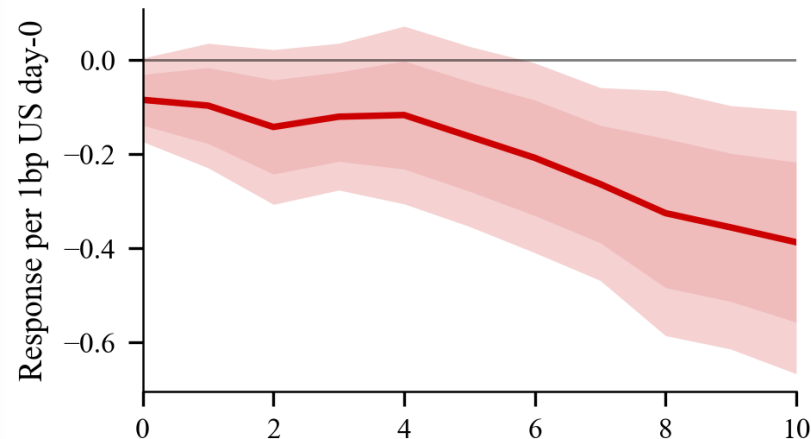
Notes: Interacted local projections with time fixed effects. Reported coefficients represent the differential spillover for a country at the 75th vs. 25th percentile of each characteristic (scaled by IQR). Capital account openness is the Chinn-Ito index of cross-border capital flow restrictions. Exposure to foreign investors is the non-resident share of sovereign debt holdings. Shaded areas denote 68% and 90% confidence bands. Unbalanced panel of 39 countries for yields and 58 countries for IP, 1998–2020.

Policy Buffers Matter: Stronger Fundamentals Reduce Spillovers

Countries with stronger current accounts and more fiscal space experience smaller output losses

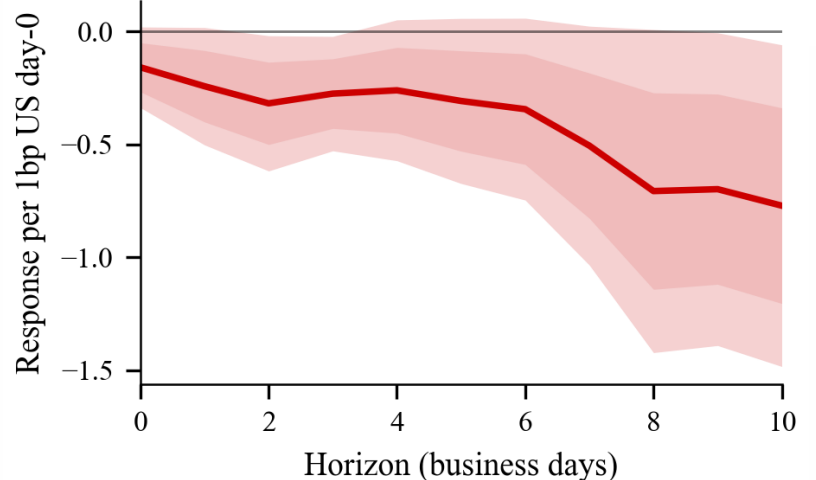
Current account
to GDP

10-year yield elasticity



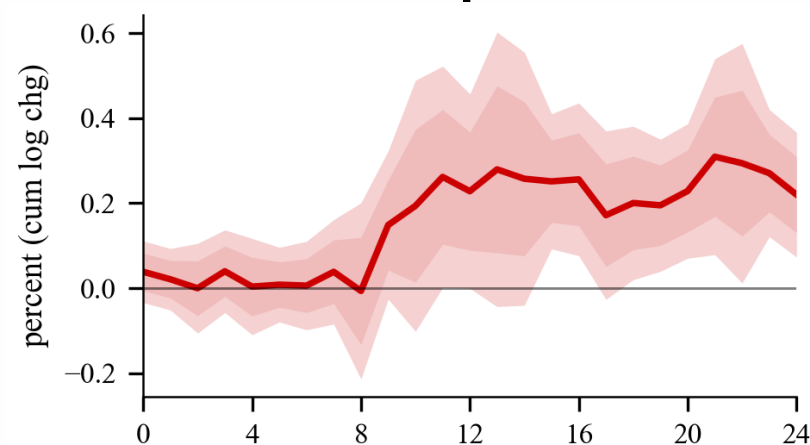
Lower
spillover

Fiscal space

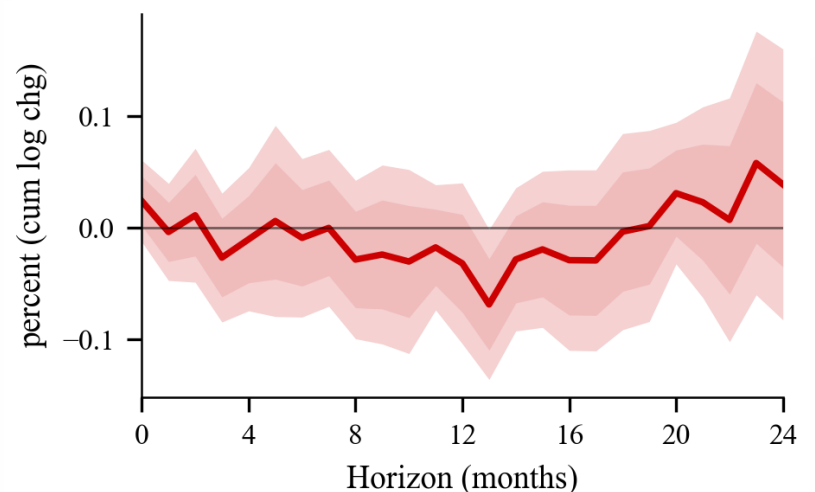


Lower
spillover

Industrial production



Lower
spillover



Lower
spillover

Sources: Phillot (2025); IMF staff calculations.

Notes: Interacted local projections with time fixed effects. Reported coefficients represent the differential spillover for a country at the 75th vs. 25th percentile of each characteristic (scaled by IQR). Current account to GDP is the ratio of the current account balance to nominal GDP. Fiscal space is capturing a government's capacity to sustainably expand its fiscal position. Shaded areas denote 68% and 90% confidence bands. Unbalanced panel of 39 countries for yields and 58 countries for IP, 1998–2020.

Conclusion

Policy Implications for Policymakers

From Official to Private Creditors



Shift to Short-Term Debt



Eroding 'Exorbitant Privilege'



- Marginal buyers price-sensitive, amplifying yield responses
- Unexpected short-term issuance → larger shocks
- Countries refinancing at higher rates
- Supply surprises quickly affect foreign borrowing costs

U.S. Policy Response

Fiscal consolidation to reduce spillover frequency and magnitude

Foreign Policy Response

Fiscal space provides insurance against spillovers
Diversify creditor base (reduce foreign investor concentration)
Extend debt maturity profiles to reduce rollover risk
Build buffers during U.S. easing cycles
Prepare contingency fiscal plans for U.S. tightening scenarios