



International Monetary Fund

Global Financial Stability Framework and Applications

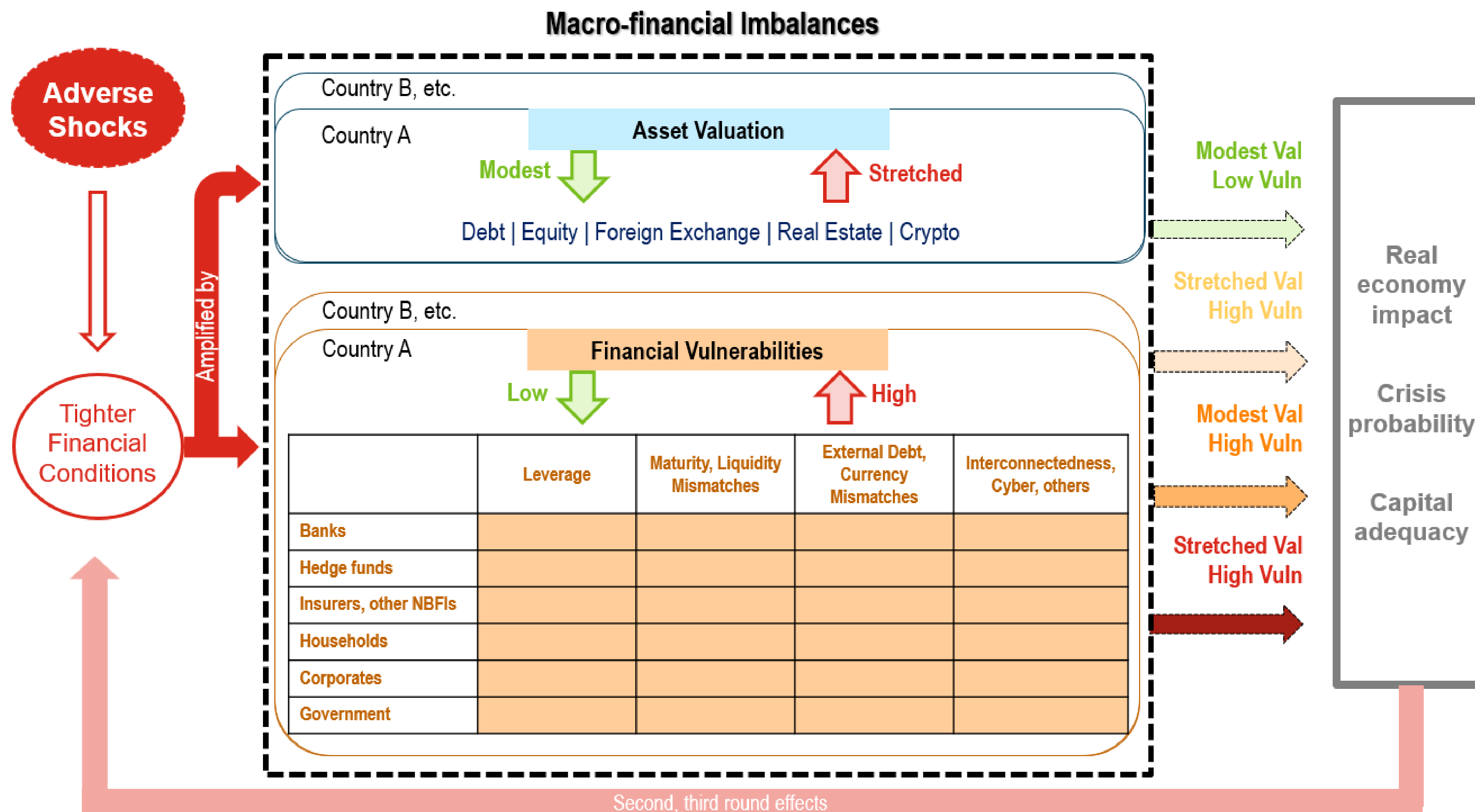
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October 2026

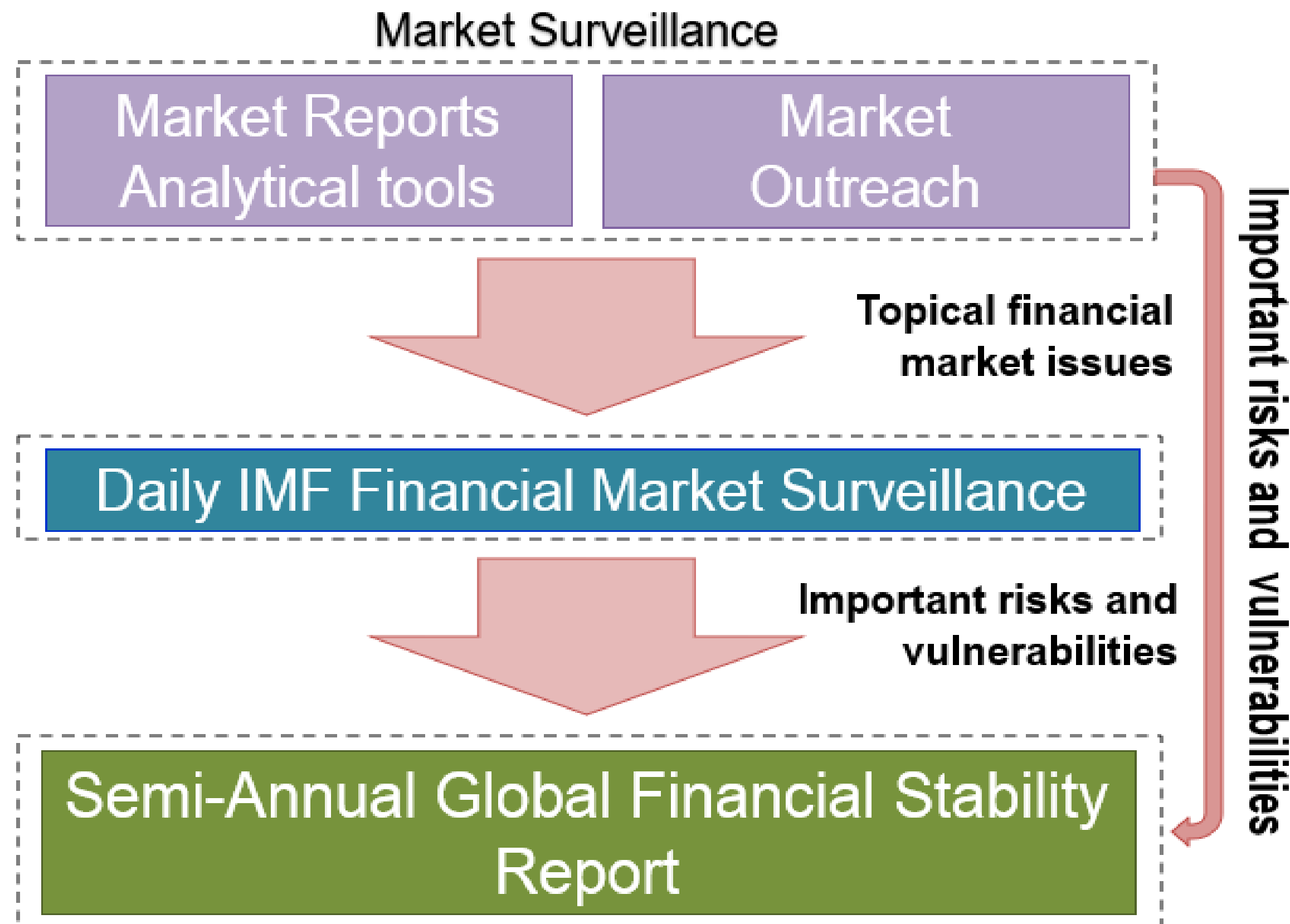
Outline

- 1) Framework for Global Financial Stability
- 2) Market Developments
- 3) Vulnerability Assessments
- 4) Risks and Scenarios

Financial Stability Monitoring Framework



Market Intelligence



Considerations guiding the selection of Risks and Vulnerabilities:

☑ **Risks:** likelihood of shocks; severity of potential market impacts,

☑ **Vulnerabilities:** potential to amplify risks; extent of recent changes; whether there are novel analyses to shed new light.

Growth-at-Risk

The GFSR uses h -years-ahead, GaR model of Adrian et al. (2019) for overall financial stability assessment:

$$\begin{aligned} & \text{Global real GDP growth}_{t+h}, \text{ with probability } \alpha \\ &= f(\text{financial conditions}_t, \text{credit growth}_t, \text{uncertainty}_t) \end{aligned}$$

With resulting forecast growth density $\hat{g}_{t+h}(\cdot)$.

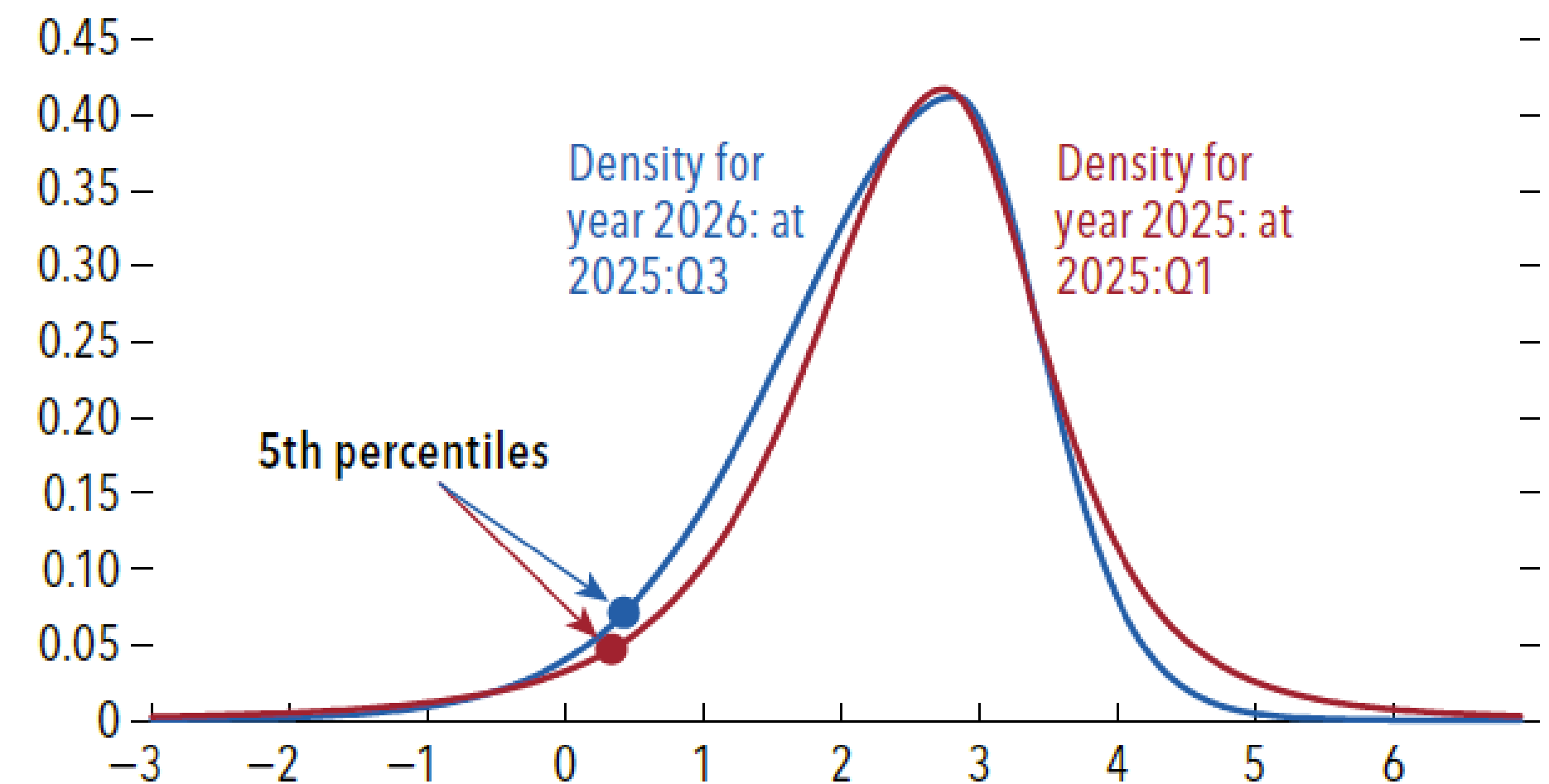
GaR can also be used for scenario analysis.

- $\hat{g}_{t+h}(\cdot | \mathbf{s})$, the forecast growth density under a given scenario $\mathbf{s}$.
- Estimating probabilities $p_{\mathbf{s}}$ using:

$$\hat{g}_{t+h}(\cdot) = \sum_{\mathbf{s}} p_{\mathbf{s}} \hat{g}_{t+h}(\cdot | \mathbf{s})$$

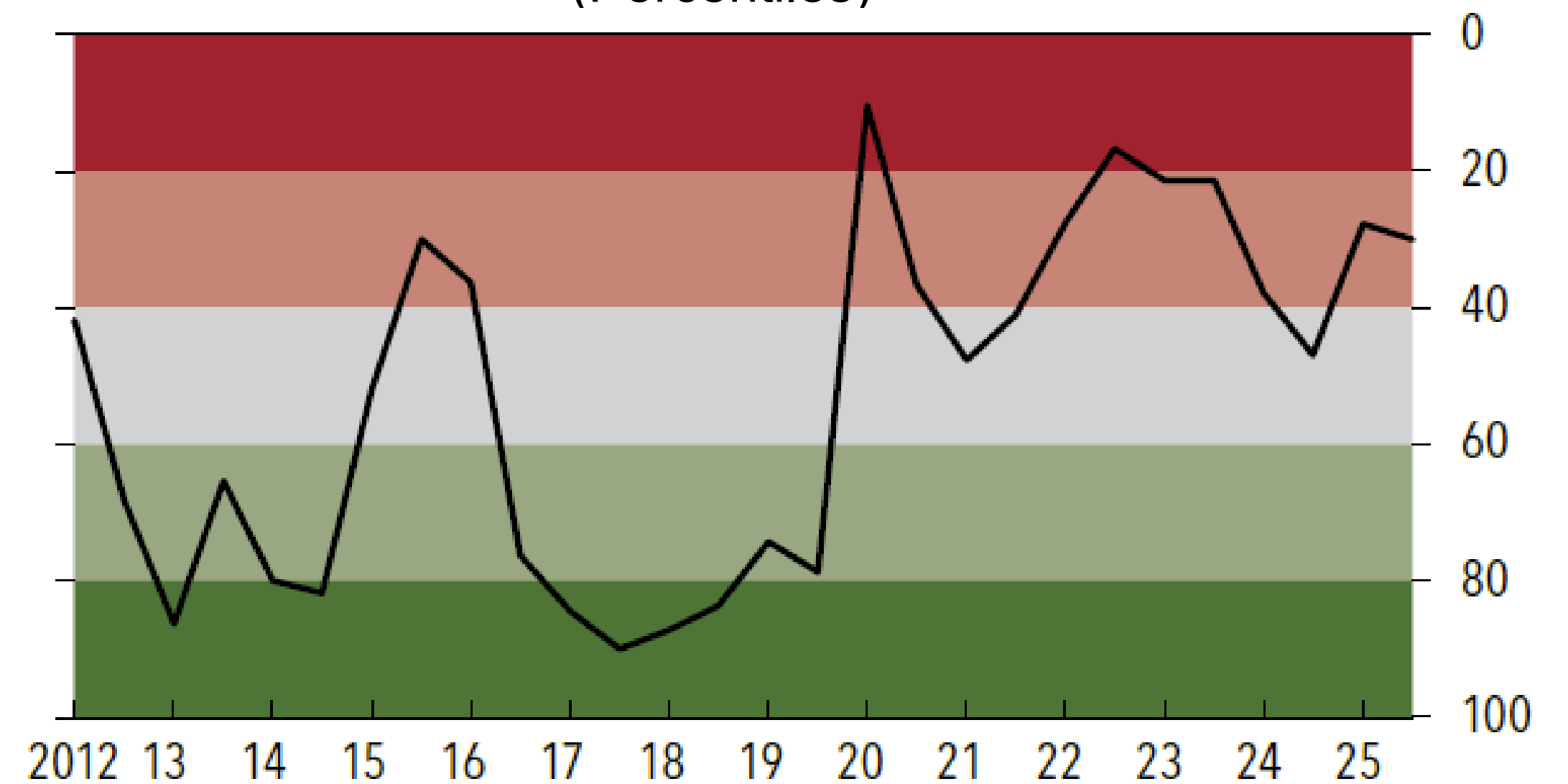
One year-ahead Forecast Growth Densities

(Probability density, Oct 2025 GFSR)



Historical Percentiles of One-year GaR

(Percentiles)



Challenges in Assessing Vulnerabilities

Lack data needed to quantify certain vulnerabilities:

- Data gaps. See nonbank financial intermediation example →
- No access to confidential supervisory data.
- Data gap initiatives undertaken globally (e.g., FSB's task force) highlights the extent of the problem.

Data arrives with significant lag or too backward-looking.

- E.g., FSIs lagged by almost one-year.

Consistent data across countries often not available;

- Cover mostly G20 plus some frontiers.

Resource constraints.

Assessment of data gaps for nonbank financial institutions (Chapter 2 of April 2023 GFSR)

Table 2.2. Regulatory Data Gaps for NBFIs

NBFI (GFA)	Financial Leverage	Liquidity	Interconnectedness	Currency Mismatches
Investment funds (excluding money market funds and hedge funds) (\$58 trillion, 12% of GFA)				
Insurance companies (\$40 trillion, 9% of GFA)				
Pension funds (\$43 trillion, 9% of GFA)				
Money market funds (\$8.5 trillion, 2% of GFA)	N/A			N/A
Structured finance vehicles (\$6 trillion, 1% of GFA)				
Hedge funds (\$6 trillion, 1% of GFA)				
Central counterparties (\$0.7 trillion, 0.1% of GFA)	N/A			N/A

Source: IMF staff elaborations.

Note: This table is to be read jointly with Table 2.1 on NBFI vulnerabilities. Red denotes no/very little data in areas with high or medium/high vulnerabilities; orange denotes no/very little data in areas with low/medium vulnerabilities; yellow denotes some data in select jurisdictions in areas with high or medium/high vulnerabilities; light green denotes some data in select jurisdictions in areas with low or medium vulnerabilities; dark green denotes broadly adequate data irrespective of level of vulnerabilities. GFA = global financial assets; N/A = not applicable; NBFI = nonbank financial intermediary.

Market Developments

- Financial Conditions
- Benchmark Government Bond Yields and Sovereign Spreads
- Inflation Expectations and Policy Expectations
- EMDEs

Financial Conditions

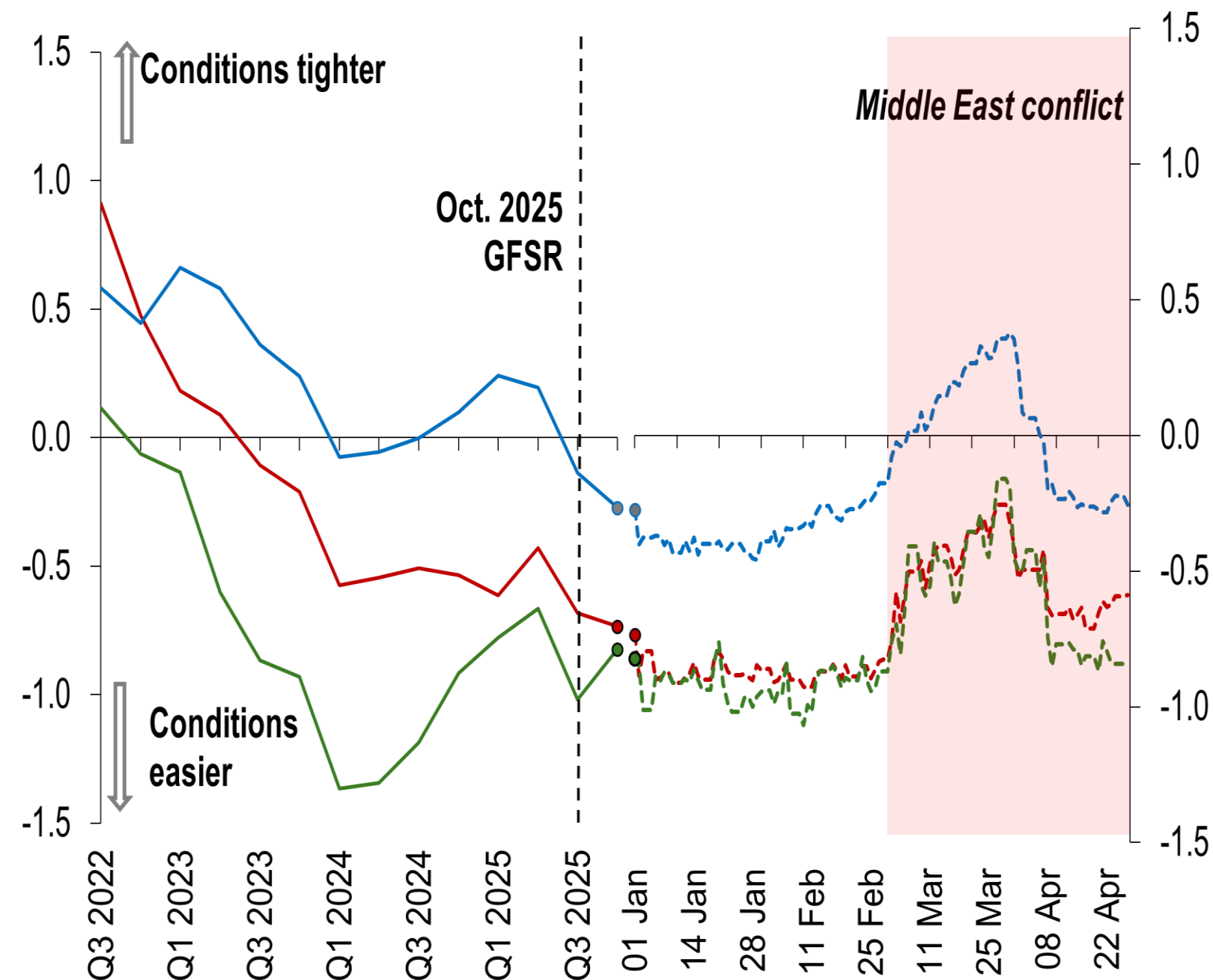
Financial conditions tightened in the early weeks of the conflict but have since eased

Volatility in oil and interest rate markets spiked higher before receding somewhat

Global equities have recovered from their initial losses, though Europe and EM have underperformed

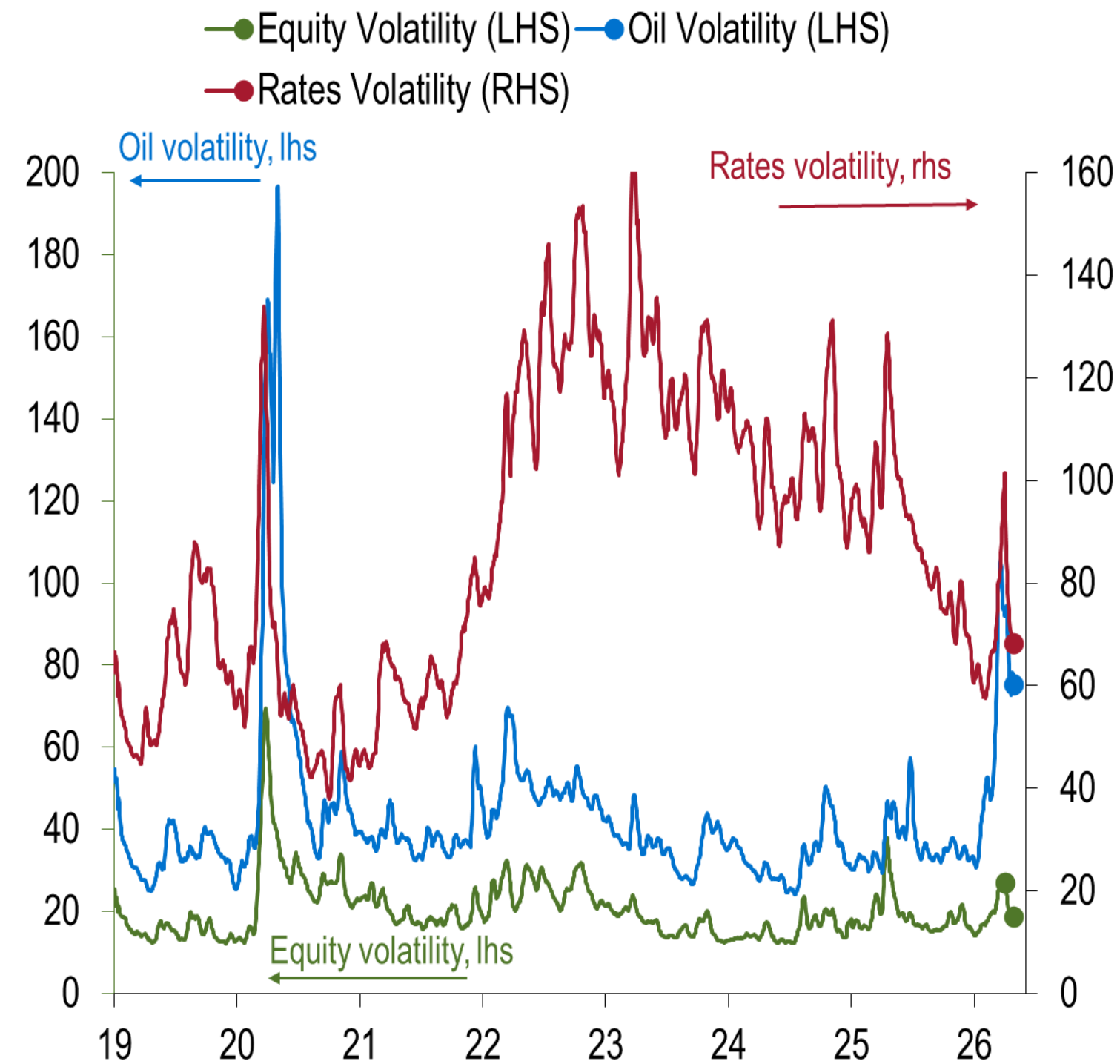
Financial Condition Index

(Number of standard deviations over long-term averages)



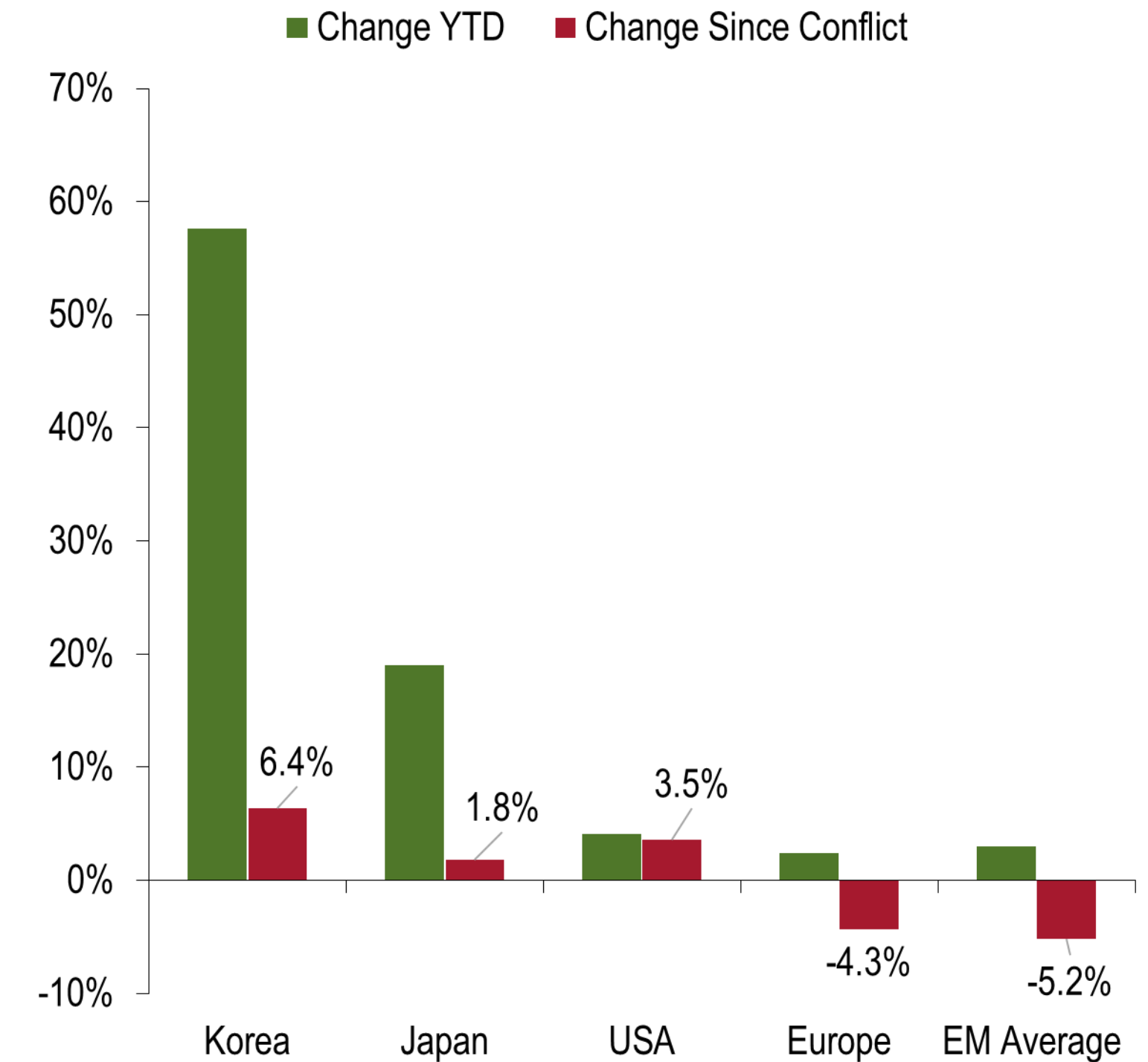
Market Volatility

(Index, 10-day average)



Global Equities

(Percent change)



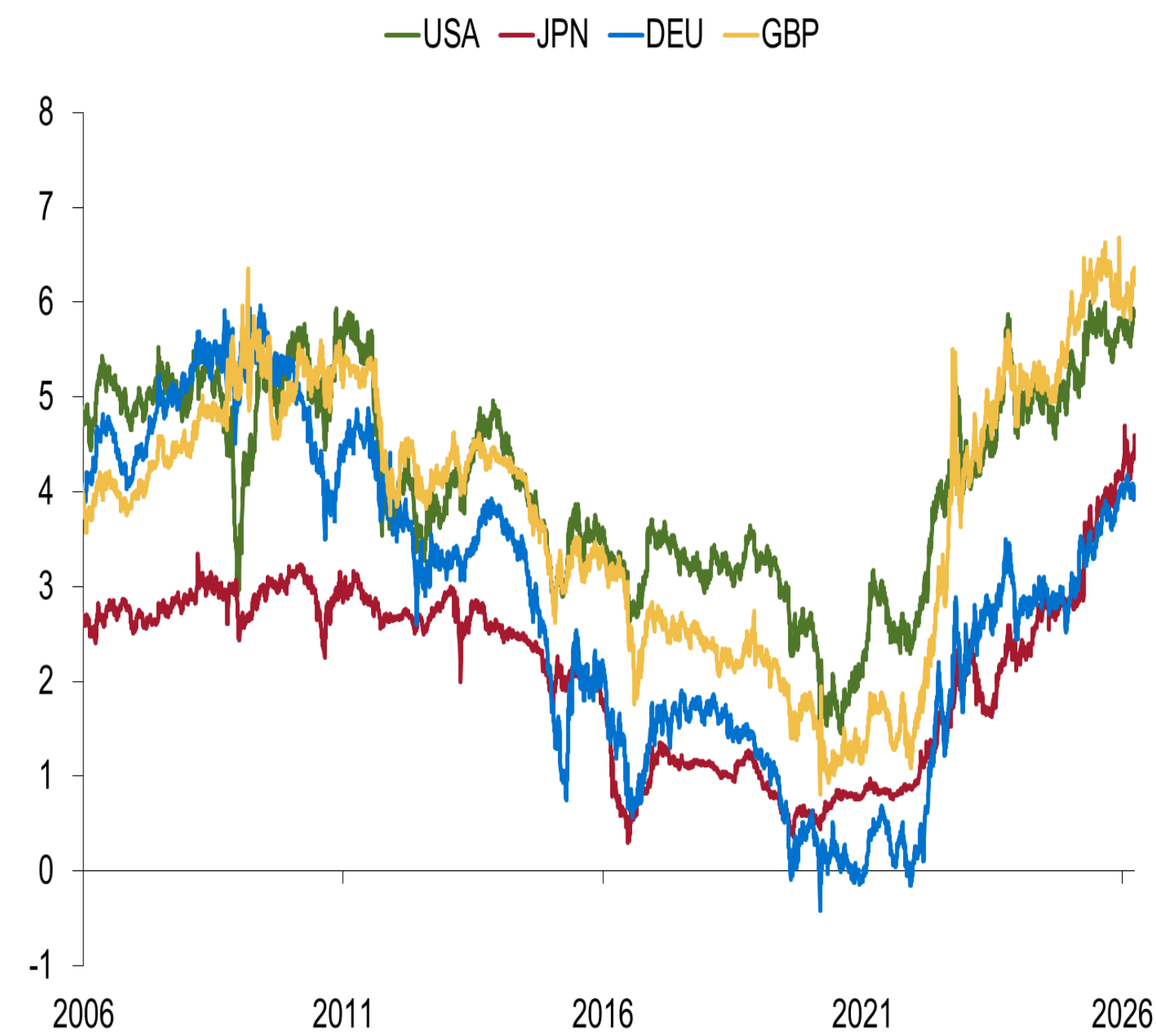
Benchmark Bond Yields and Spreads

Long-term yields face upward pressure amid fiscal concerns.

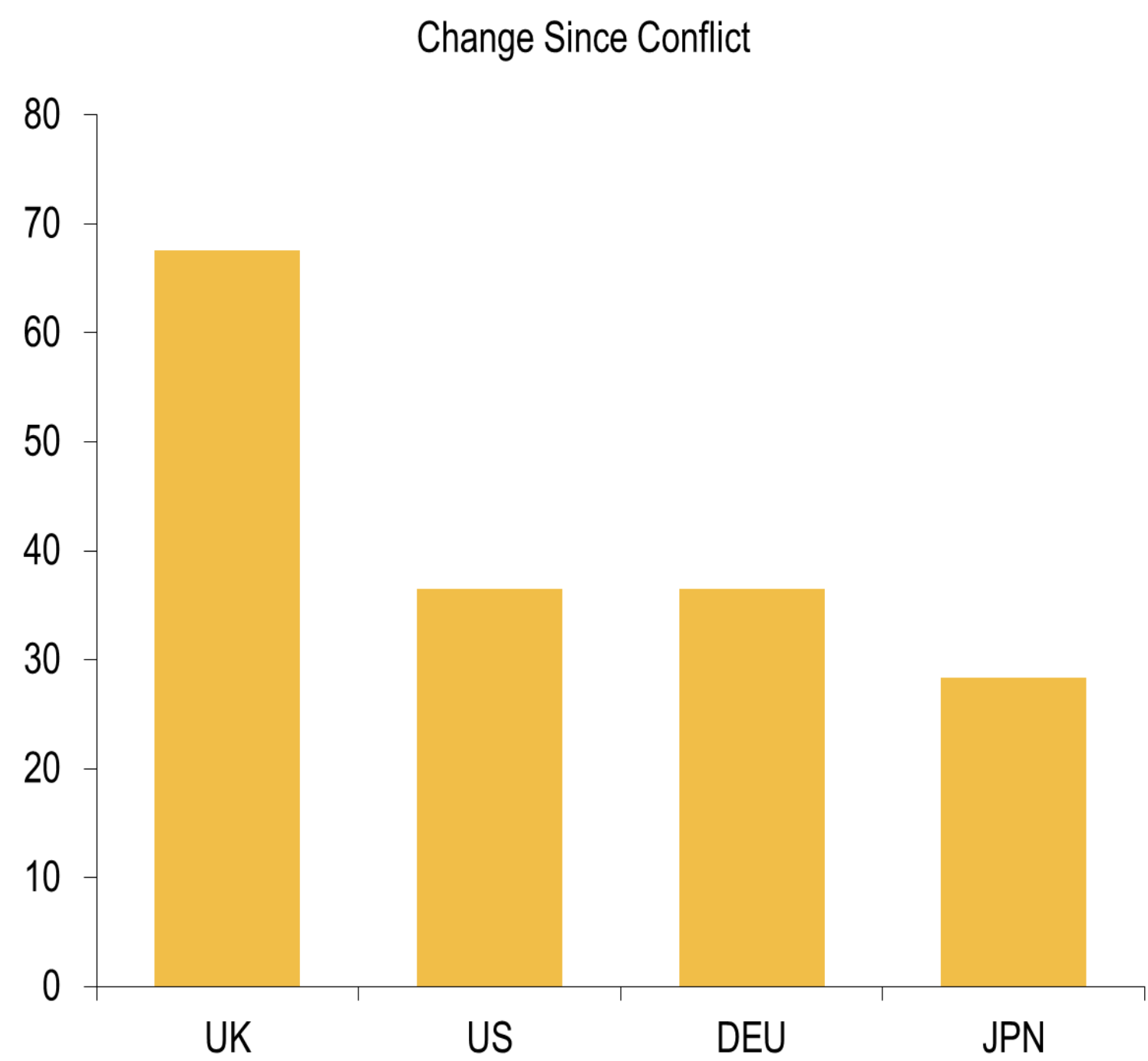
While bond yields have moved materially higher in some countries.

Credit spreads have tightened on net despite some initial widening, suggesting growth risks are not priced in.

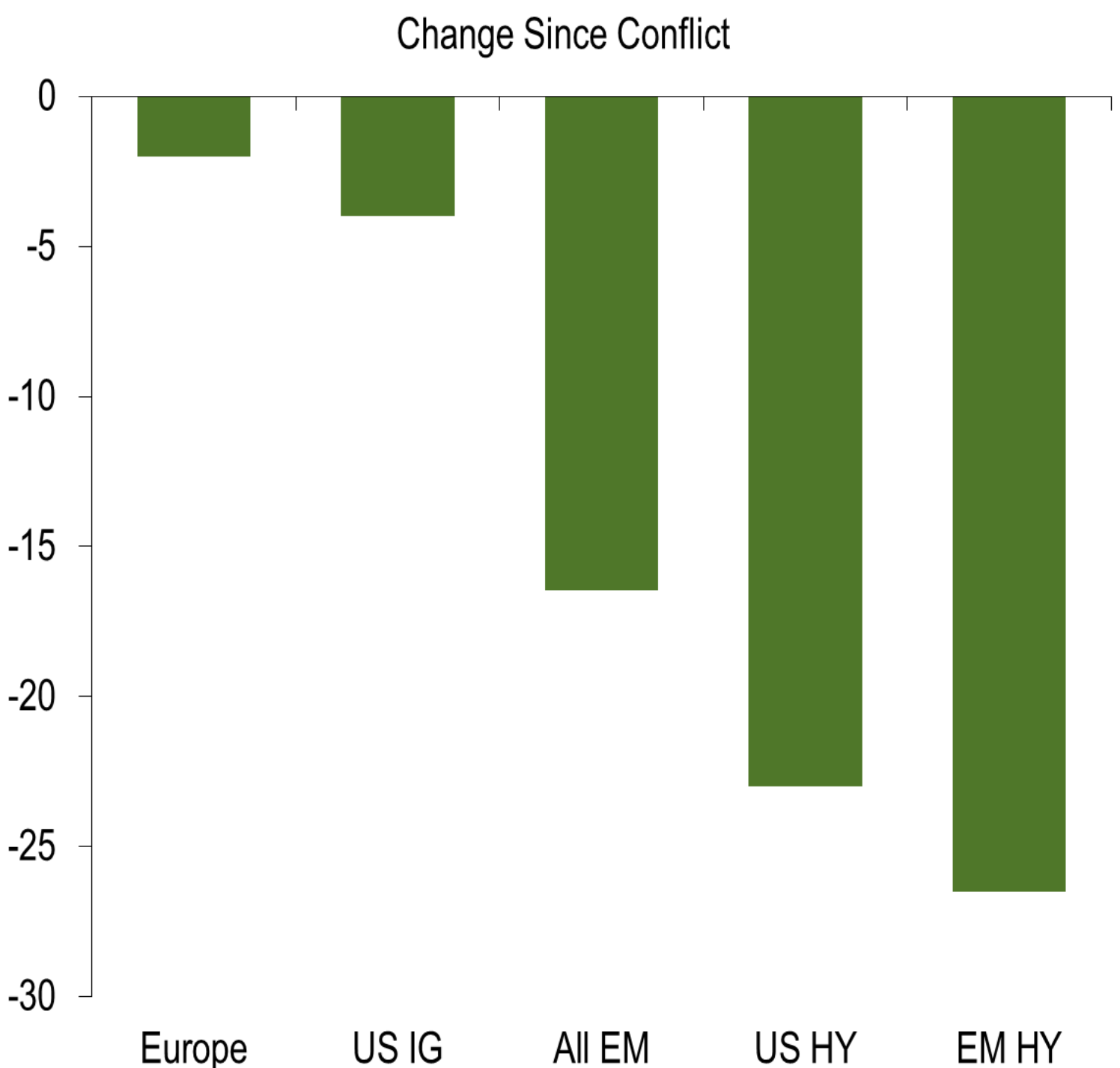
10y10y Forward Government Bond Yields
(Percent)



10-Year Government Bond Yields
(Basis points)



EM Sovereign and AE Corporate Credit Spreads
(Basis points)

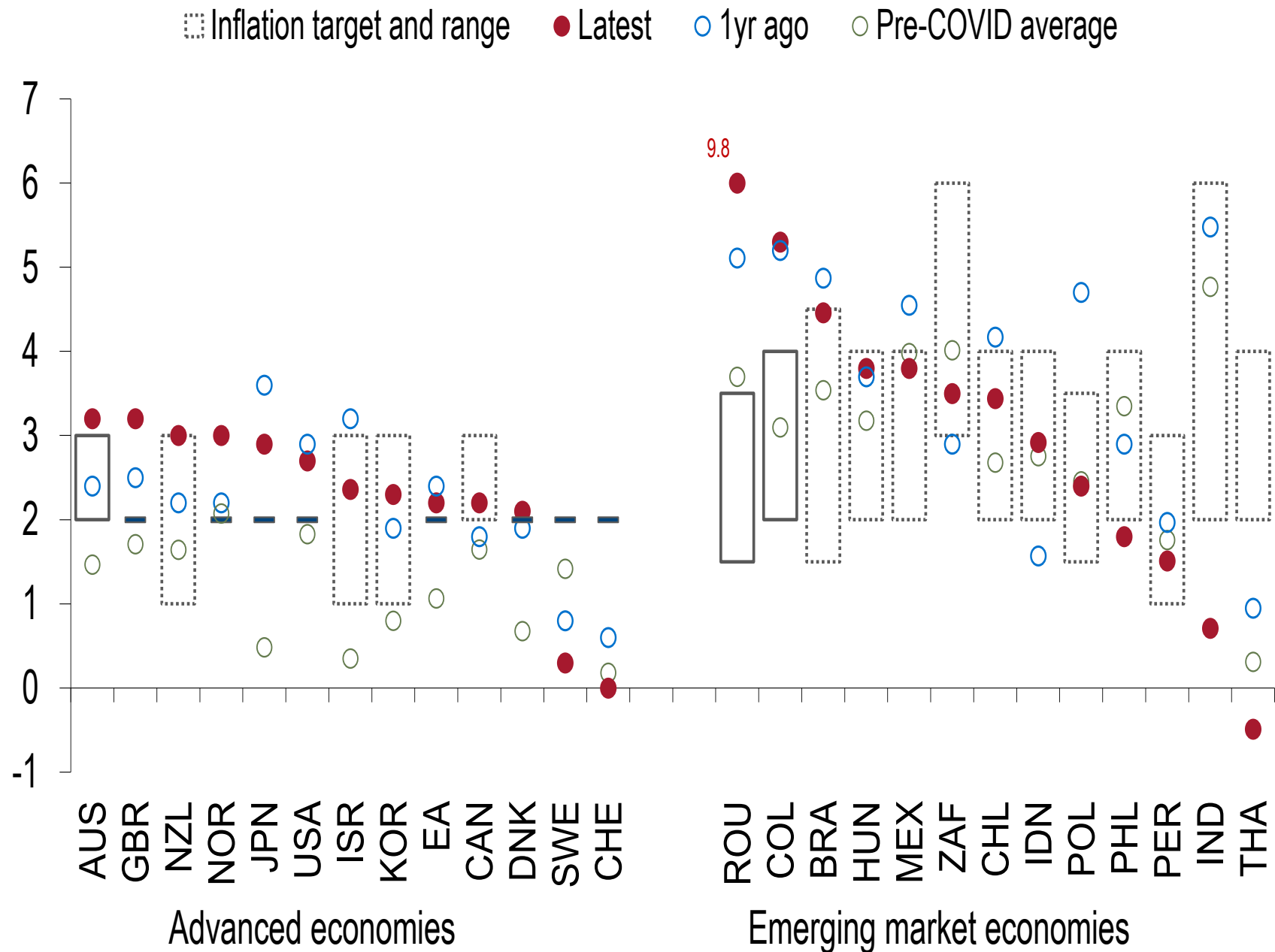


Sources: Bloomberg Finance L.P. and IMF staff calculations.
Note: Through April 28. Equities are domestic local currency benchmarks. Spreads are from cash market, not CDS.

Monetary Policy

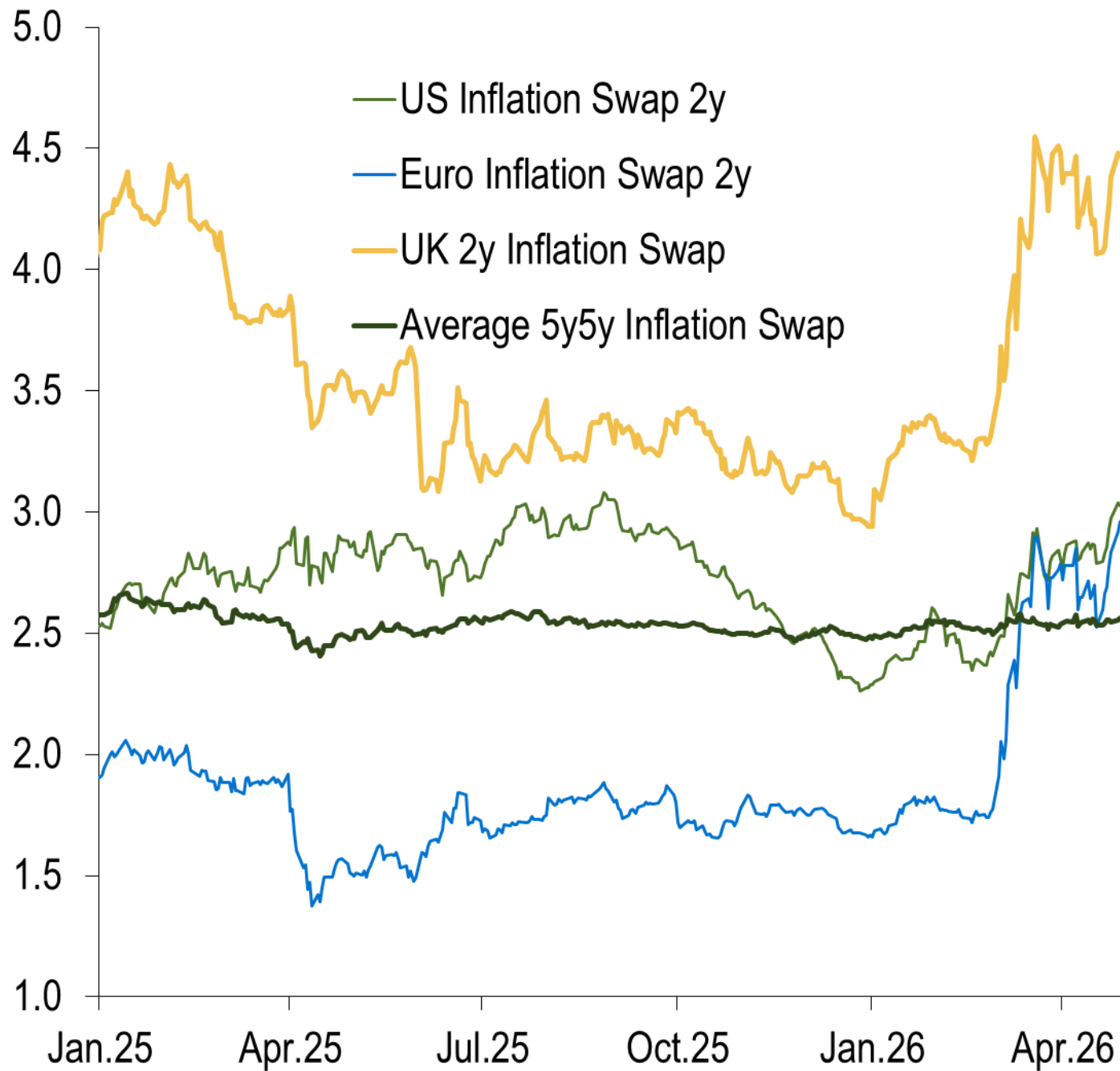
Inflation remains above target in many economies

CPI vs Inflation Target and Range
(Percent)



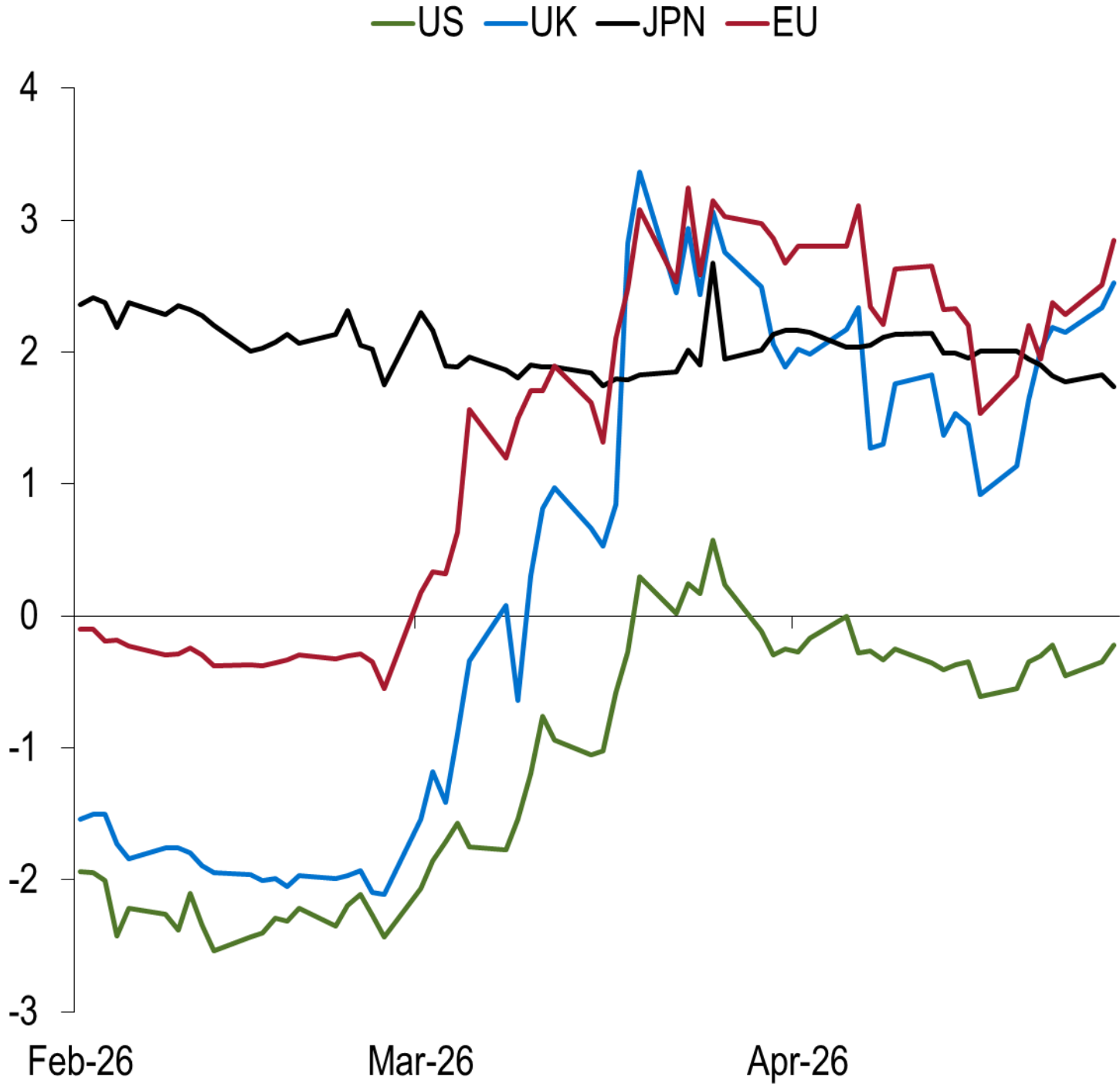
Near-term market inflation expectations have spiked sharply

Inflation Swaps
(Percent)



Markets are pricing in markedly tighter near-term monetary policy...

**Number of Hikes (+) or Cuts (-)
Priced in By December 2026**

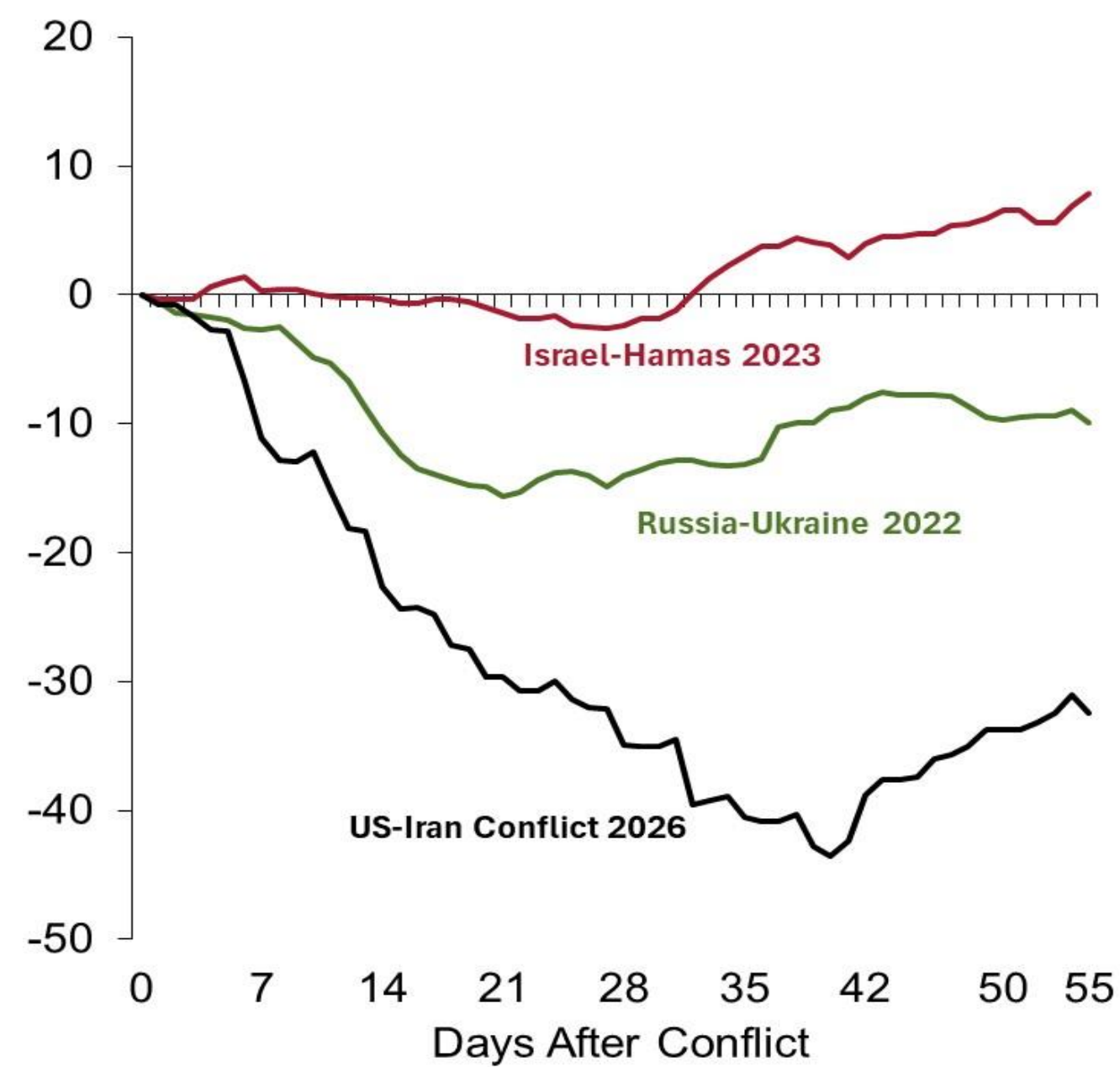


Sources: Bloomberg Finance L.P., and IMF staff calculations.
Note: Chart 2 utilizes market implied pricing from OIS curves.

EMDEs

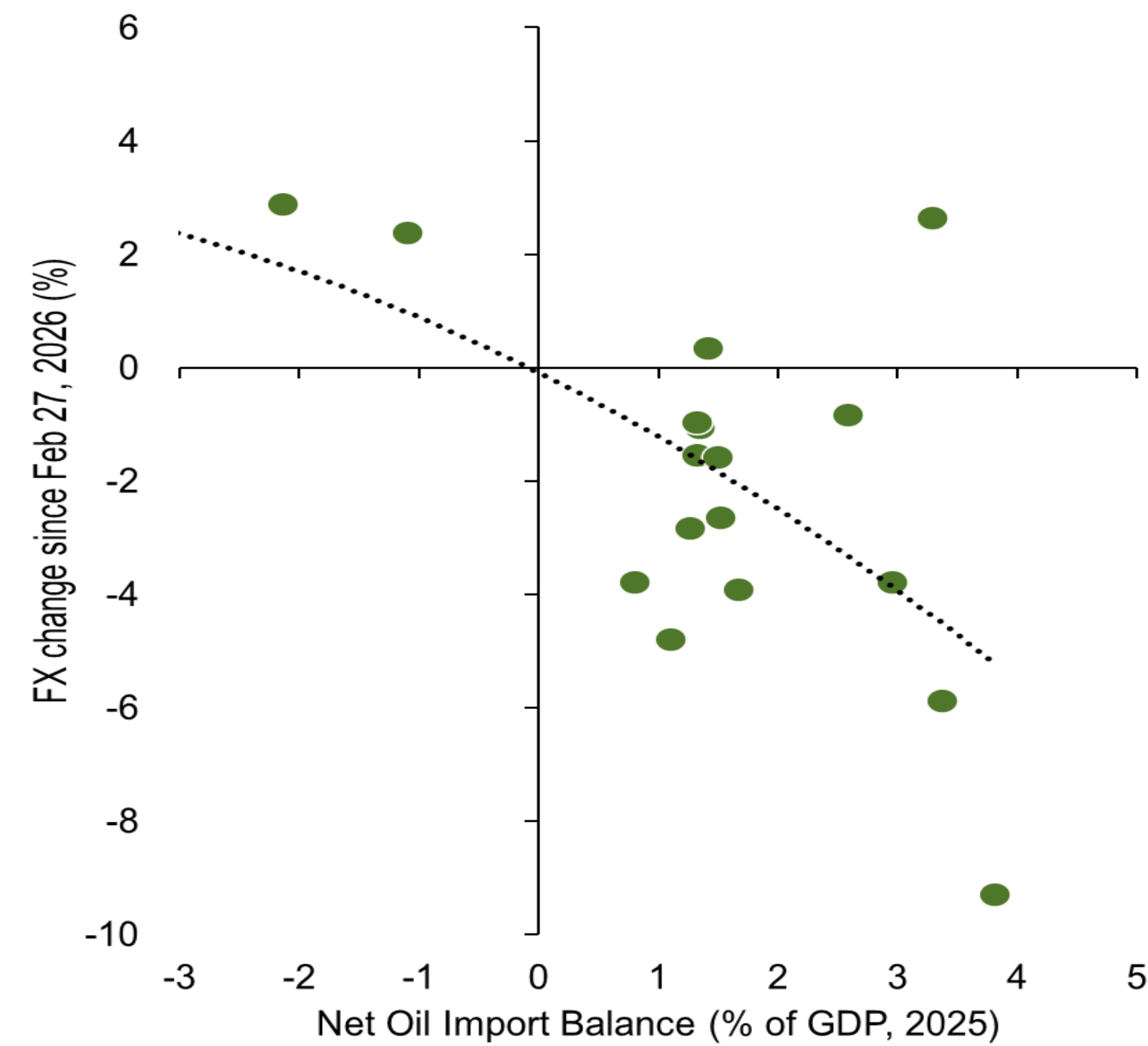
Portfolio outflows from EMDEs

Portfolio Flows: Equities and Local Currency Bonds
(Billions of US dollars)



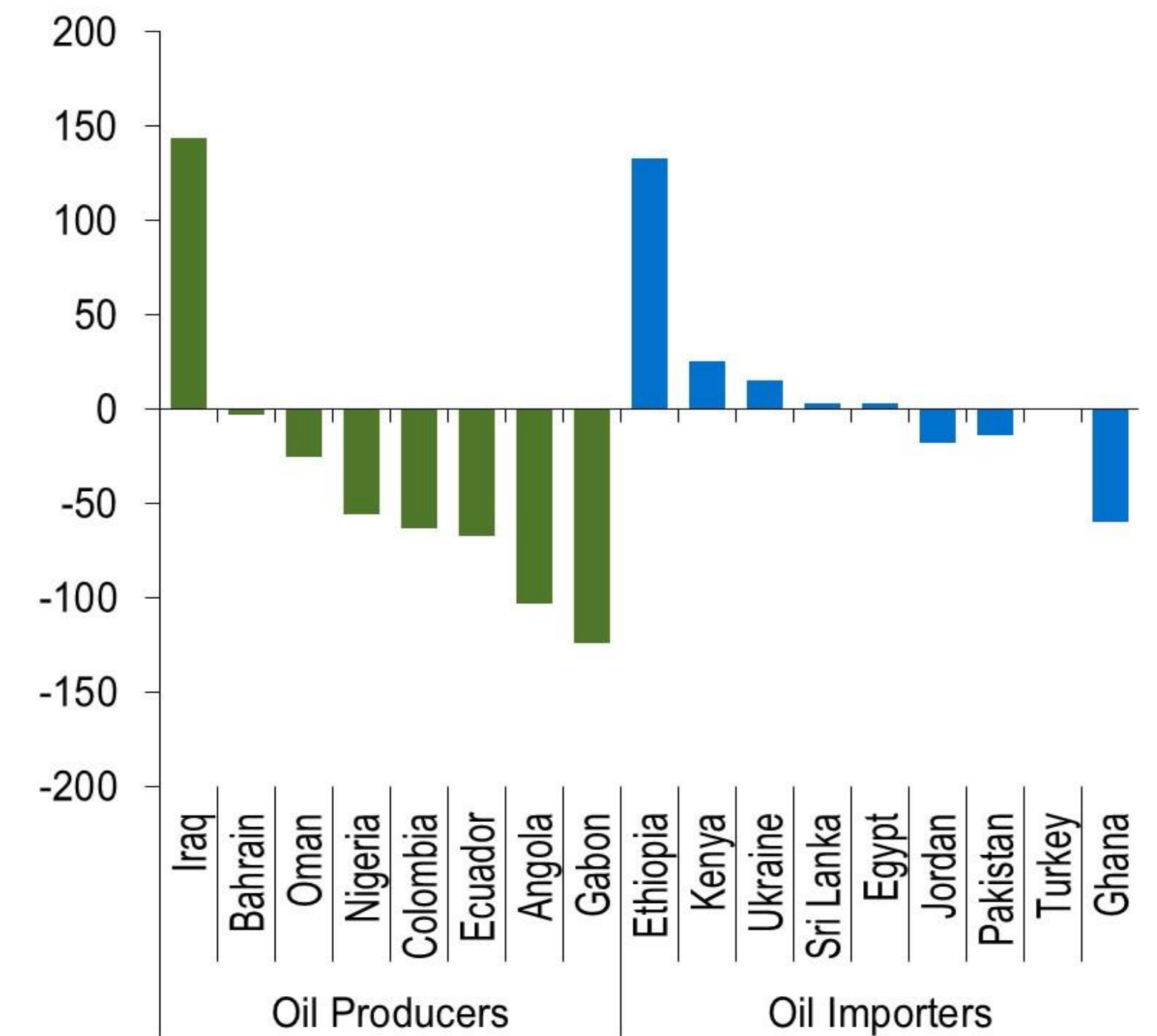
EMDE Currency performance

EM FX Performance
(Percent)



EMDE Sovereign spreads

EM HY Sovereigns Spreads, Change Since Conflict
(Basis points)



Sources: Bloomberg Finance L.P., IMF WEO, JPMorgan, and IMF staff calculations.

Notes: Chart 1 includes equity and local currency bond flows for an unbalanced sample of emerging markets that report daily data. Chart 3 includes countries with at least one sub-investment grade rating.

Financial Vulnerabilities

- Asset Valuations
- AI Vulnerabilities
- Hedge Funds
- Private Credit
- Medium Term Vulnerabilities

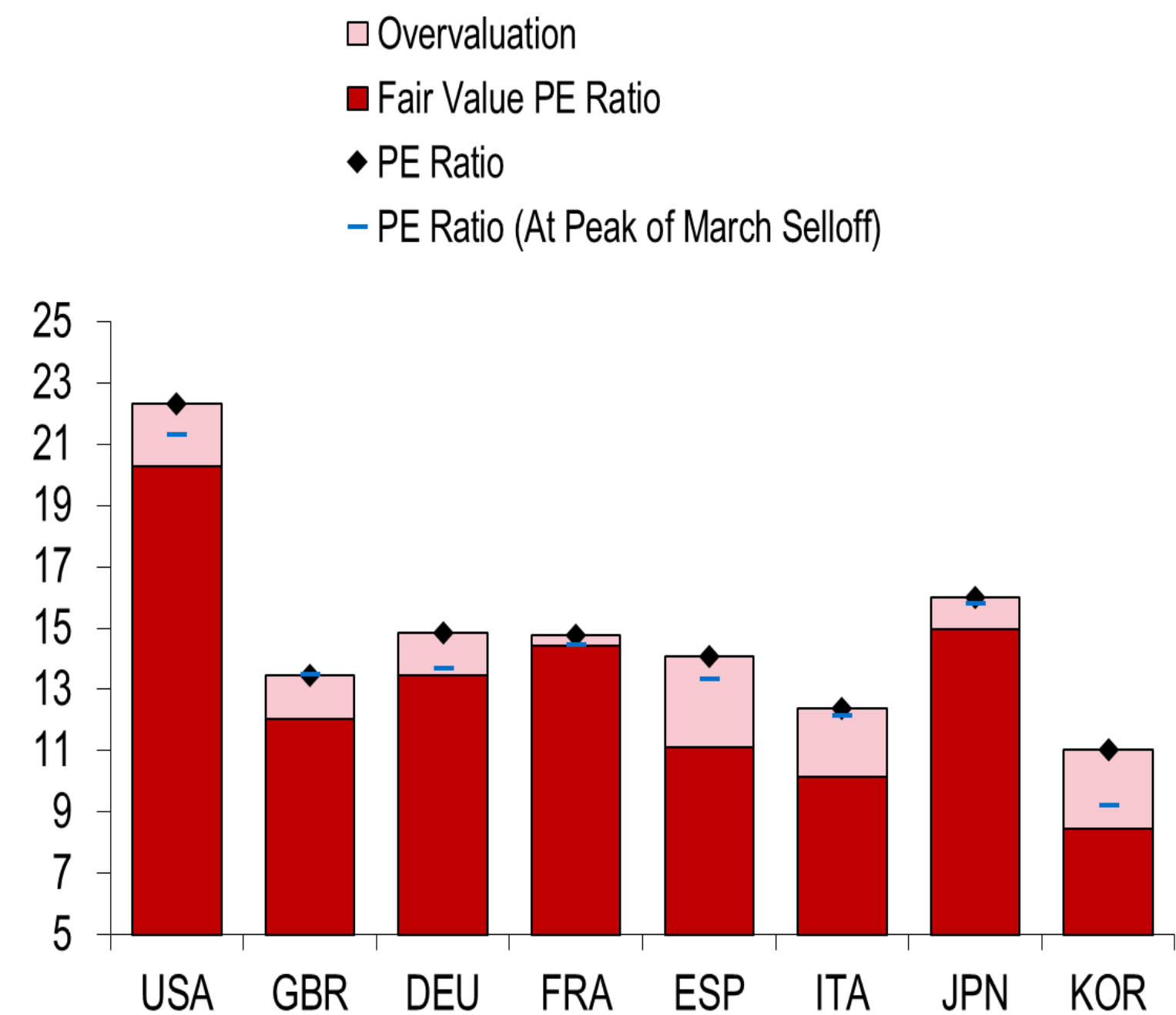
Equity Market Valuations

Current equity valuations appear stretched across regions...

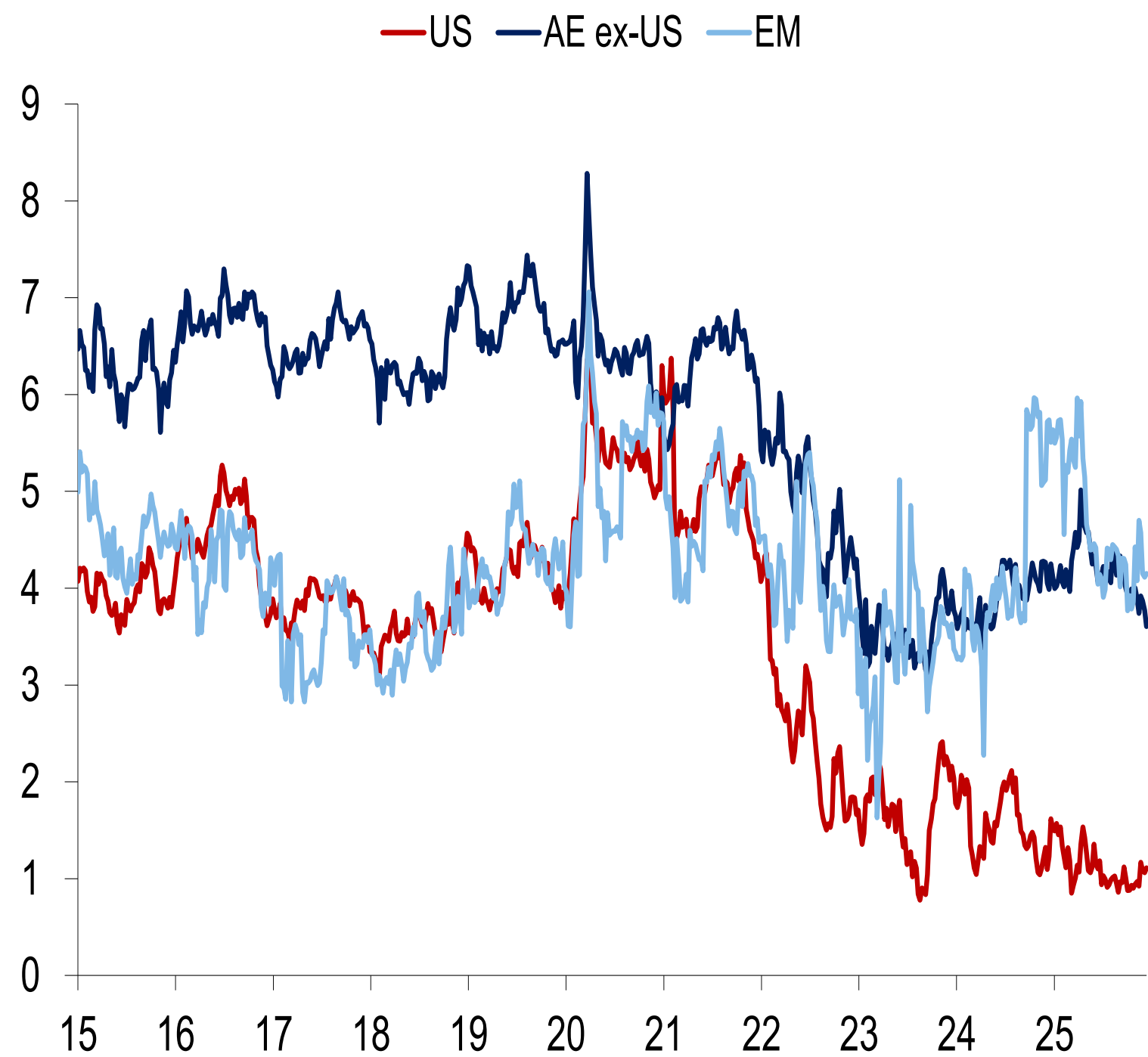
With equity risk premiums compressed at around historical lows amid strong risk appetite

...while concentration remains high in most markets.

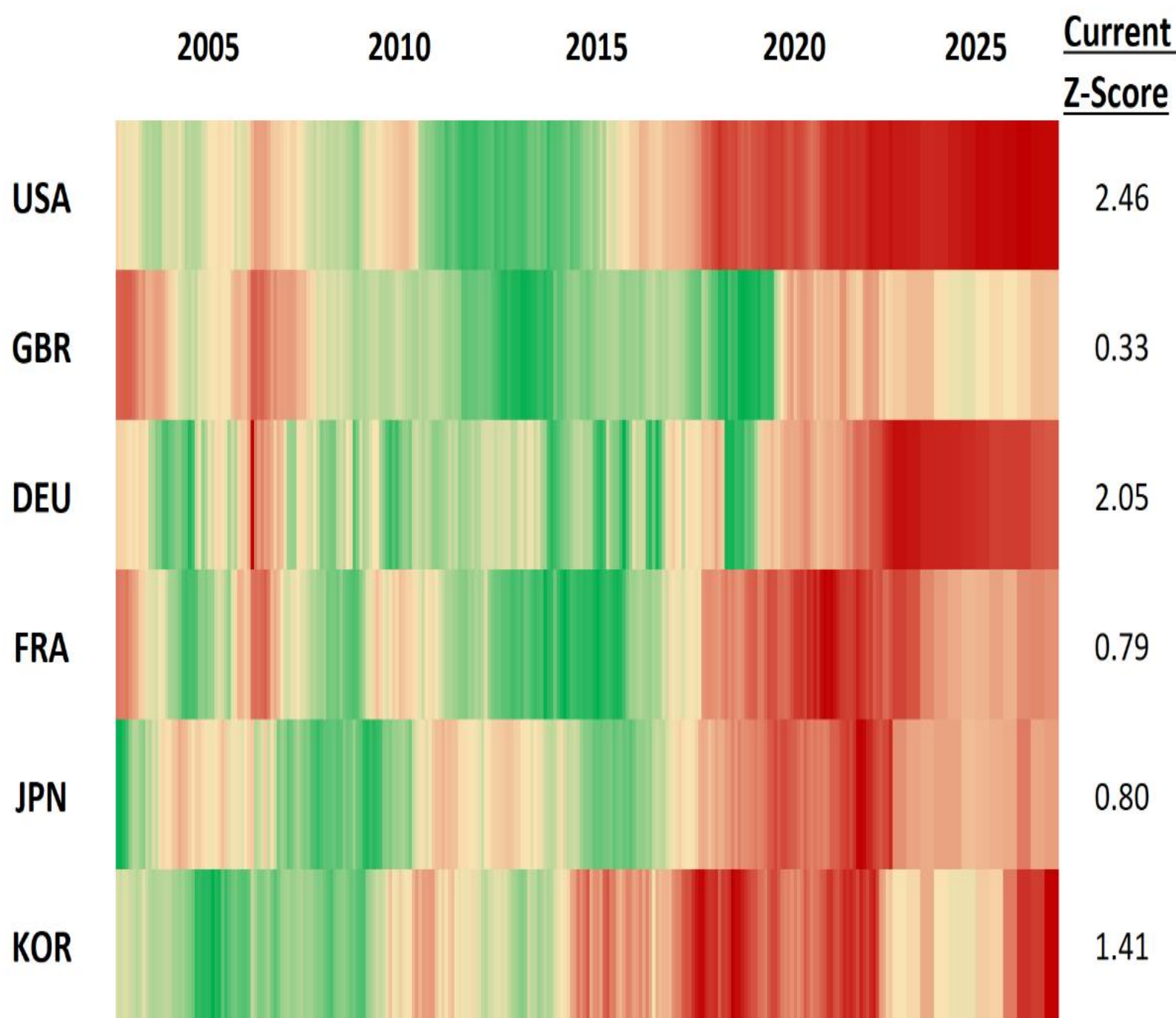
12-month Forward Price-to-Earnings Ratio and Model-Based Overvaluation Estimates (Multiples)



Equity Risk Premium (Percent)



Concentration Risk Heatmap (Z-Score of Herfindahl-Hirshman Index)

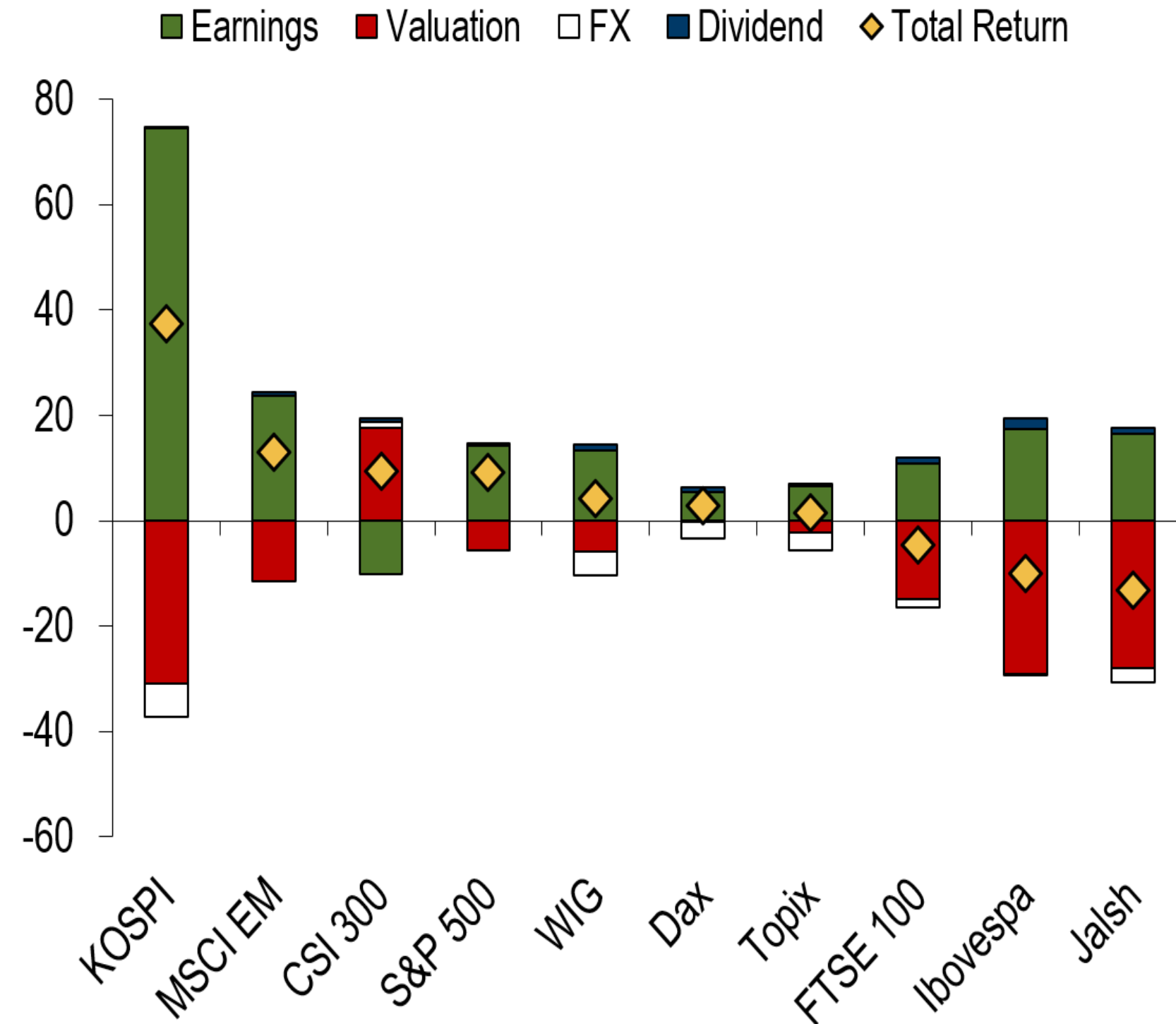


Sources: Bloomberg Finance L.P., LSEG DataStream, and IMF staff calculations.
Notes: Chart 1 compares the actual 12-month forward price-to-earnings ratio with a model implied fair value estimate based on the previous five years of weekly data. In chart 2, the colors correspond to individual countries, with red more concentrated and greener less concentrated. In chart 3, trading volumes are based on the four most liquid equity indices and ETFs with option contracts linked to these underlying assets. Option trading volume are in terms of underlying notional.

Earnings

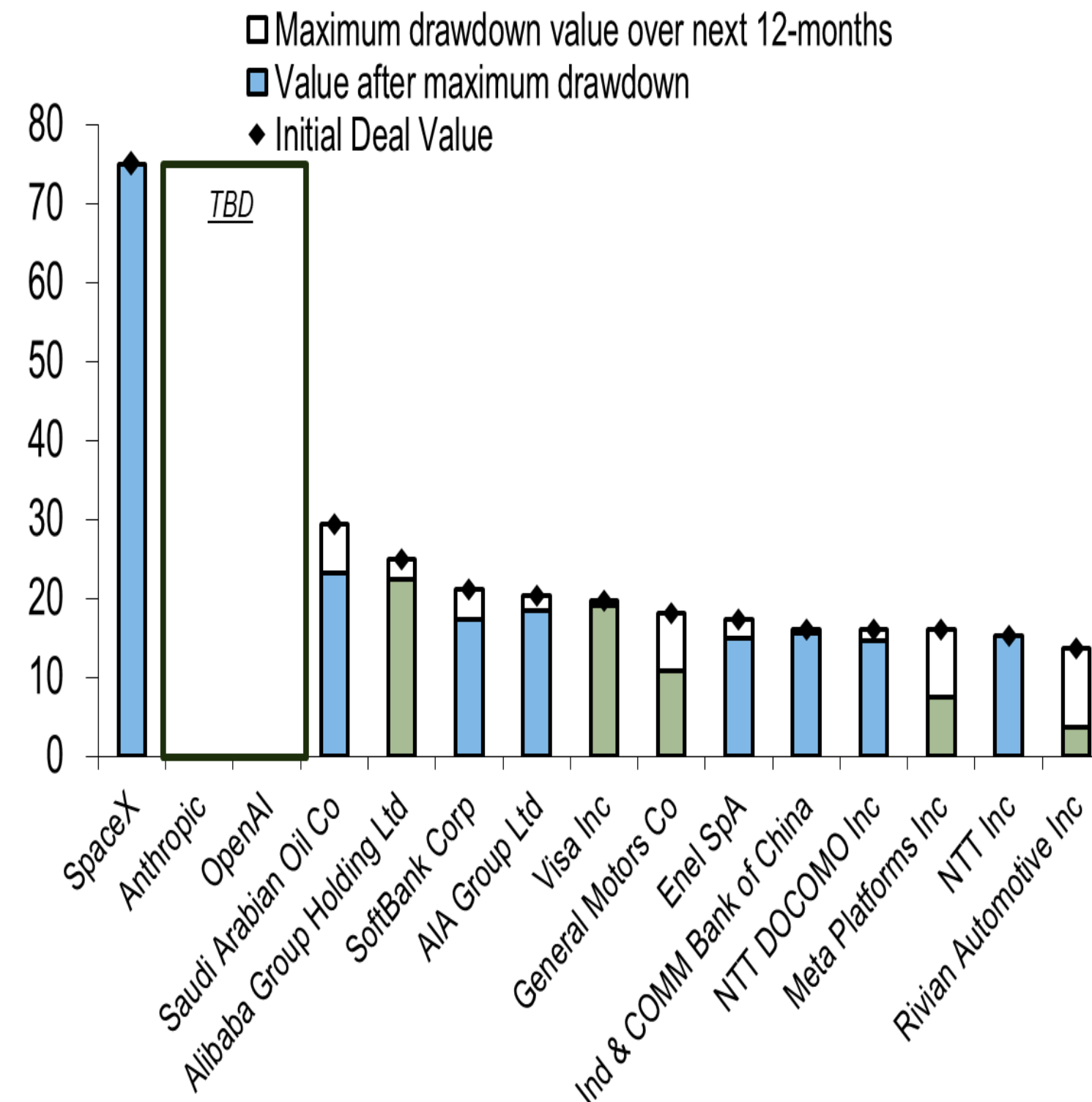
Strong earnings have carried equity markets, despite drag on valuations

Total Return Decomposition since Start of War in Middle East
(Percent change)



SpaceX largest IPO ever — large IPOs have history of preceding sizeable drawdowns

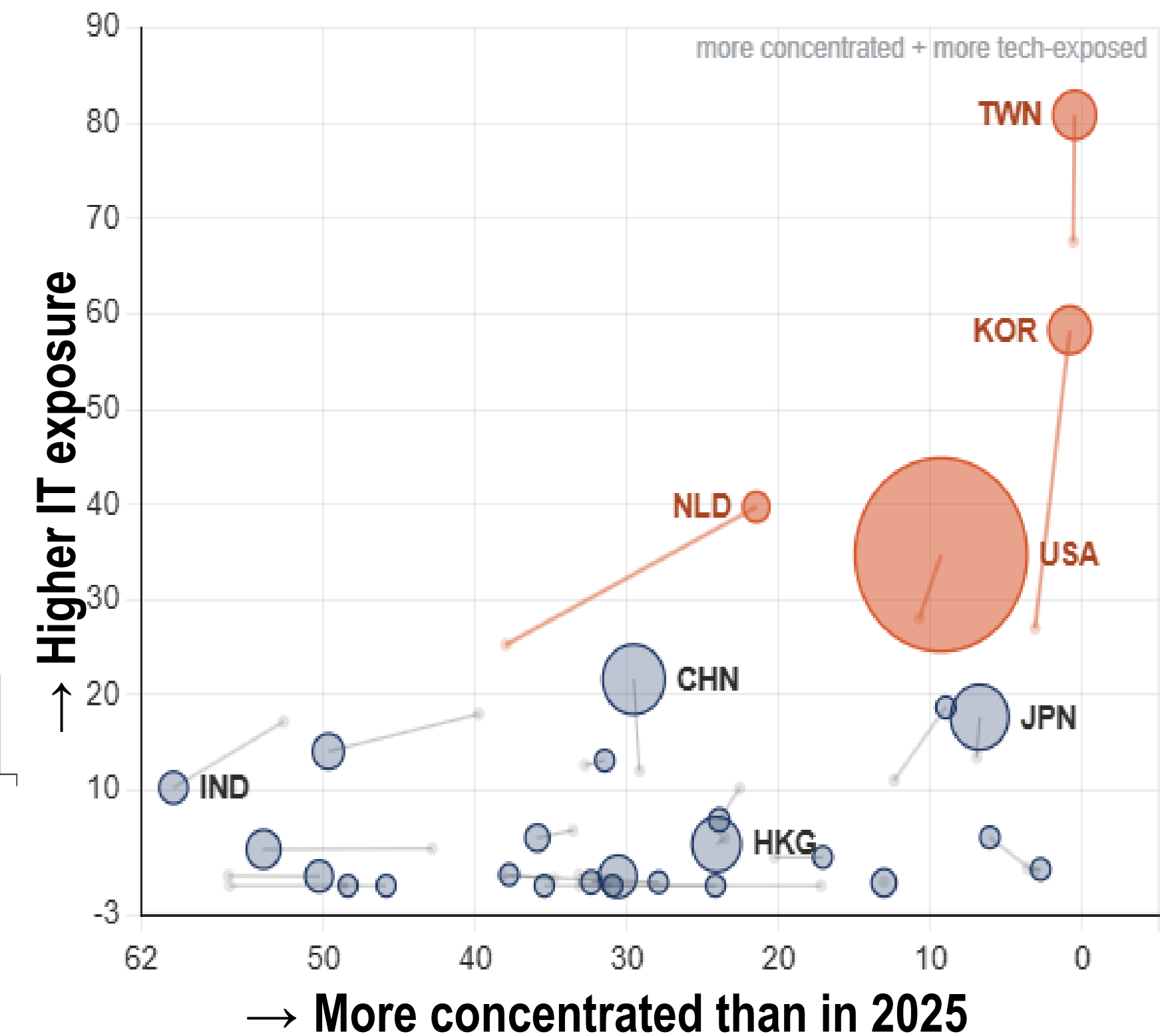
Deal Size of Largest Global IPOs and Max Drawdowns in the following 12 months
(USD billions)



Equities increasingly concentrated, especially where tech exposure is high

Concentration vs IT Exposure

(Concentration Risk: x-axis; IT Share of Index: y-axis; market cap: bubble size)



Source: Bloomberg Finance L.P.; LSEG DataStream; and IMF staff calculations.

Note: Panel 1 shows the total return decomposition in USD since the start of the war in the Middle East up to June 22, 2026. Earnings is the percent change in 12-month forward expected earnings per share. Valuation is the percent change in 12-month forward price to earnings ratio. In panel 2, blue-colored bars are US listings and green is non-US listings.

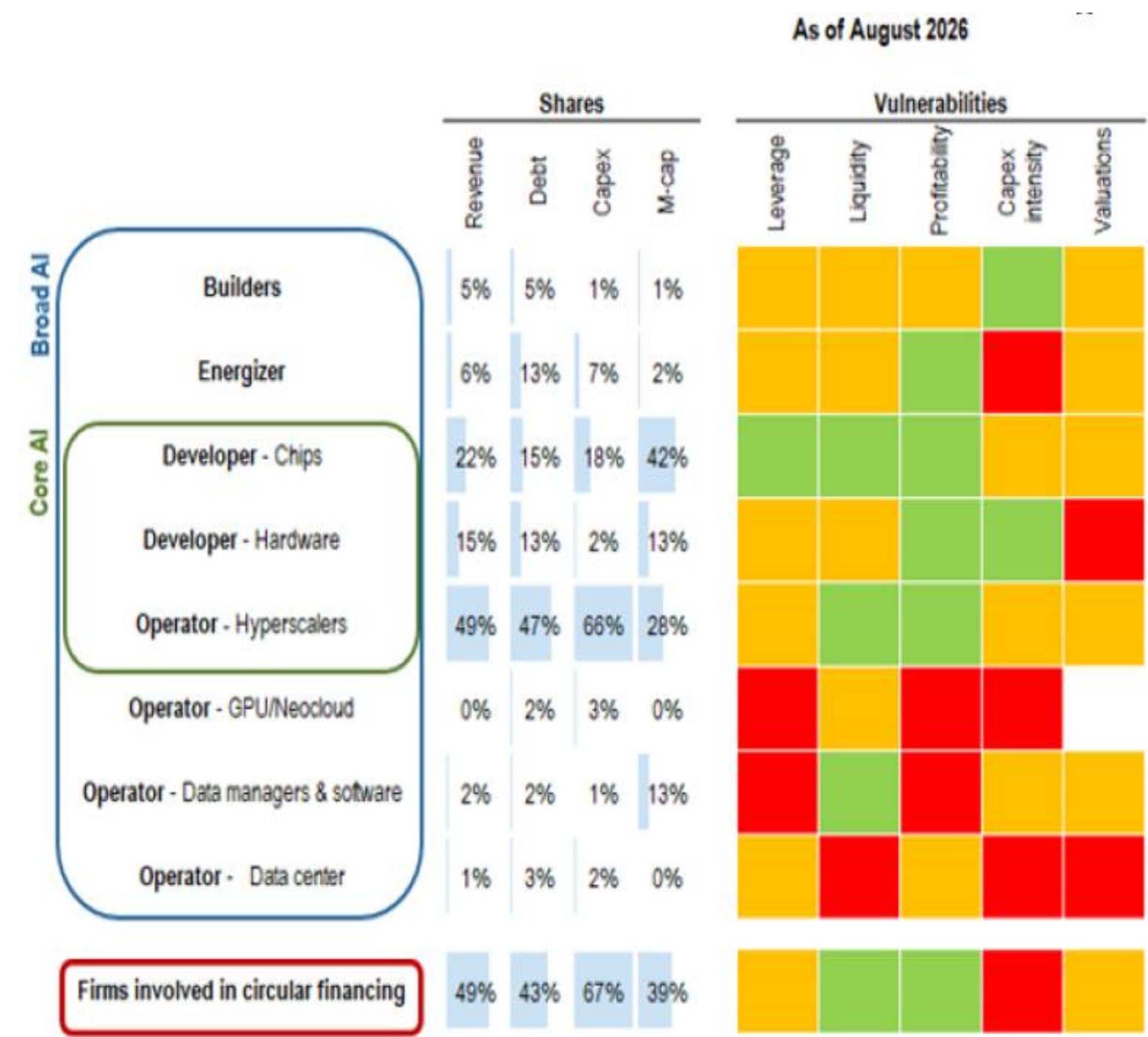
AI Vulnerabilities

AI firms exhibit uneven balance sheet vulnerabilities, with “circular investment” structure adding to opacity and concentration risks

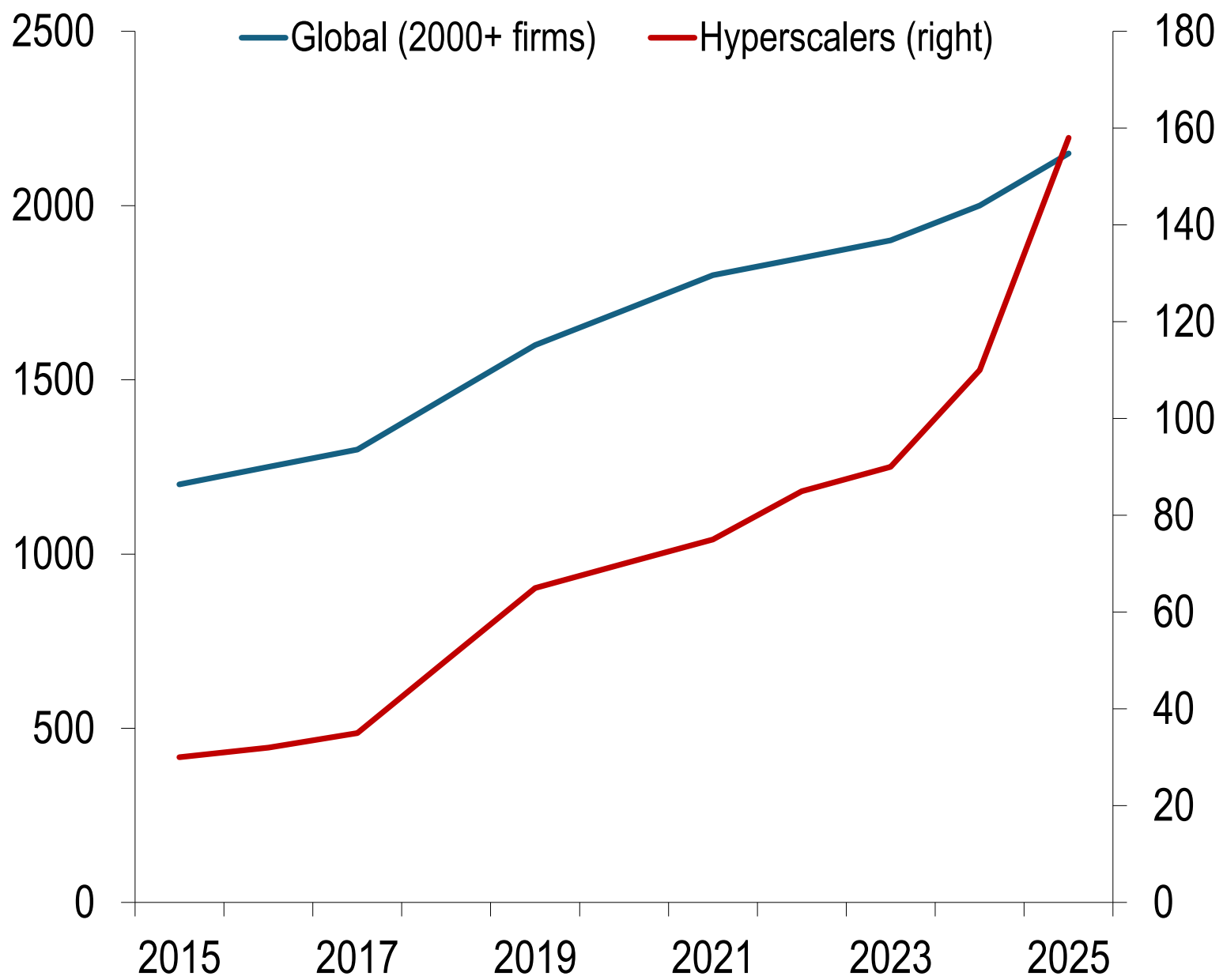
Rapid innovation shortens useful life of GPUs/advanced chips, rendering expected earnings increasingly sensitive to depreciation

AI capex and issuance is rapidly increasing

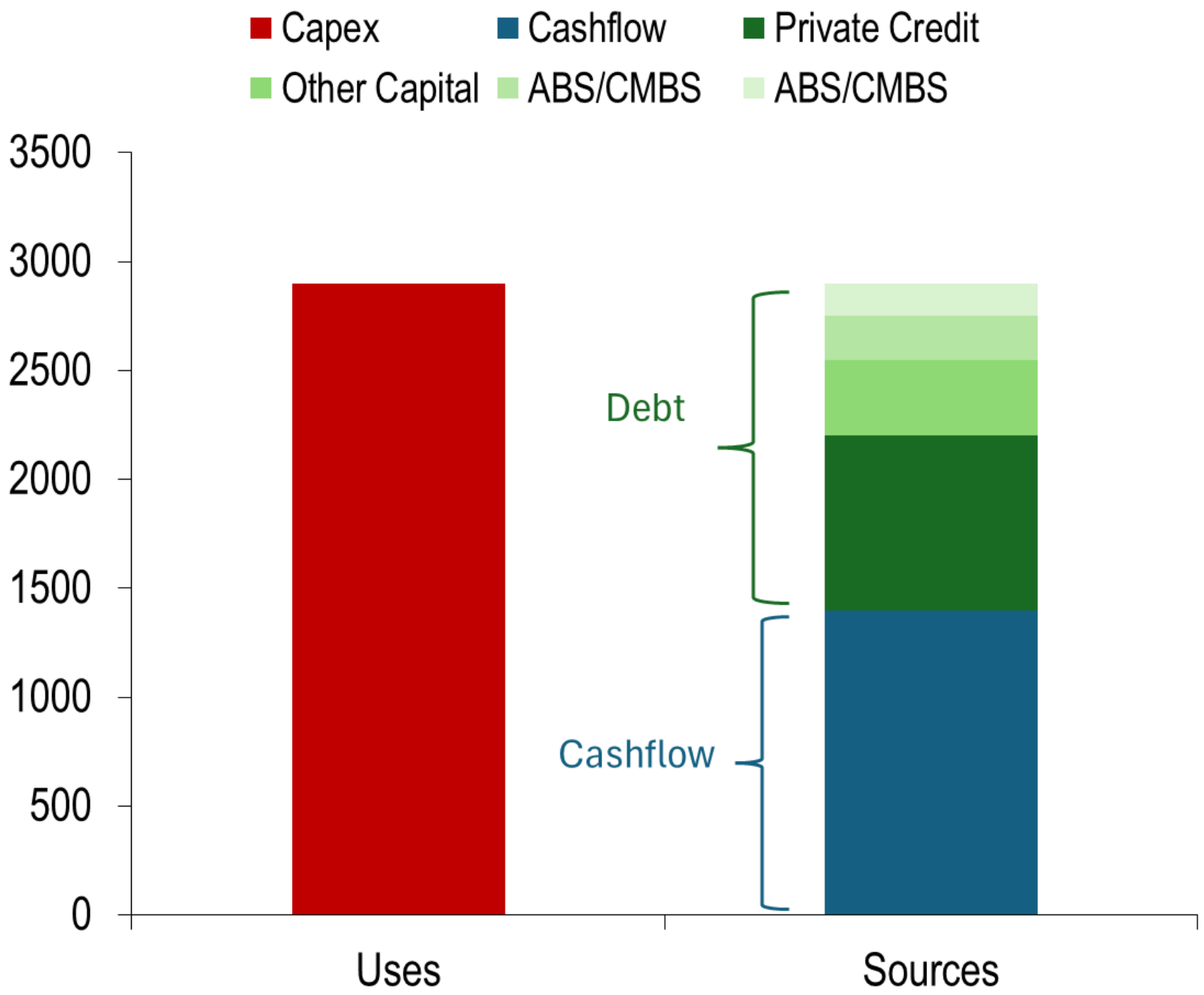
Market Share and Vulnerabilities of US Listed AI-related Firms



Depreciation: Global Firms vs Hyperscalers (Billions of U.S. dollars)



Data Center Capex through 2028 (Billions of US dollars)



AI Valuations

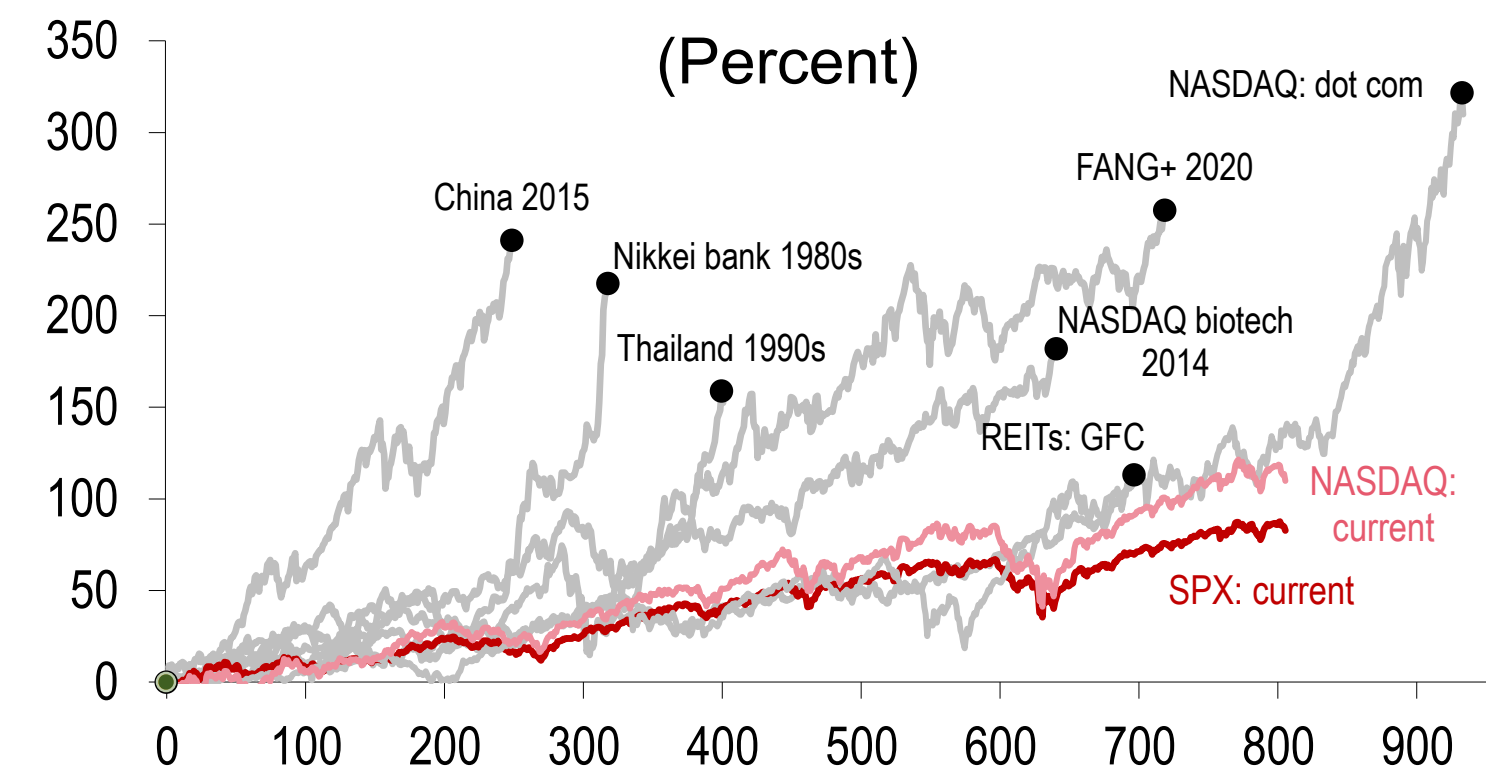
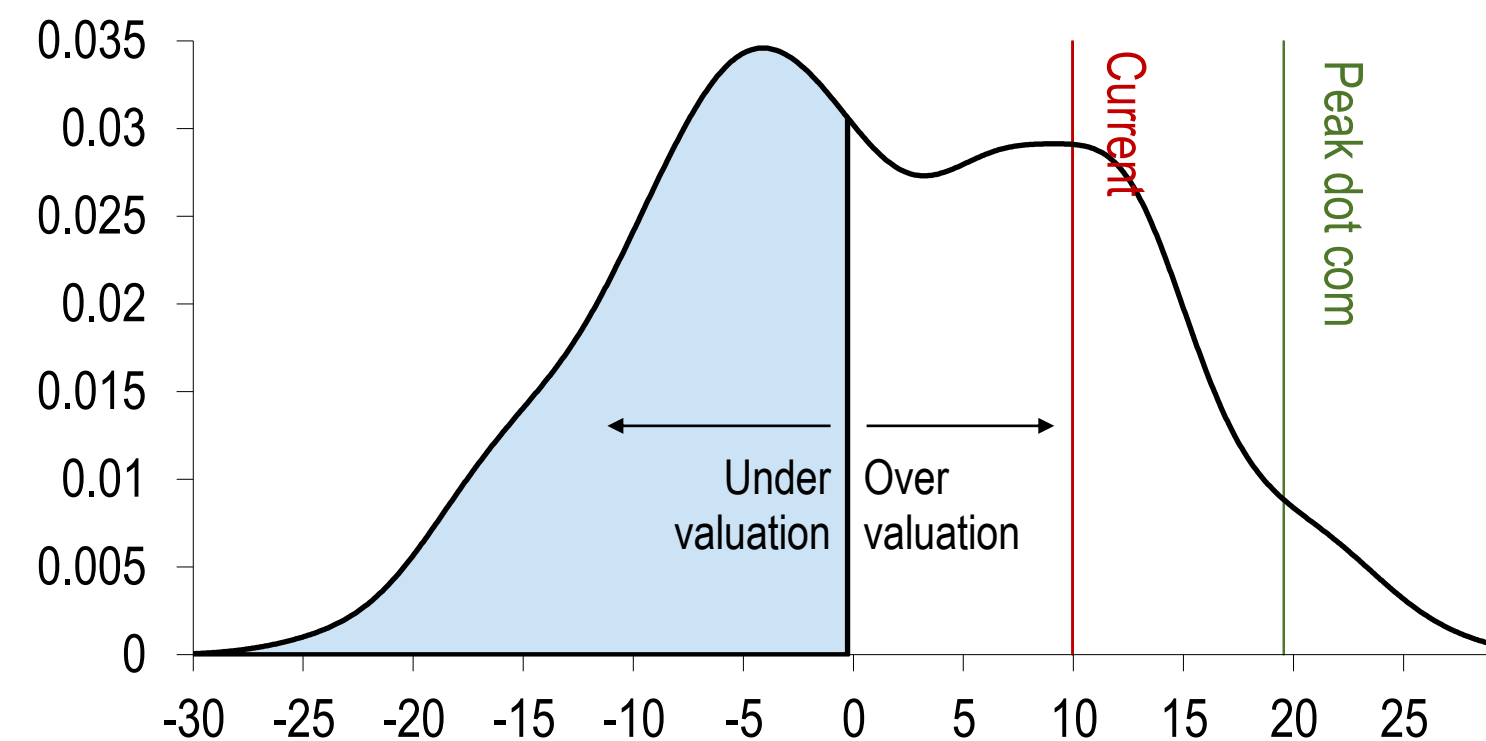
AI-led CAPEX boom underpins rising US equity valuations and returns, with both metrics presently below past bubble episodes

Rising scale and concentration warrant monitoring given dominant role of US market

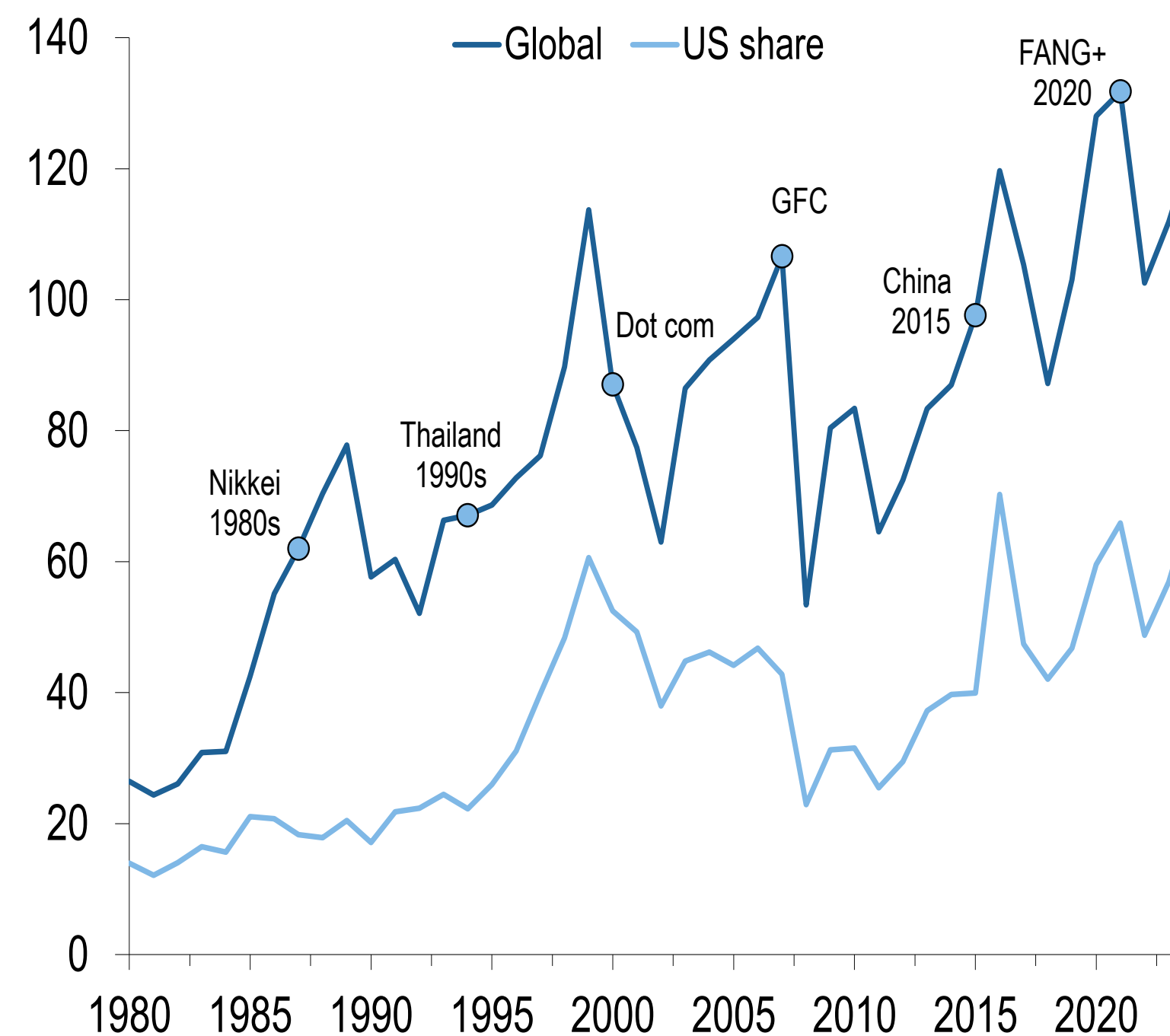
Markets rapidly churn through AI winners and losers.

(Top) Kernel Density of Historical Over/Under-valuation for S&P 500
(Below) Cumulative Stock Returns Across Past 'Bubble' Episodes

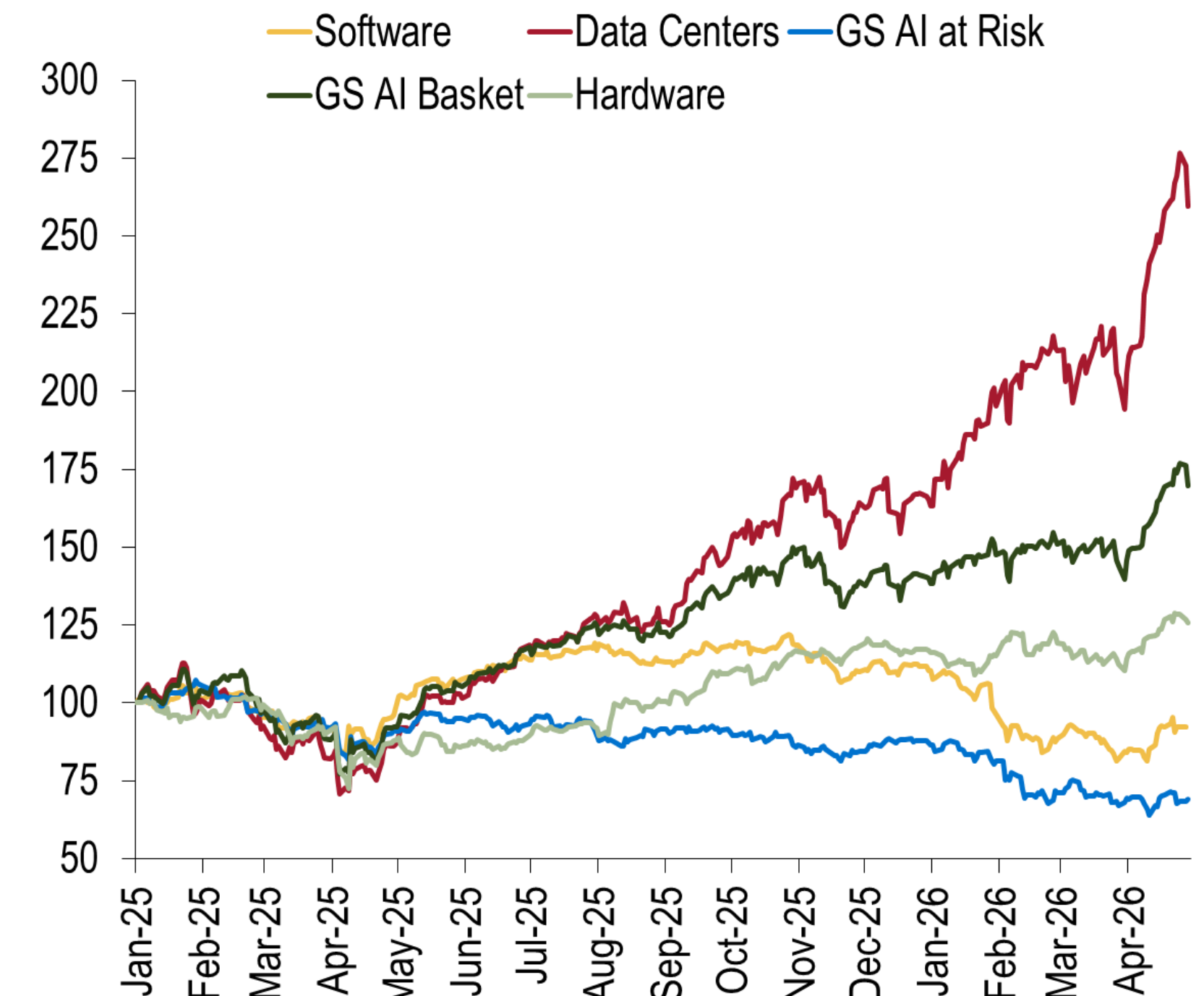
(Density, y-axis; percentile points, x-axis)



Global Market Cap to World GDP
(Percent)



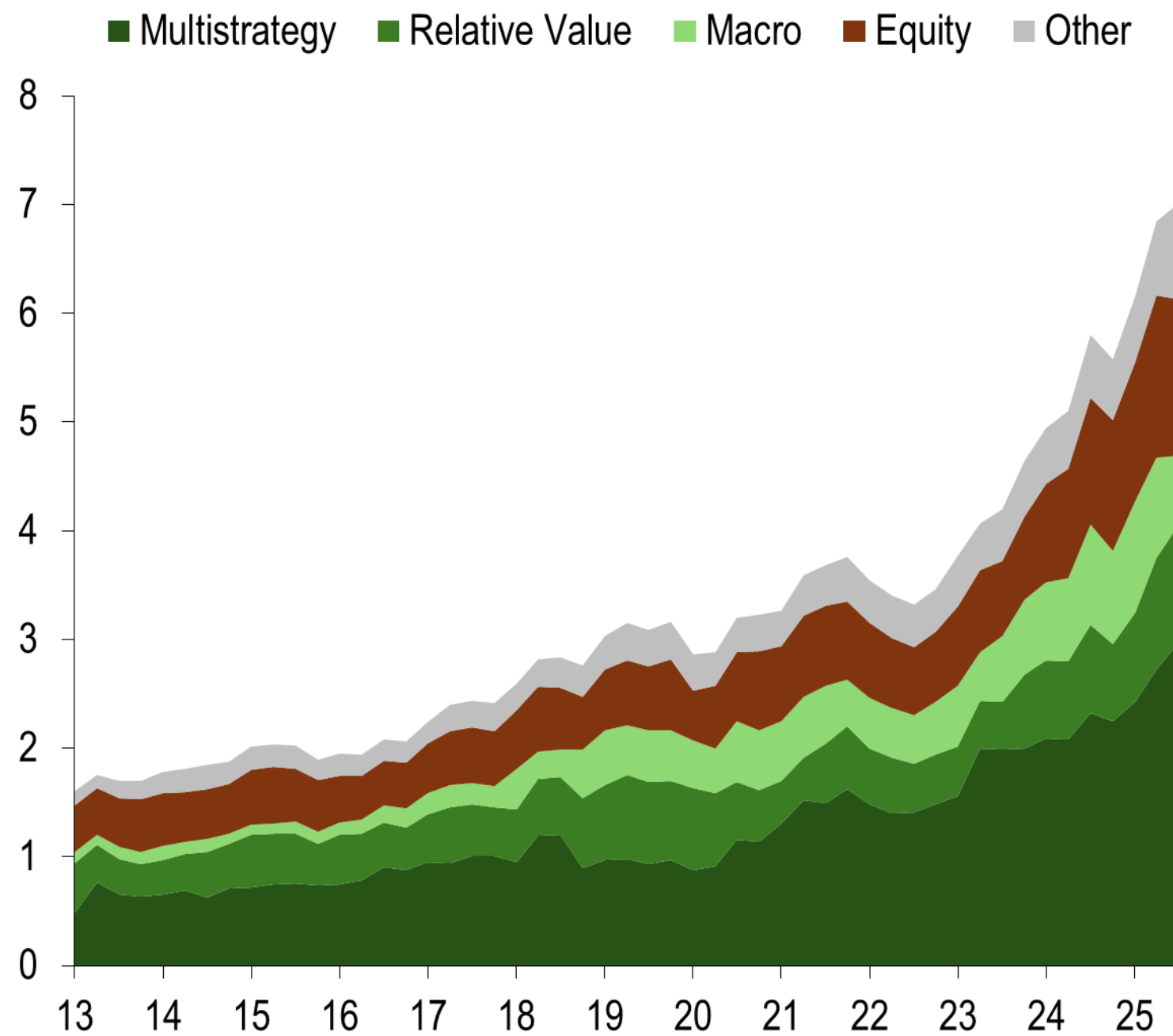
Equity Sector Performance by AI Classification
(Indexed to Jan 1, 2025)



Hedge Funds

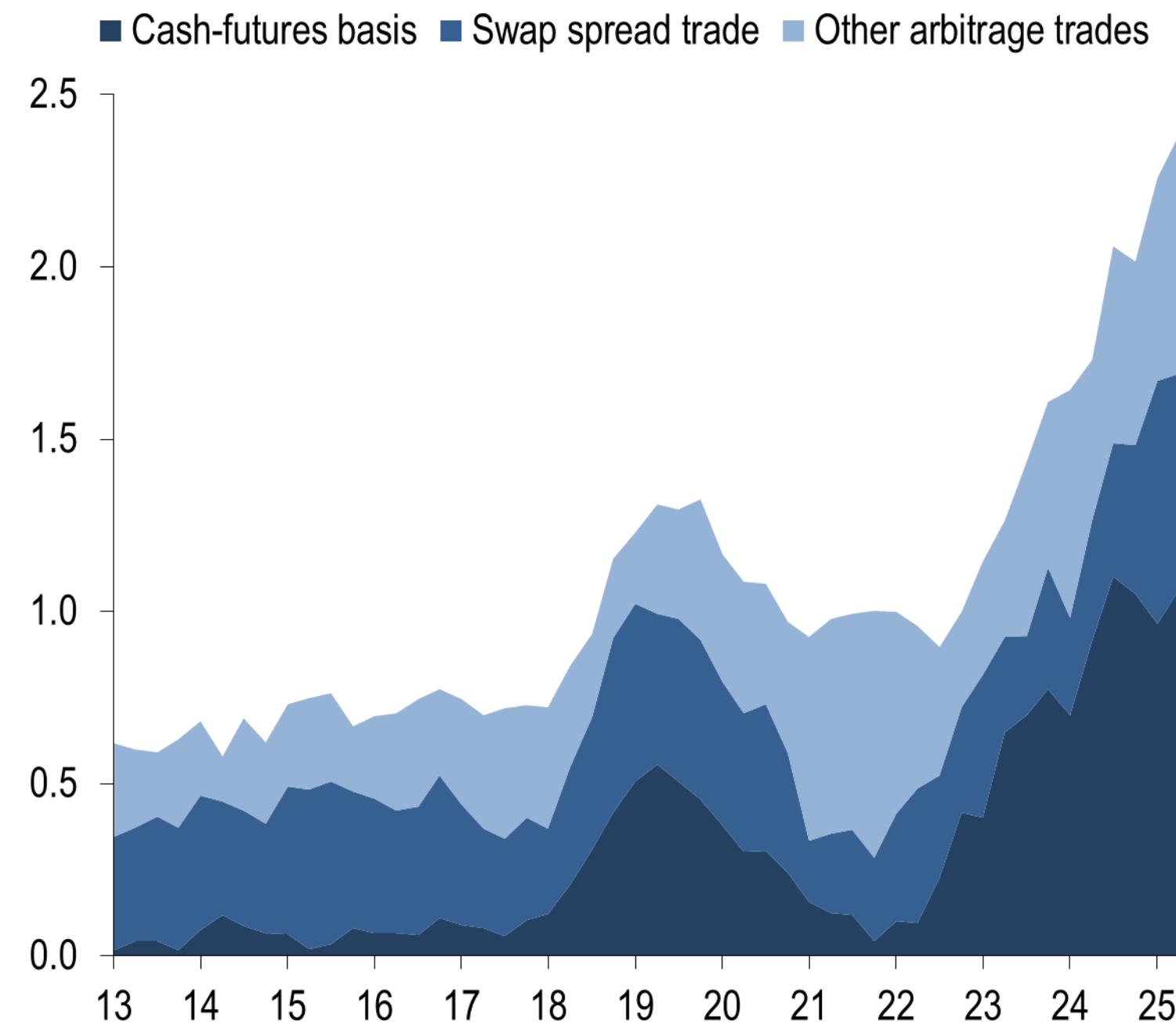
Multi-strategy, relative value and macro hedge funds have increased their prime brokerage and repo borrowing sharply.

Borrowing by Hedge Fund Strategy
(Trillions of US dollars)



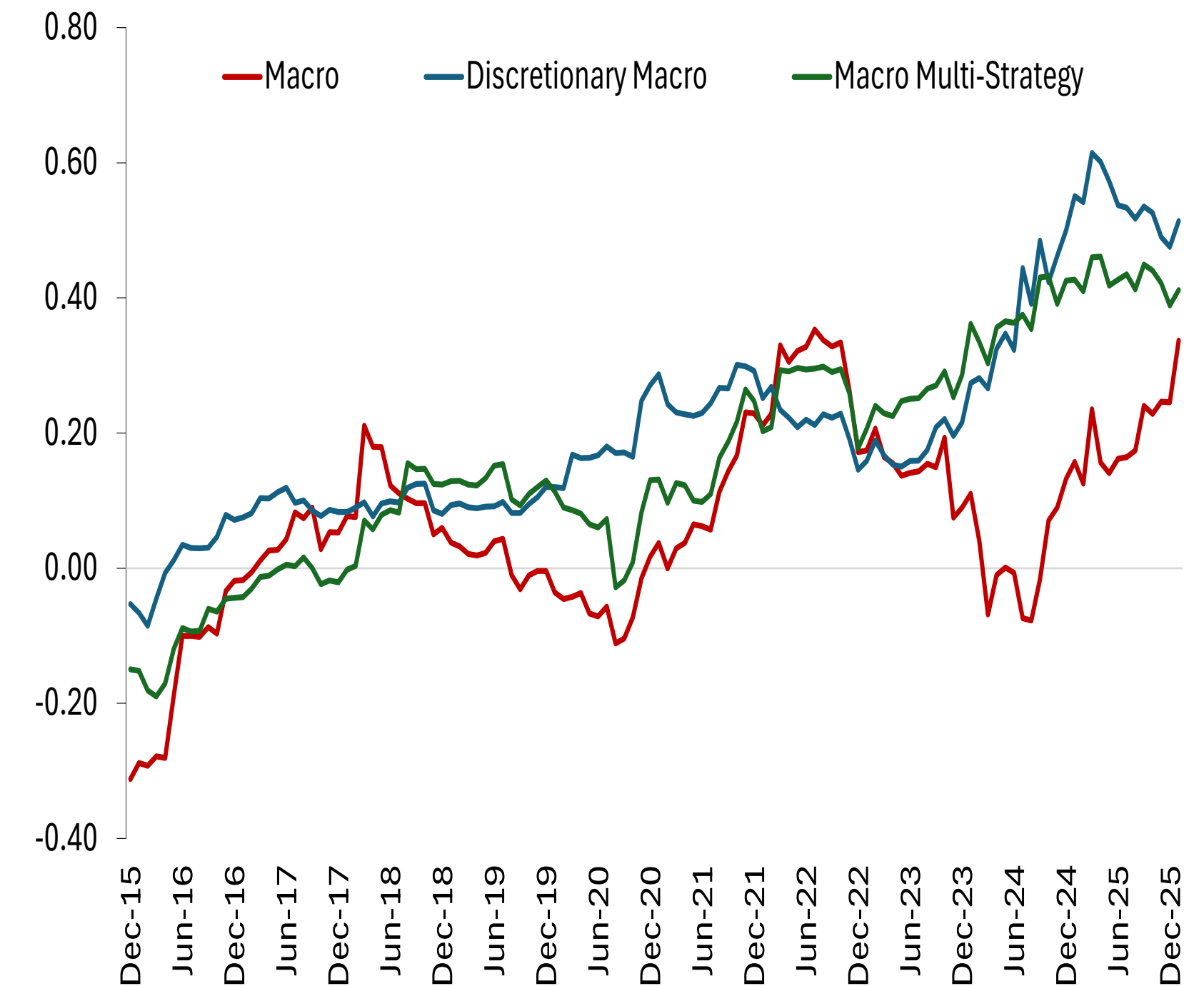
Leveraged trades are a growing part of the Treasury market.

Relative Value Trades in the US Treasury Market
(Trillions of US dollars)



Hedge fund exposure to EM carry trades is historically elevated.

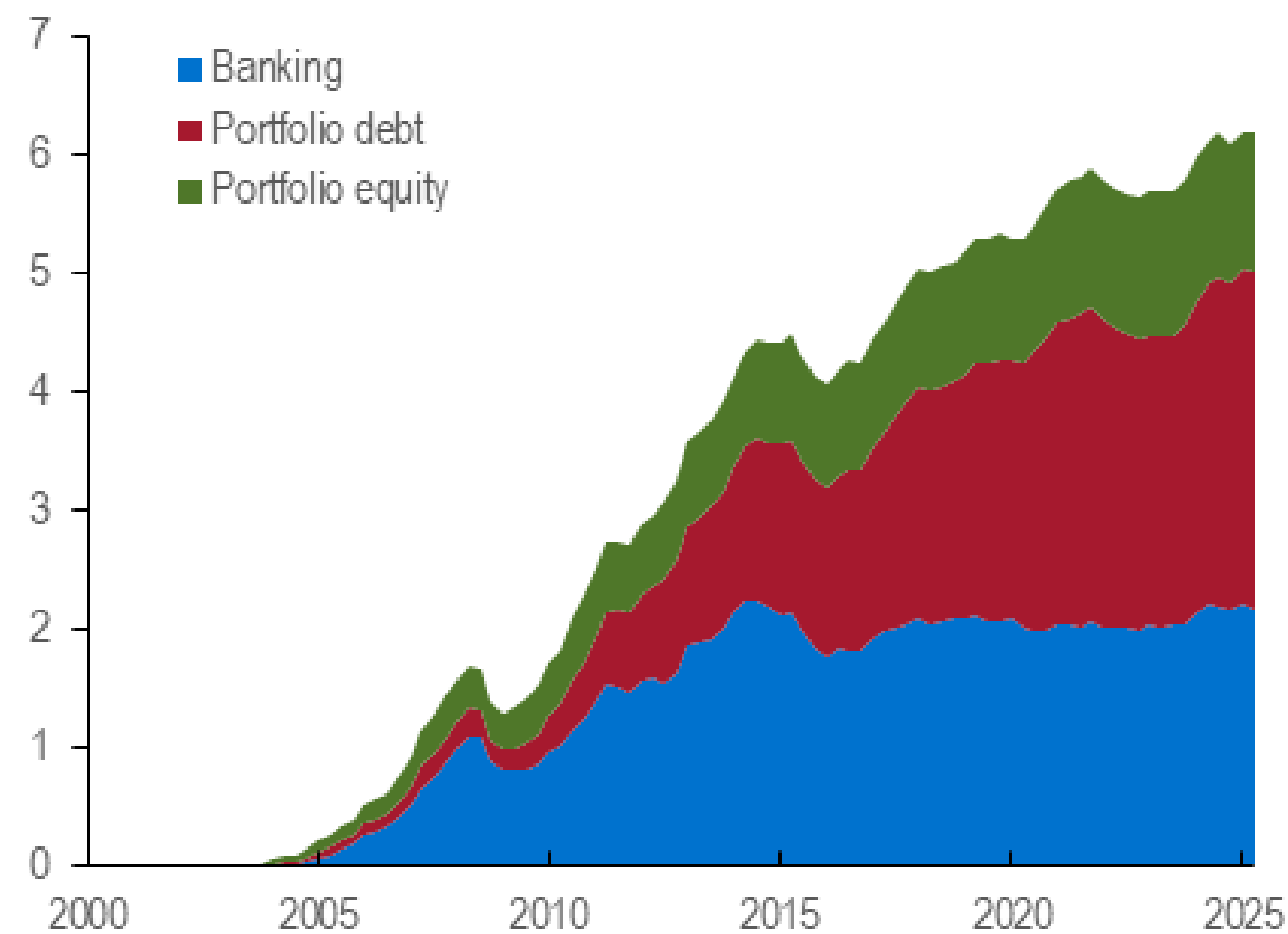
Regression Betas of Hedge Fund Returns on EM Carry
(Rolling 12-month beta, monthly return indices since 2013)



NBFI Flows to EMs more Sensitive to Shifts in Global Risk

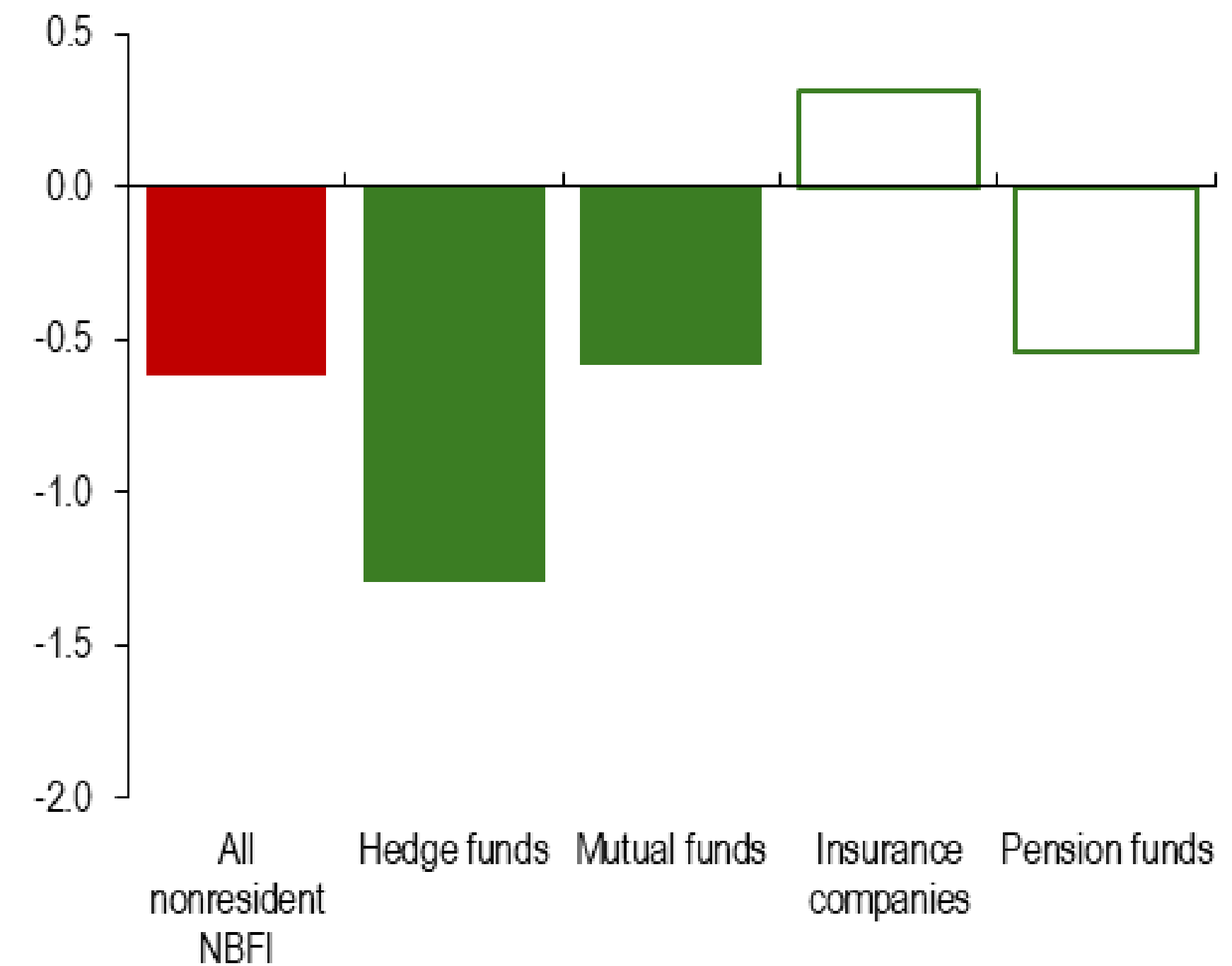
Since the GFC, EMs have received substantial cross-border portfolio flows, especially debt flows.

Cumulative Nonresident Portfolio and Banking Flows
(Trillions of dollars)



Nonresident NBFI, especially investment funds and hedge funds, decrease their EM investments more than resident investors when global risk rises.

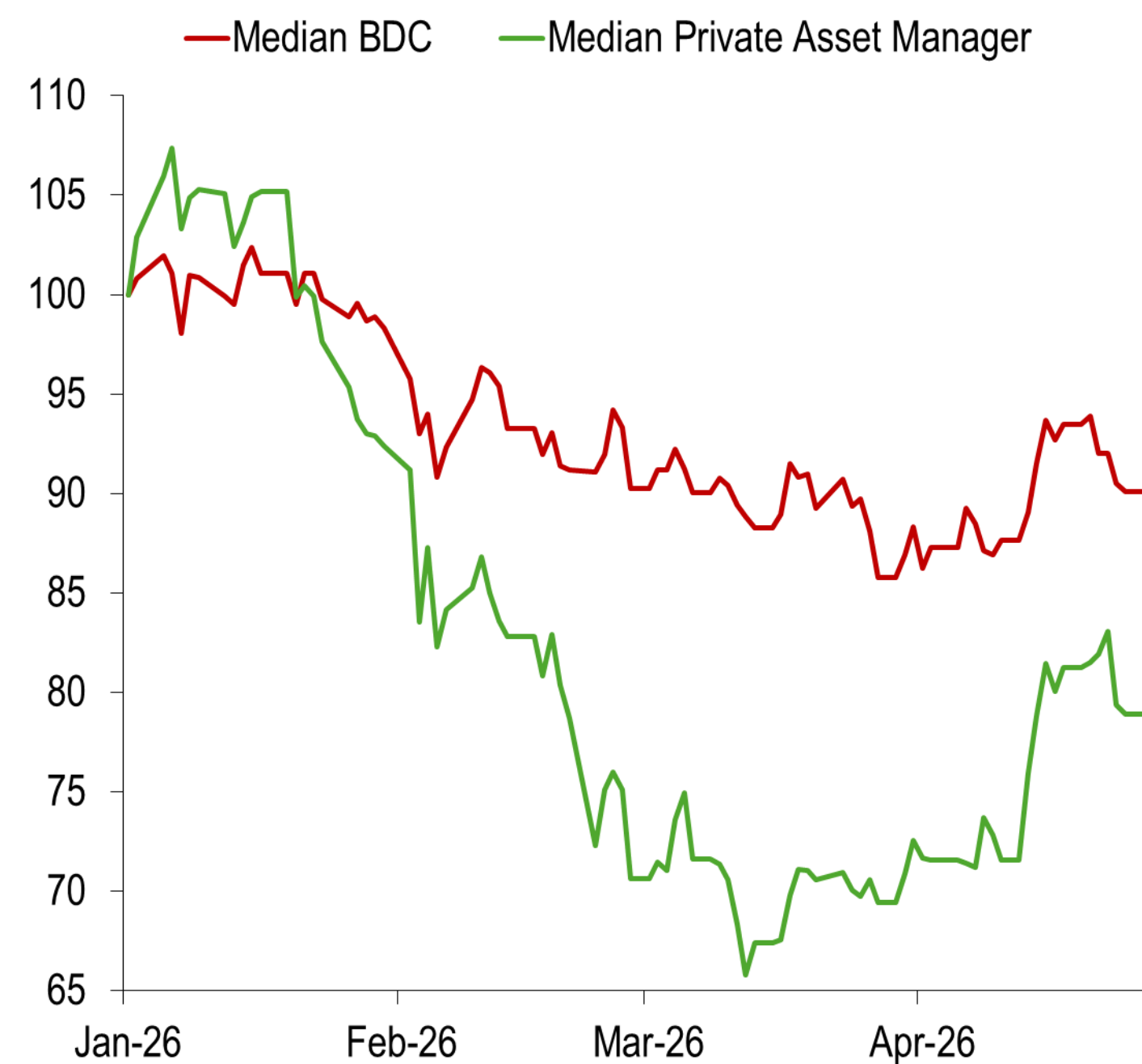
Change in Nonresident Investments
after an Increase in the VIX
(Percentage points, relative to residents)



Private Credit and Cross-border Bank-NBFI Links Pose Medium Term Risks

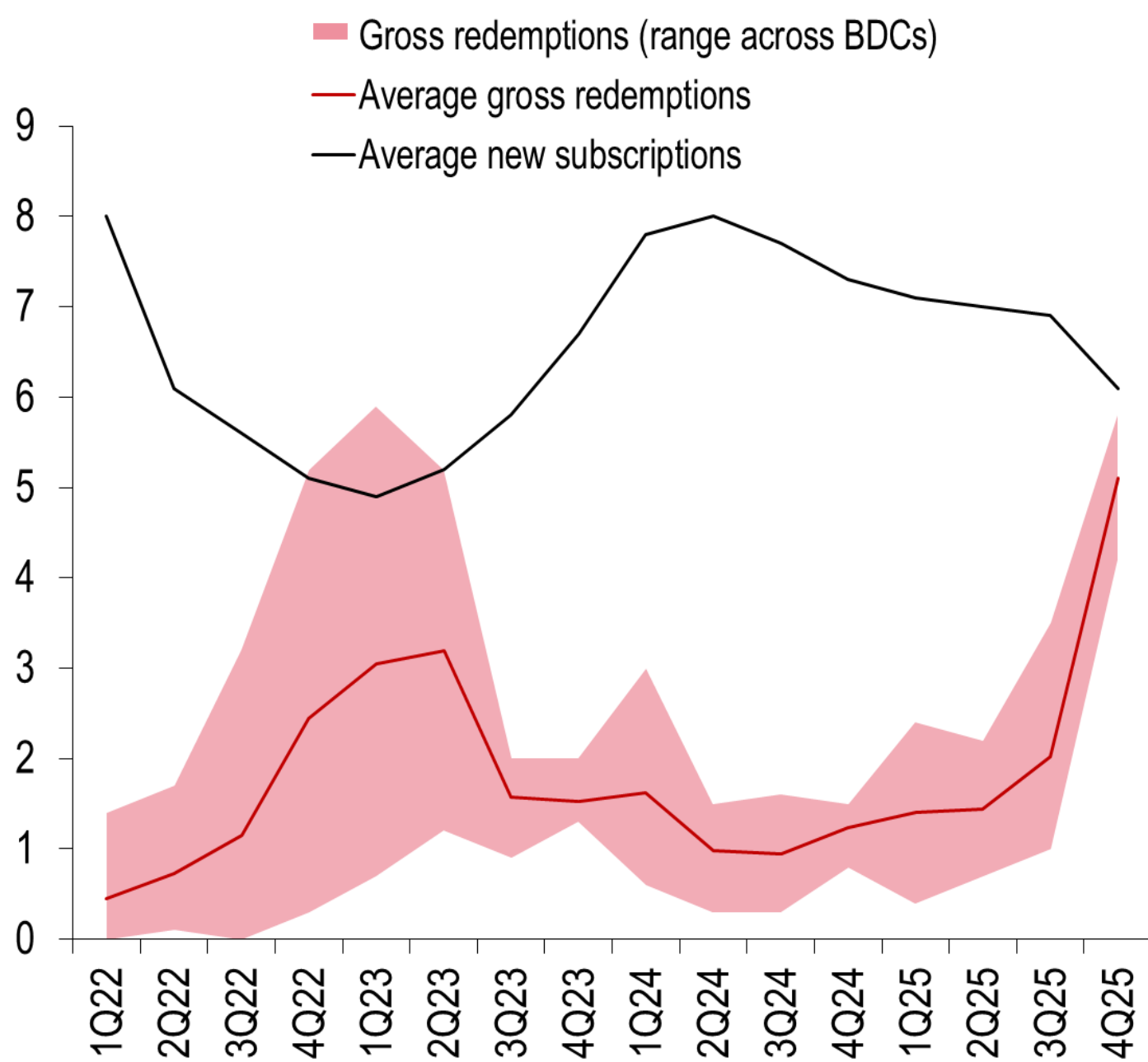
Private credit assets have been under significant pressure.

Equity Prices of BDCs and Private Asset Managers
(Indexed to Jan 1, 2026)



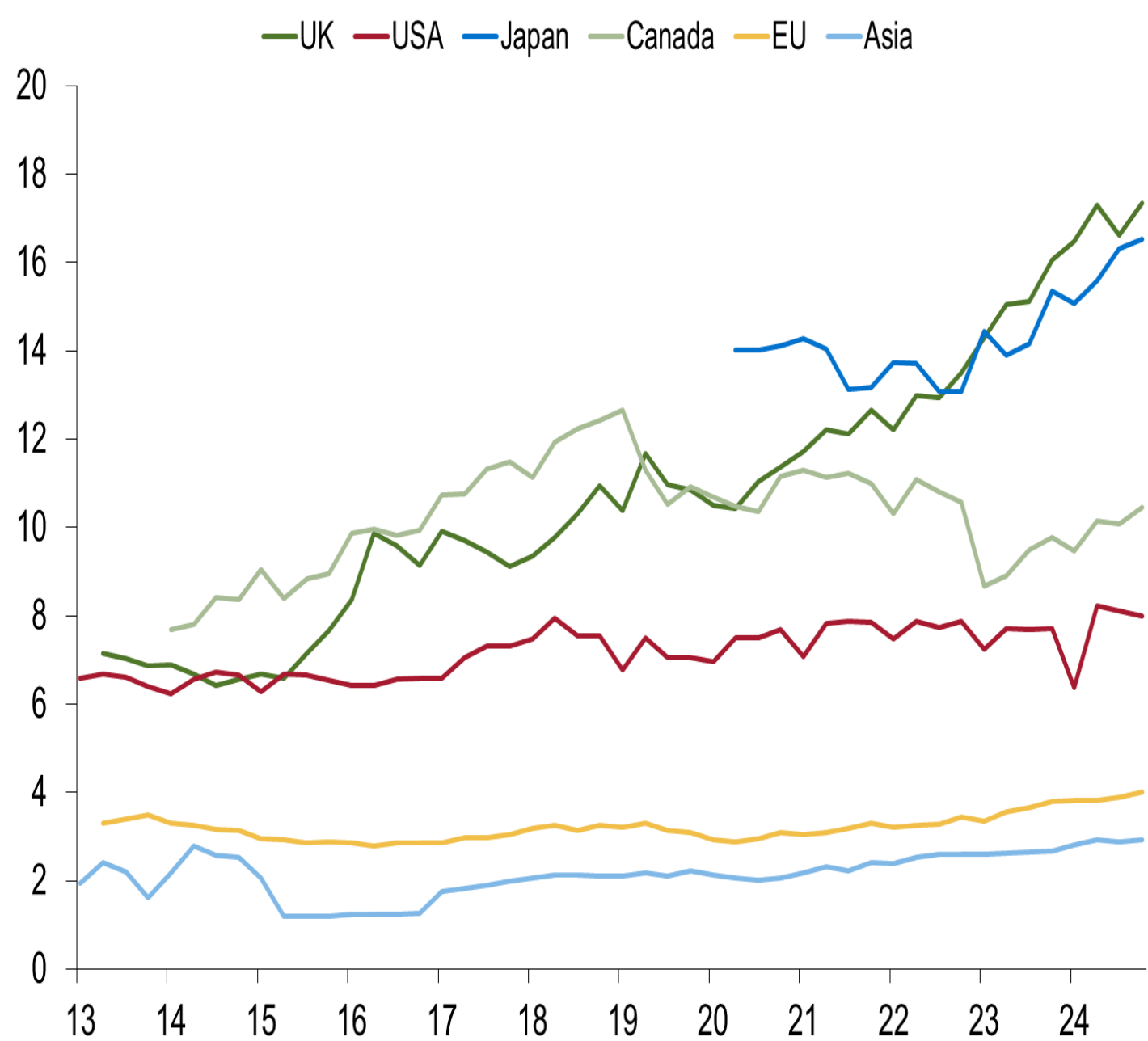
Redemption demands have increased, while inflows of new funds have decelerated.

Quarterly Redemptions for Select Perpetual Nontraded Business Development Companies
(Percent of shares outstanding)



Cross-border bank-NBFI linkages increase spillover risks, with UK, Japan and Canada primary sources of funding.

Share of banks' exposure to NBFI (cross-border)
(Percent of total assets)

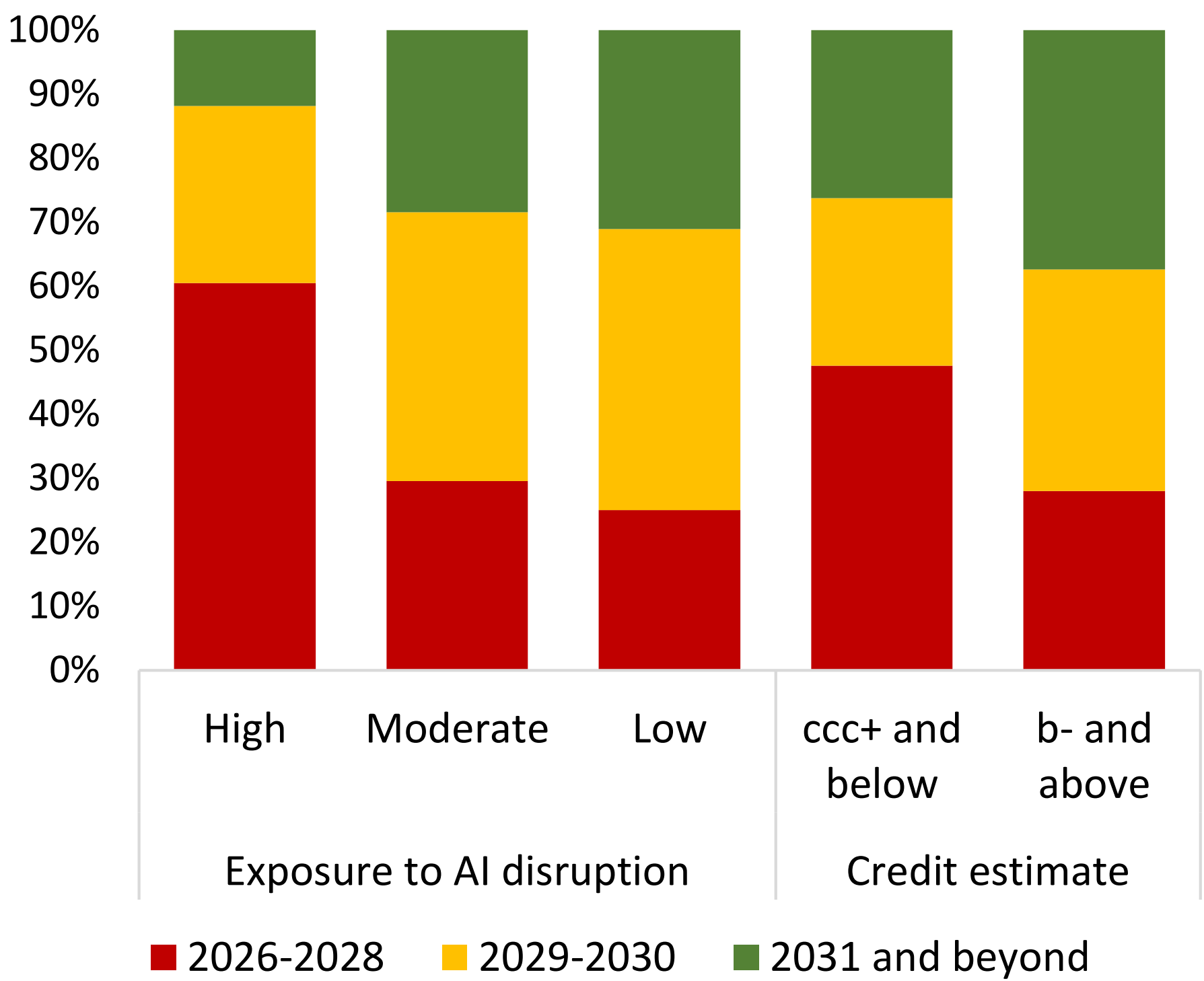


Private Credit: Challenges in Direct Lending Reinforce Allocations to Asset-Based Finance

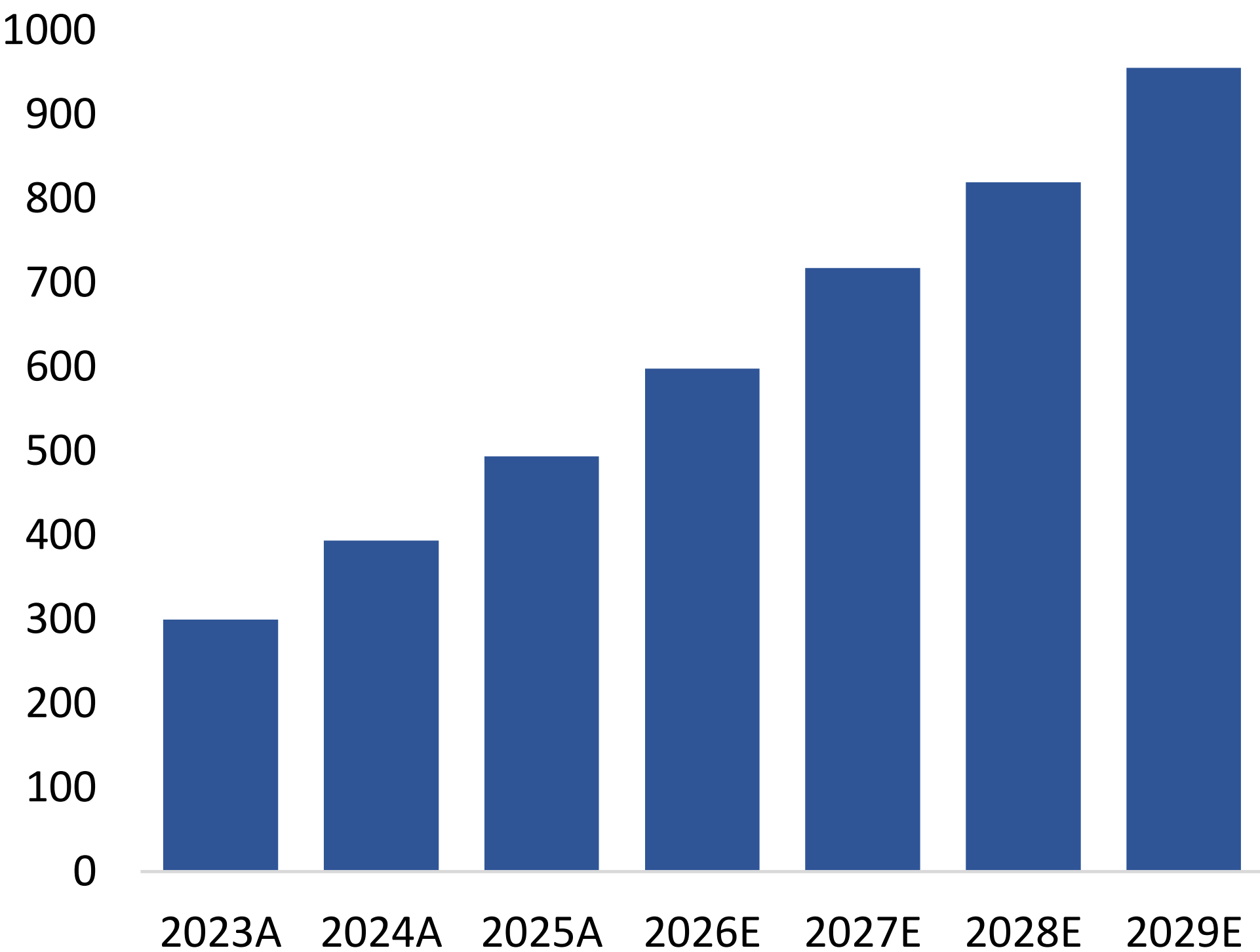
Lower-rated and AI-disruption-vulnerable direct lending borrowers face elevated refinancing risks

ABF in private credit growing rapidly amid concerns about origination standards, due diligence, and fraud after high-profile failures

Maturity Wall for DL Software Borrowers: by Degree of Exposure to AI Disruption Risk and by S&P Credit Estimate Level
(Percent)



Total AUM Allocated to ABF by 5 Major Private Credit Asset Managers
(USD billions)

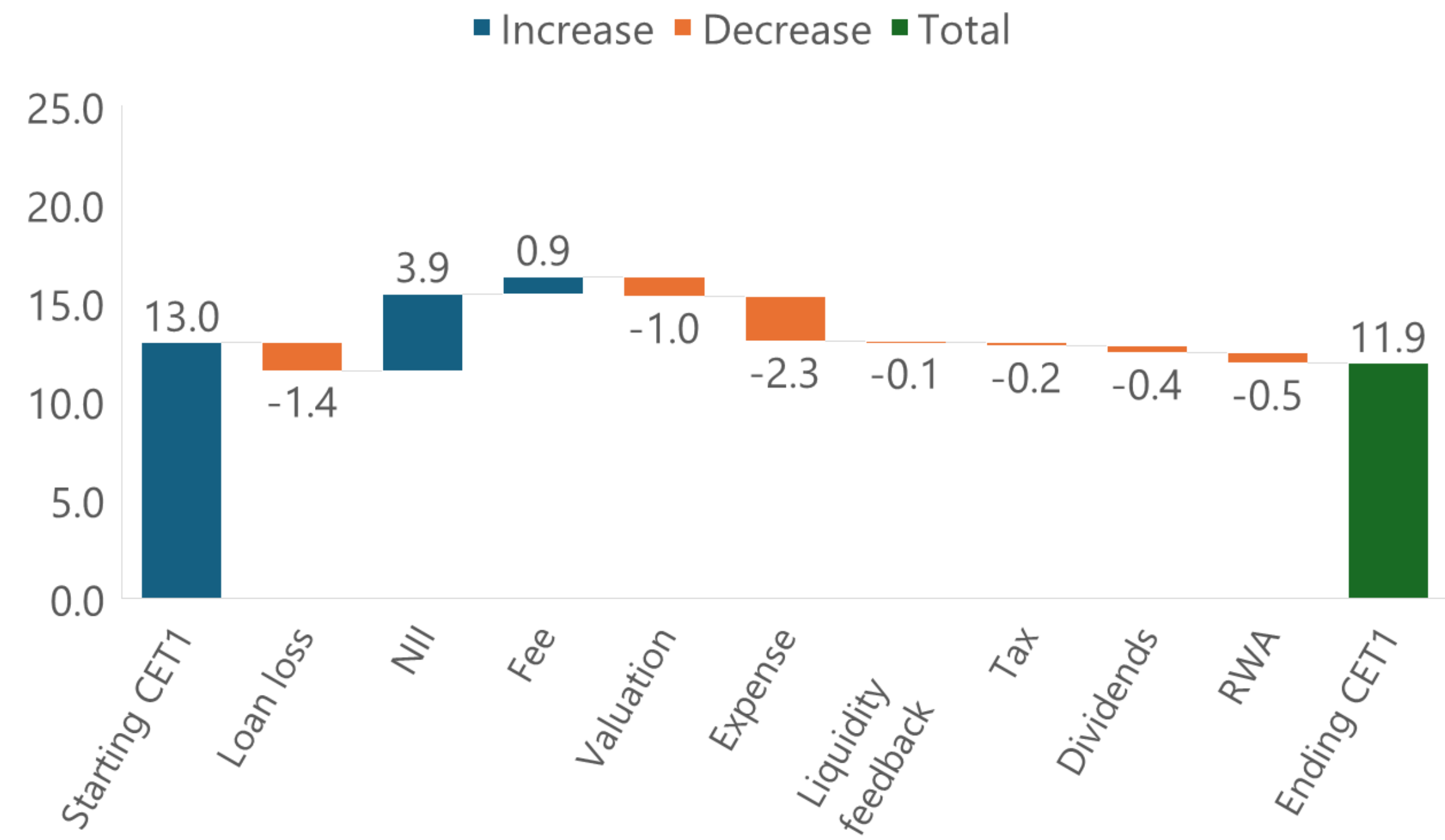


Higher Capital Ratios Strengthen Global Banks...

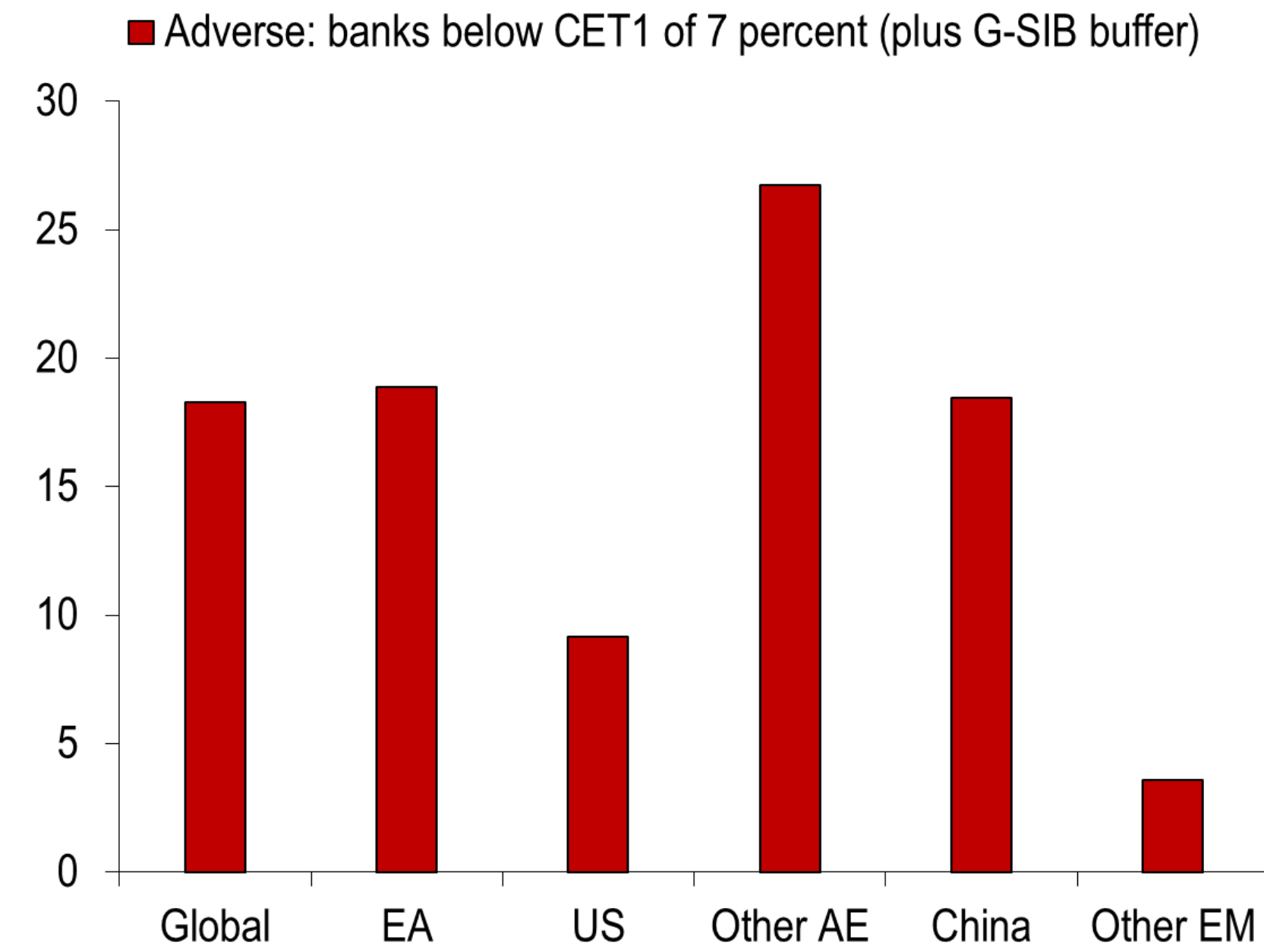
Rising loan losses and expenses are the main force behind capital depletion under the adverse scenario.

The share of weak banks have materially improved since 2023 but remain significant.

Contribution to CET1 Ratio Change: Global
(Percentage point)



Weak Banks: Share of Total Assets by Region
(Percent)



Sources: Fitch Solutions; Fitch Connect; and IMF staff calculations.

Note: The Global Bank Stress Test (GST) examined 669 banks from 29 countries accounting for 74 percent of global sector assets. The 29 countries in the sample are Australia, Austria, Belgium, Brazil, Canada, China, Denmark, Finland, France, Germany, Greece, India, Indonesia, Ireland, Italy, Japan, Korea, Mexico, The Netherlands, Norway, Portugal, Saudi Arabia, South Africa, Spain, Sweden, Switzerland, Türkiye, the United Kingdom, and the United States. In the left panel, “Expenses” refers to operating costs, assumed to be constant over time and across scenarios as a share of risk-weighted assets. Liquidity feedback is based on the extra funding cost of pledging securities at stressed prices and the extra cost of accessing central bank facilities. Loan loss refers to loan loss provisions and valuation to valuation losses. In the right panel, global refers to all banks in the sample. Recent FSAPs to two systemically important jurisdictions have found similar results for the largest banks, using supervisory data provided for the stress tests performed by IMF staff. AE = advanced economy; CET1 = Common Equity Tier 1 capital; EM = emerging market; GSIB = global systemically important bank; NII = net interest income; RWA = risk-weighted asset.

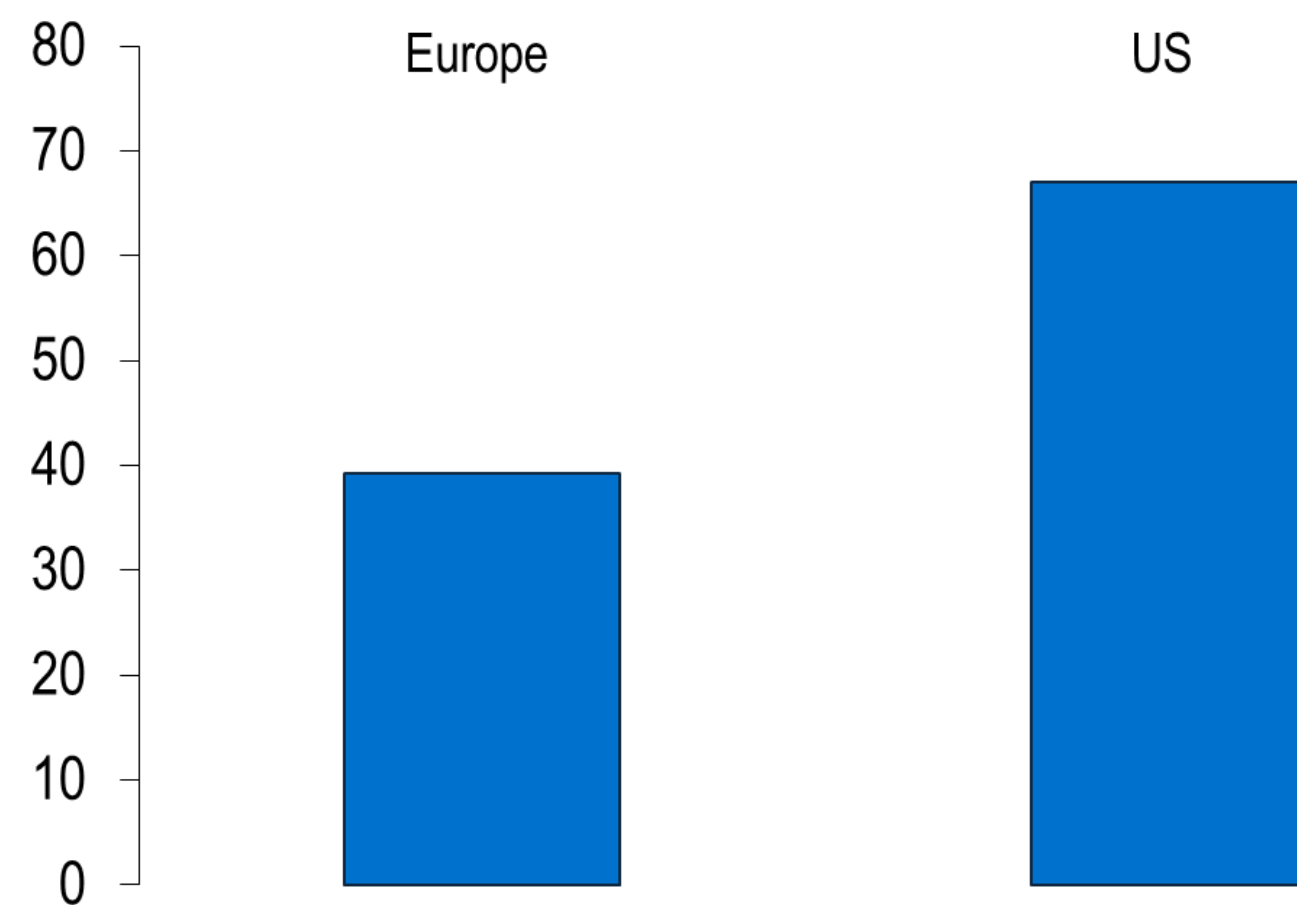
...but Stronger Bank-Nonbank Nexus Increases Contagion and Liquidity Risks

A deterioration in NBFIs' credit risk, combined with the withdrawal of unused commitments, could materially impact banks' capital ratios.

A few banks could face liquidity pressures to cover potential outflows from NBFIs' credit and liquidity lines.

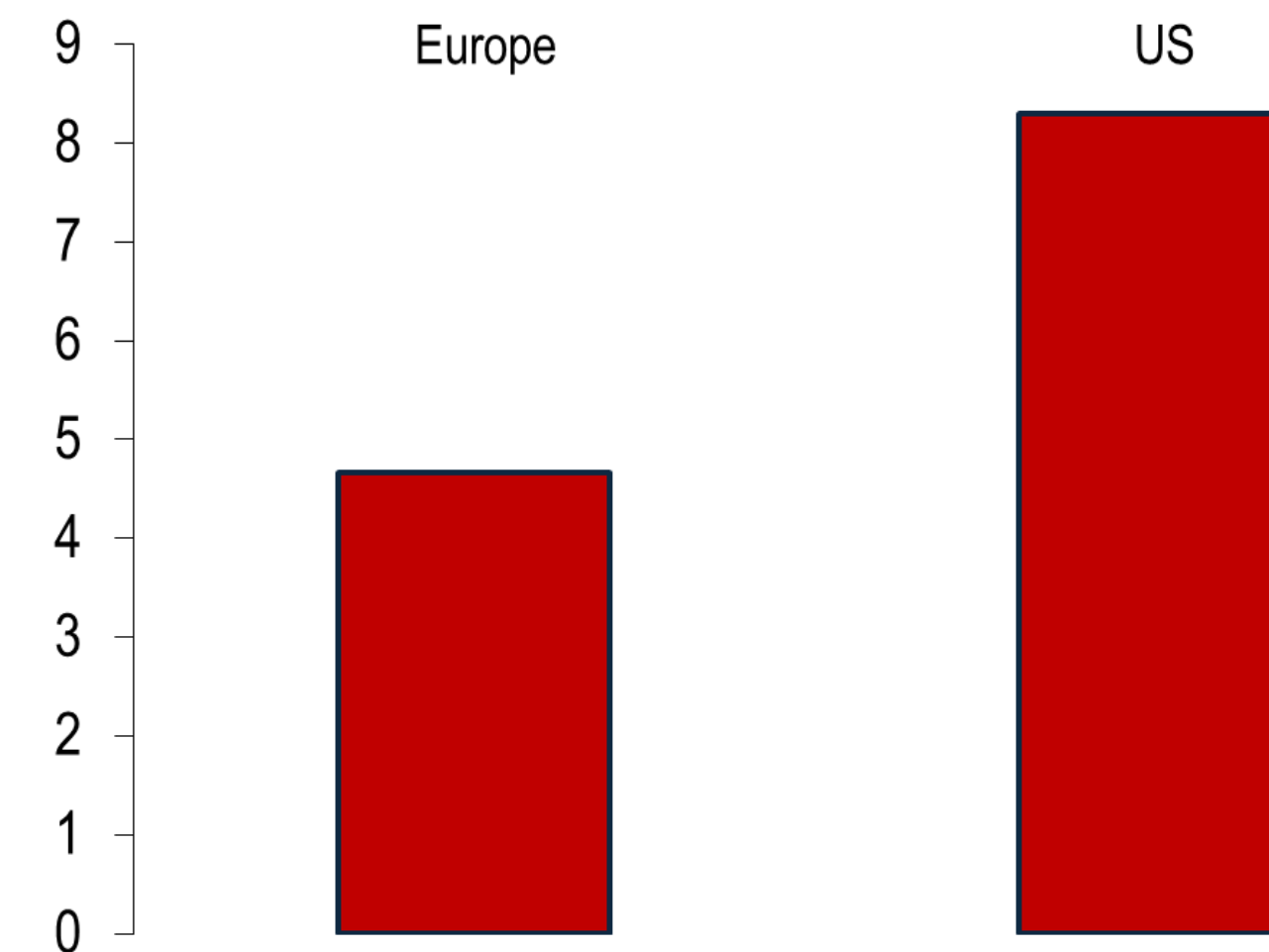
Share of Banks' Total Assets Experiencing a Capital Ratio Decline Above 100 bps (Percent)

■ Percentage of total assets with CET1 decrease of more than 100 bps (rhs)



Share of Banks' Total Assets with Negative Net Available Liquidity (Percent)

■ Percentage of total assets, narrow liquidity metrics (rhs)

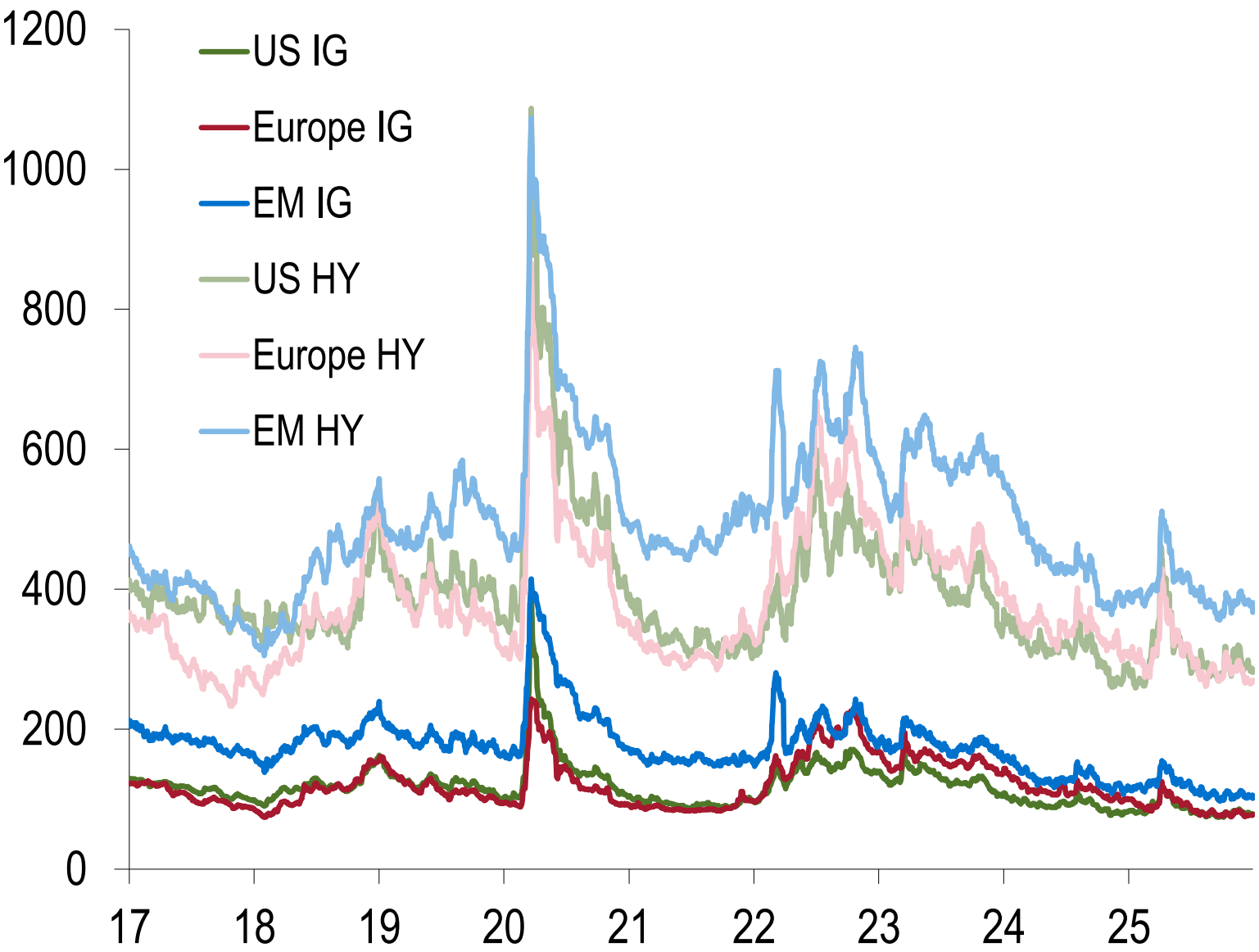


Credit Markets Remain Resilient with Pockets of Risks Emerging

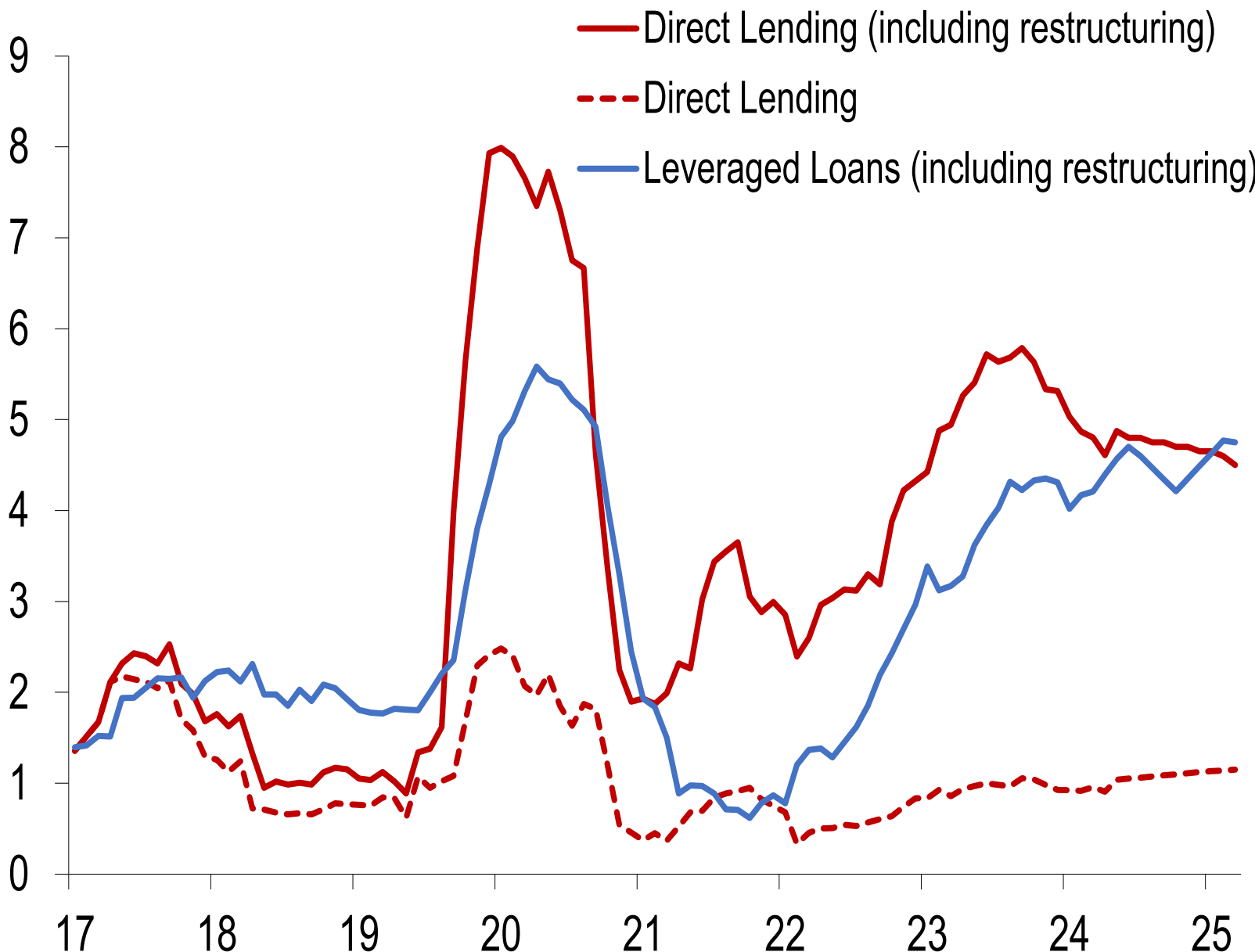
Overall credit conditions remain supportive as tariff-related uncertainty eased

Signs of deterioration are emerging in more vulnerable segments, however, including private markets and some consumer sectors

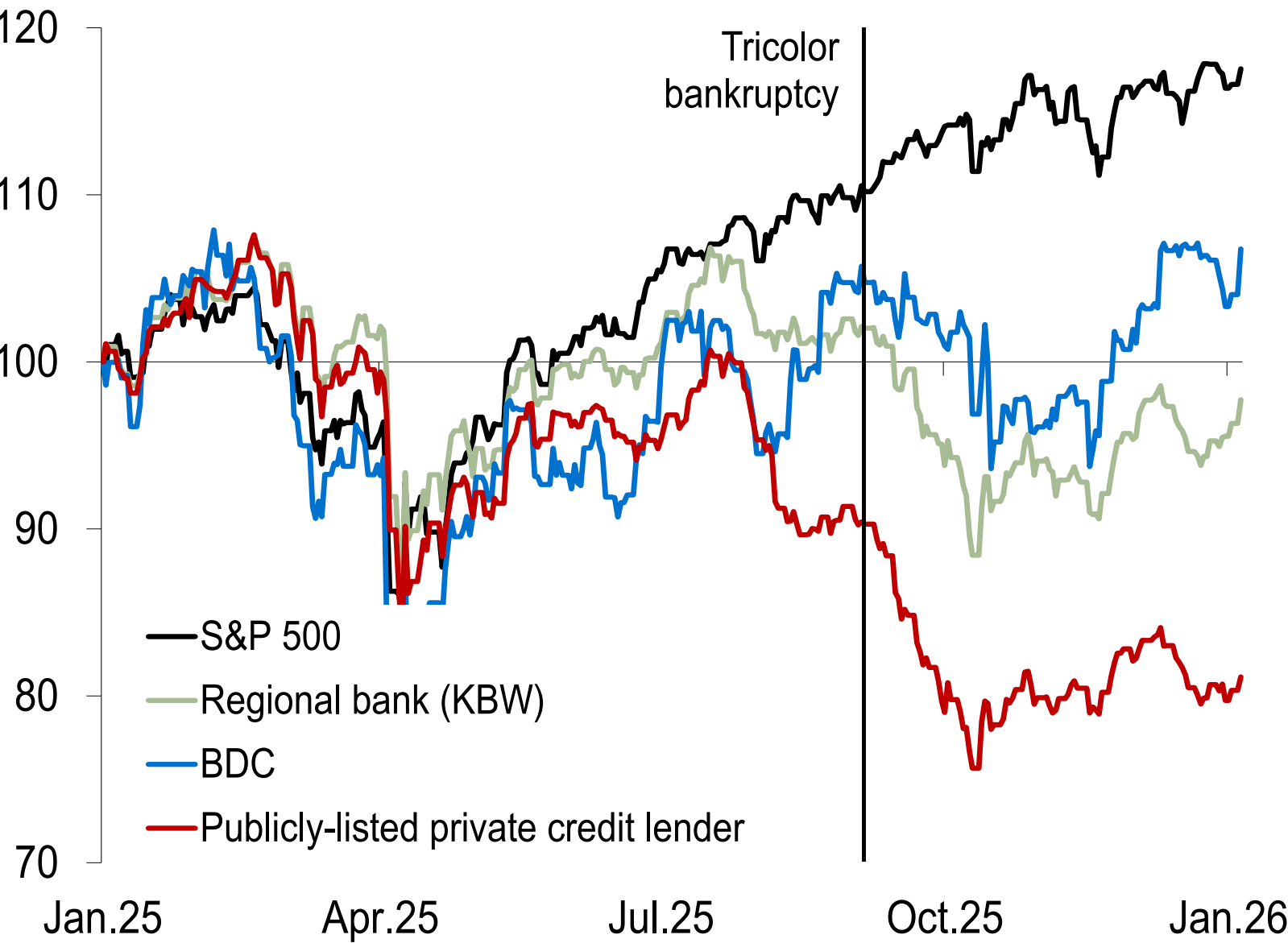
Investment-grade and High-yield Credit Spreads (Basis points)



Default Rate (Percent)



Stocks: Credit Providers vs S&P 500 (Index to Jan 2025)



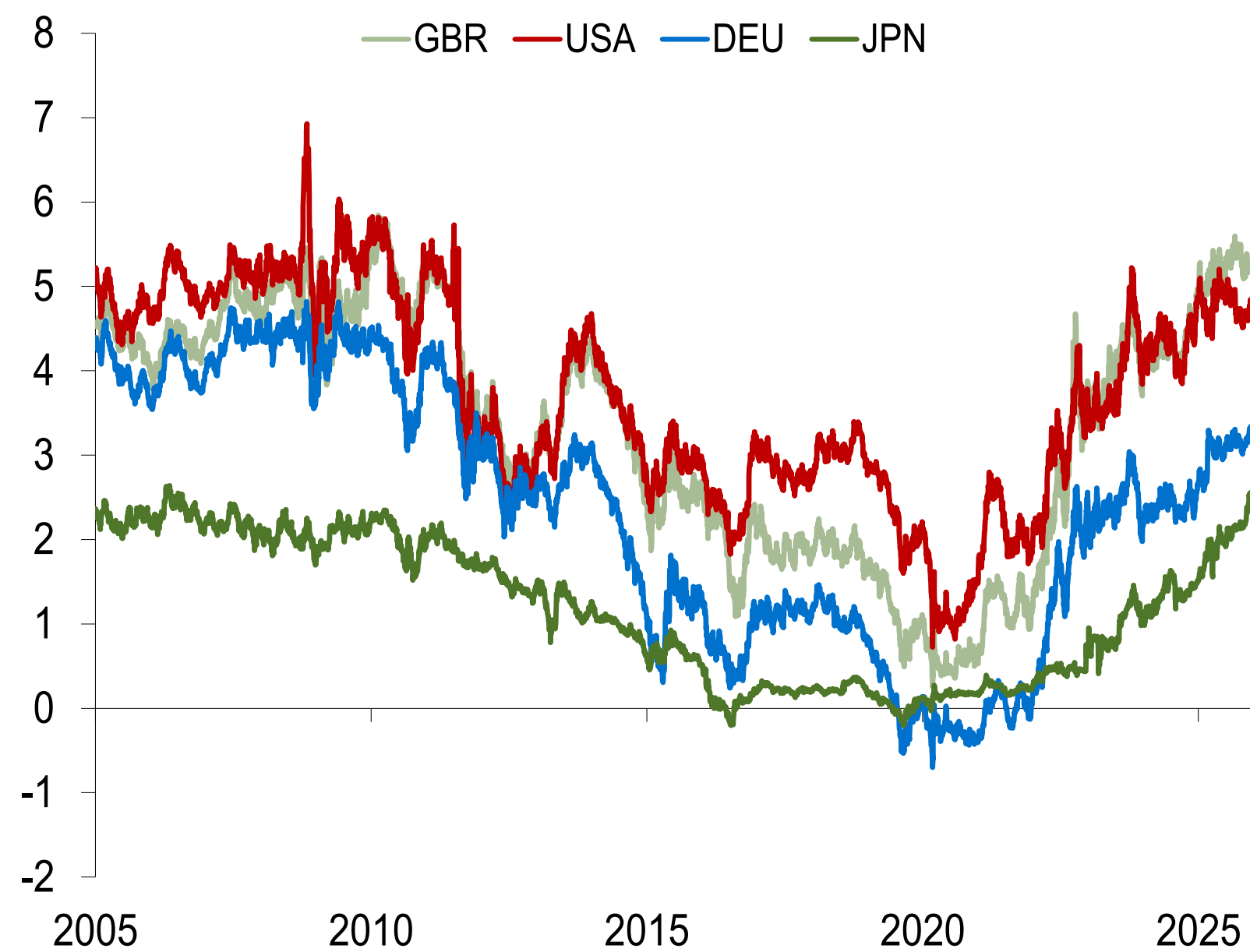
Fiscal Pressure on Long-term Rates

Upward pressure on long-term yields due to elevated risk premium, amid expectations of expanding fiscal supply

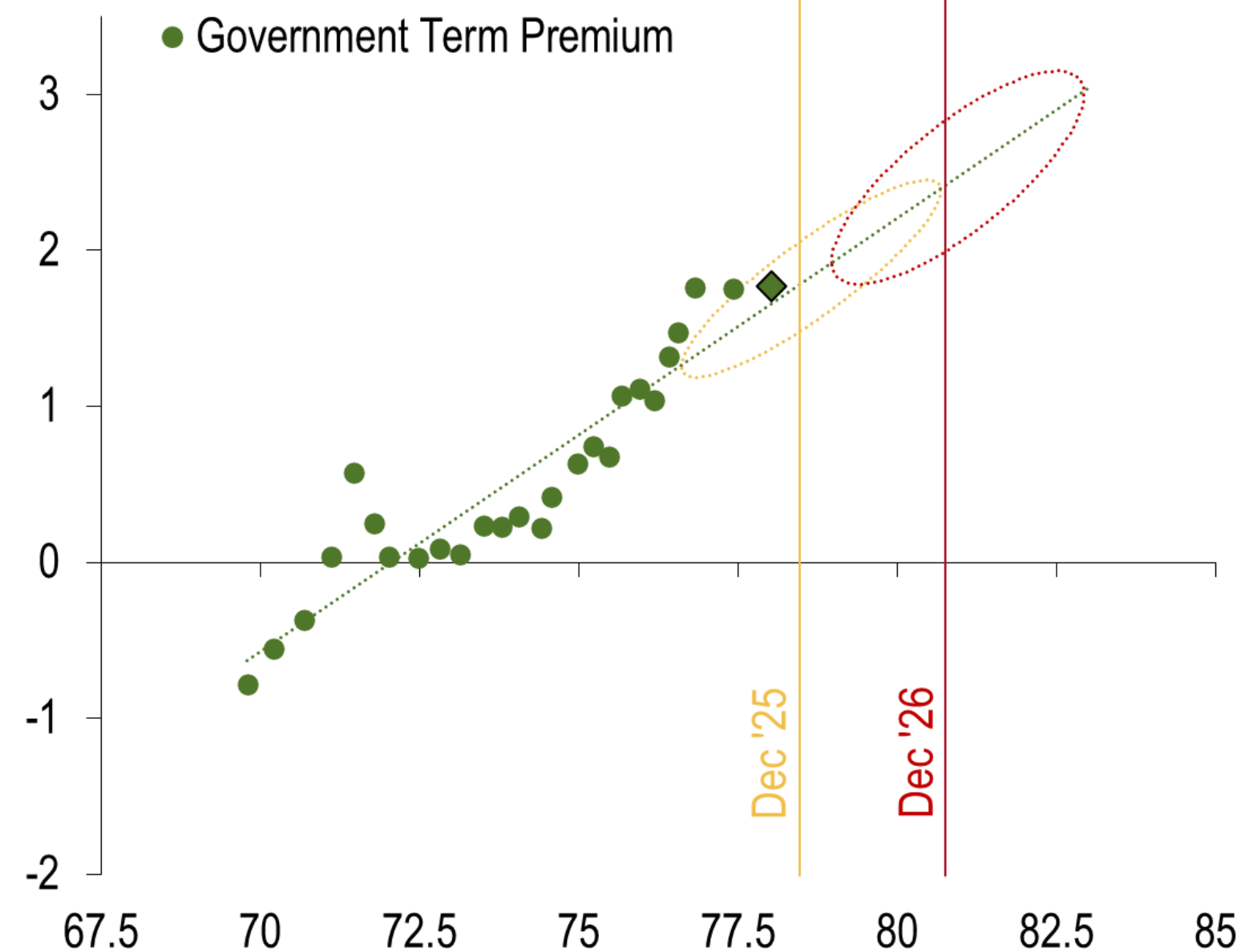
Price sensitive investors demand higher term premiums as compensation for absorbing rising bond supply, exerting upward pressure on yields.

Equilibrium Real Rates Largely unchanged

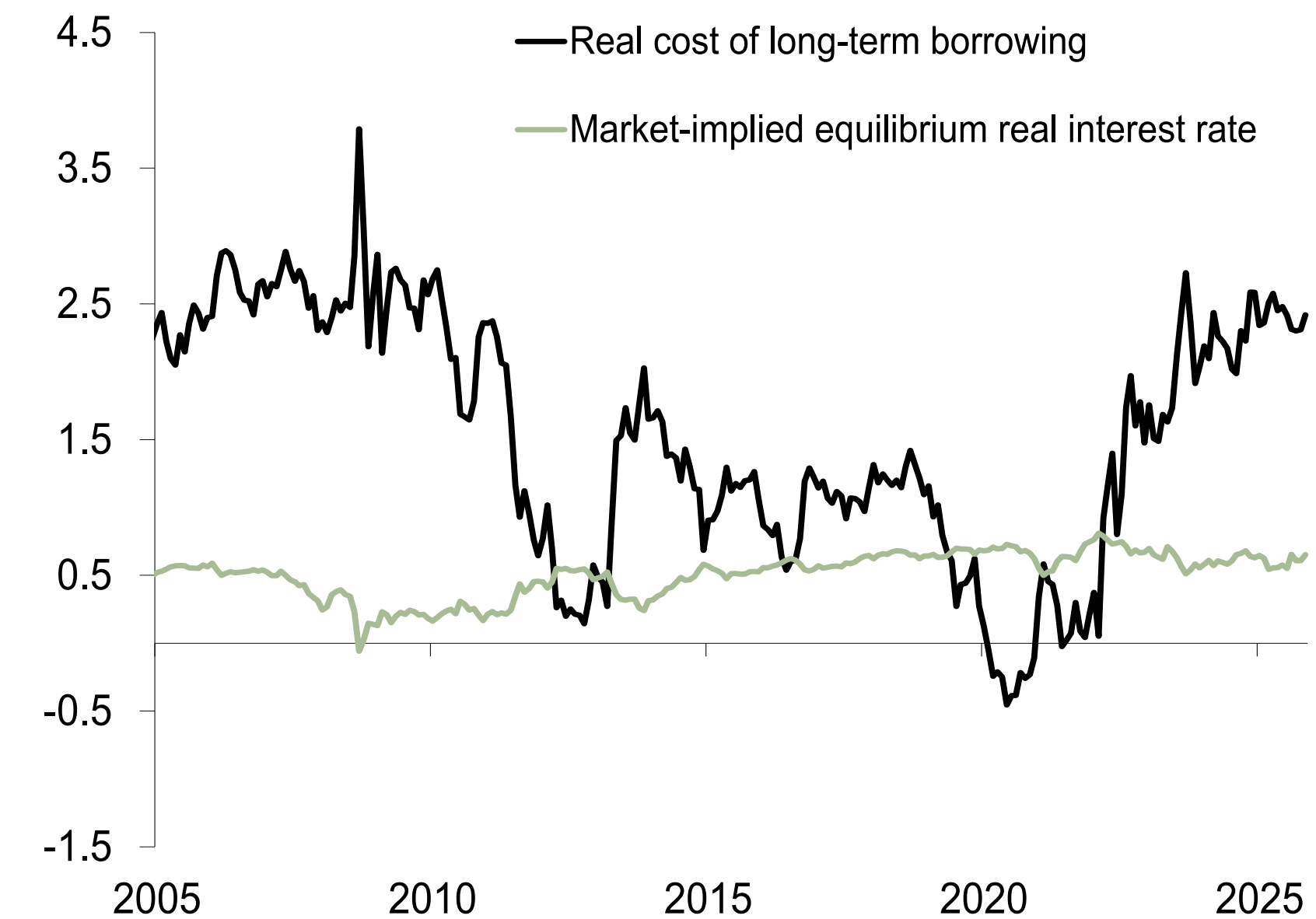
G4 5-year-5-year Forward Yields (Percent)



G4 30y Government and Duration Term Premium Conditional on Projected Free Float (Percent)



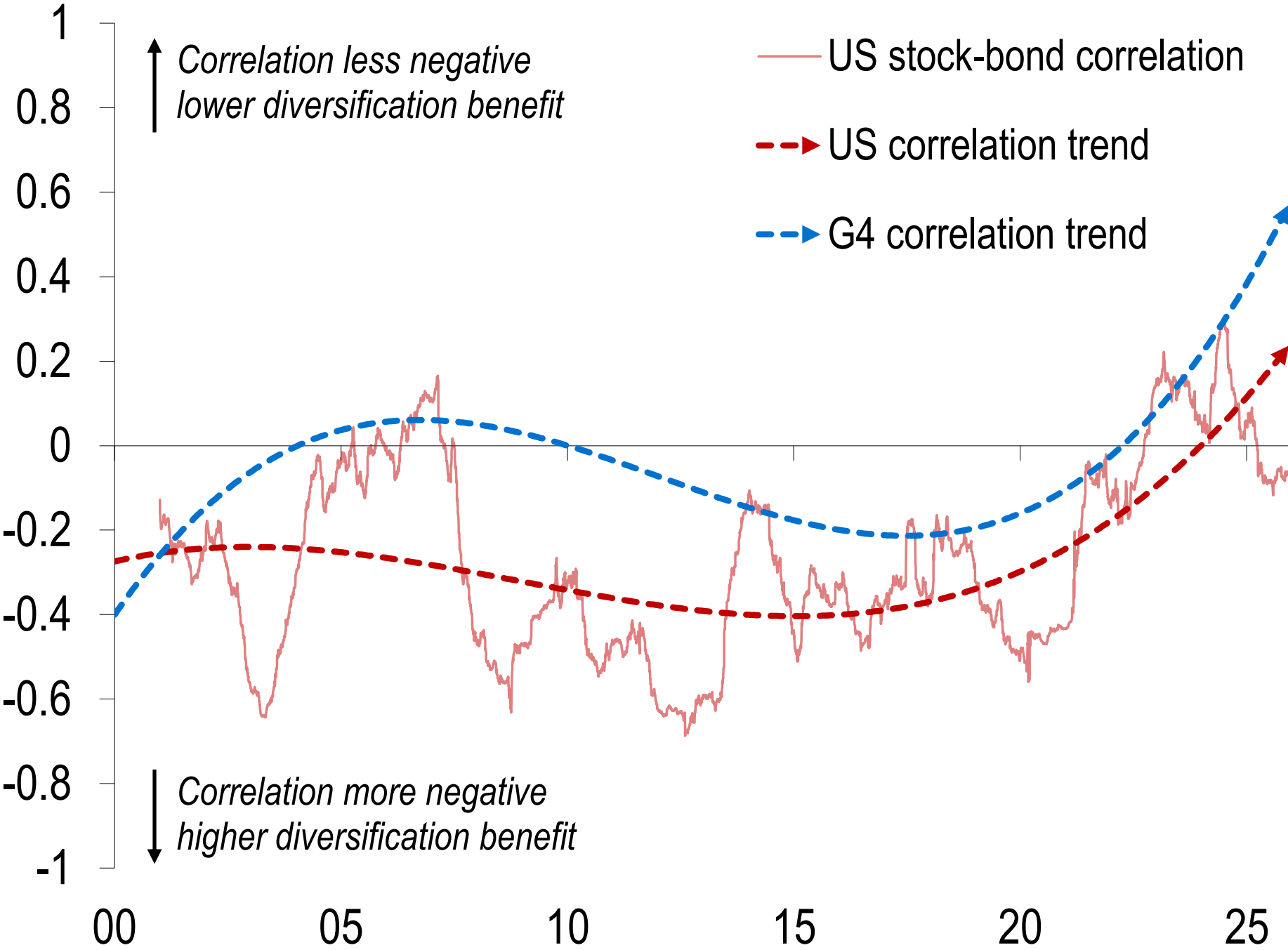
US 10-year Real Yield (Percent)



Stock Bond Correlation and Alternative Safe Assets

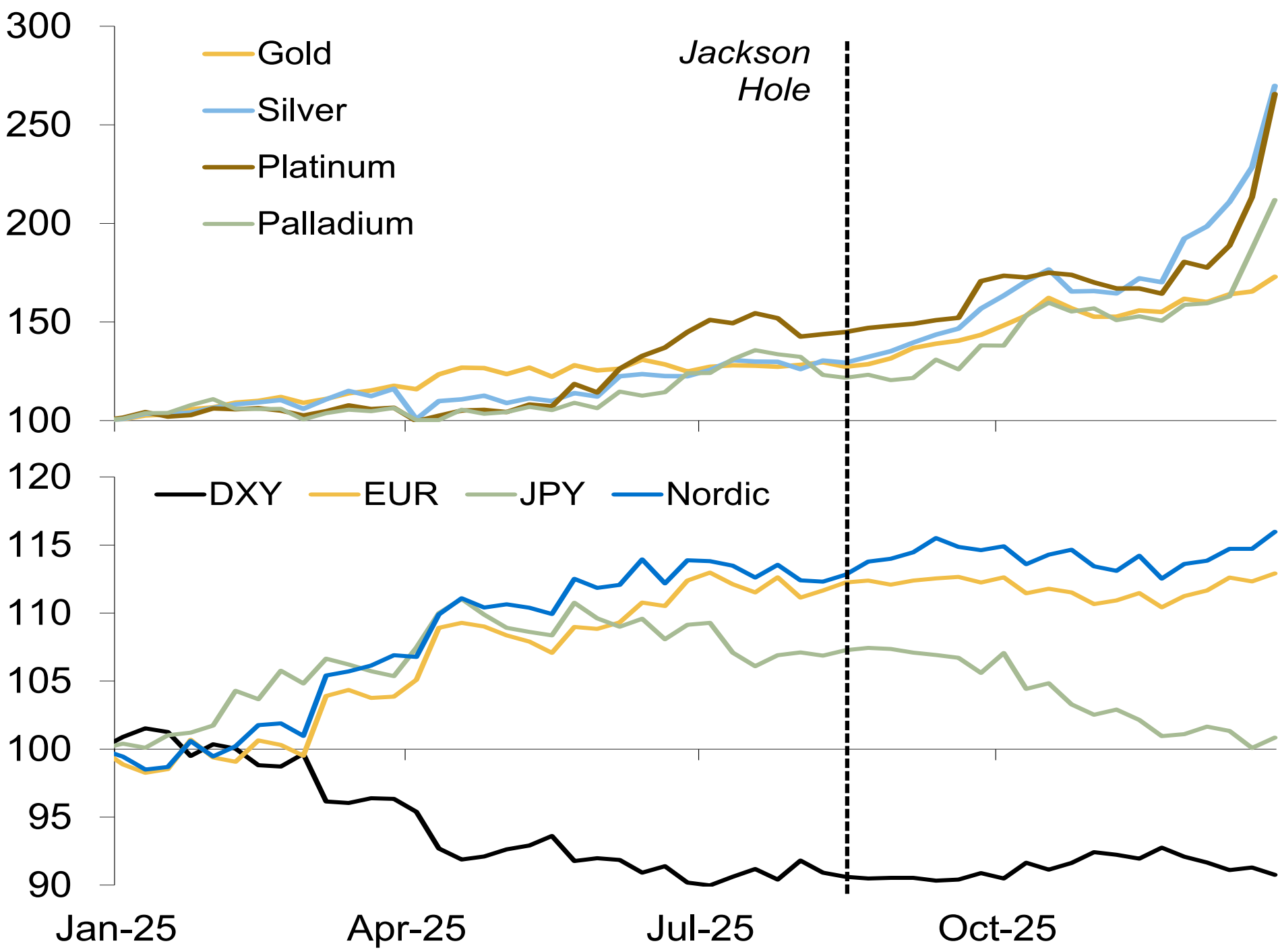
Government bonds exhibiting decreasing hedging properties...

Stock-Bond Return Correlation
(Percent)



...with investors increasingly seeking alternative safe assets, thereby supporting select commodities and currencies

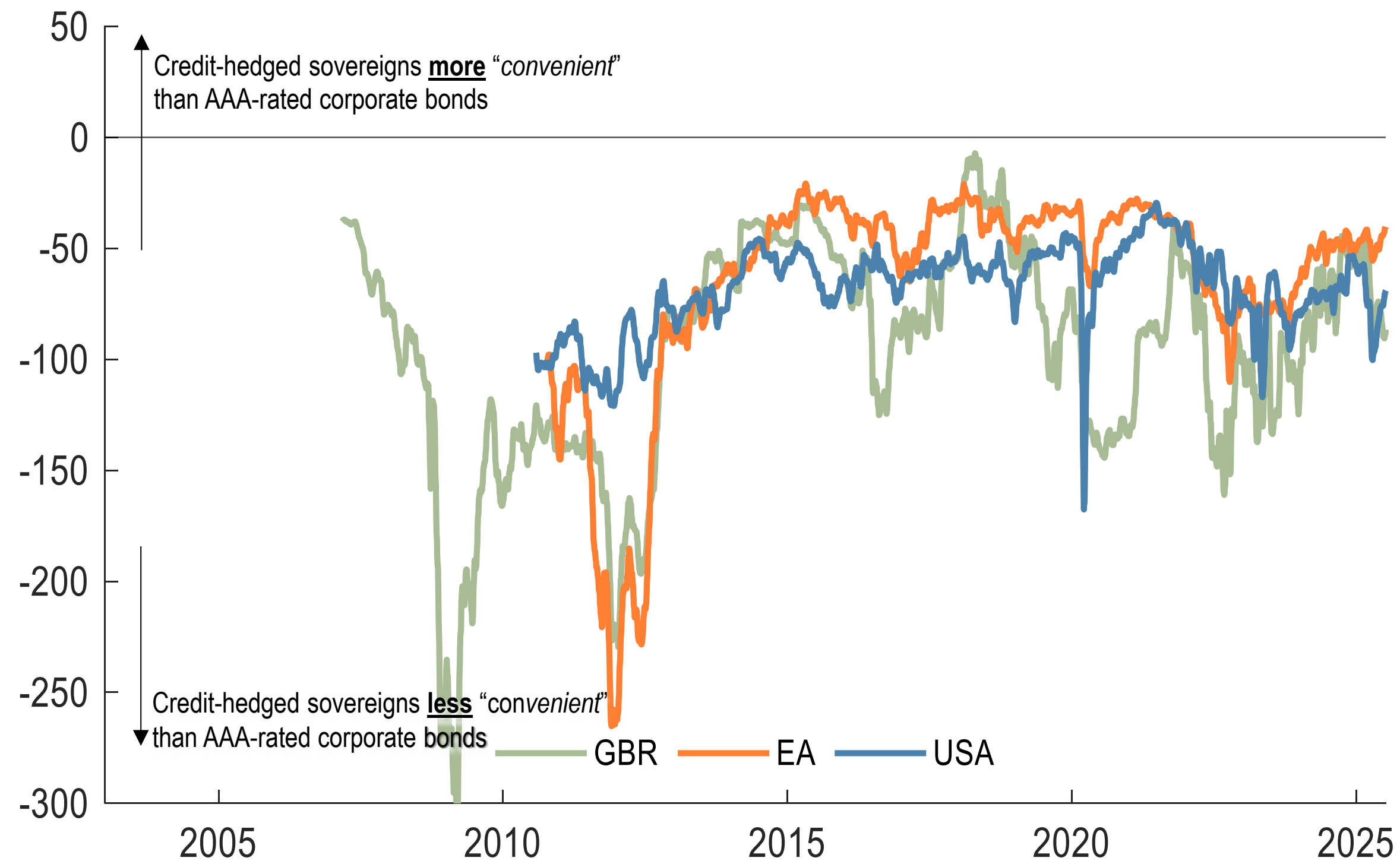
Select Commodity and Currencies
(Index to Jan 2025)



Convenience Yield on Safe Assets

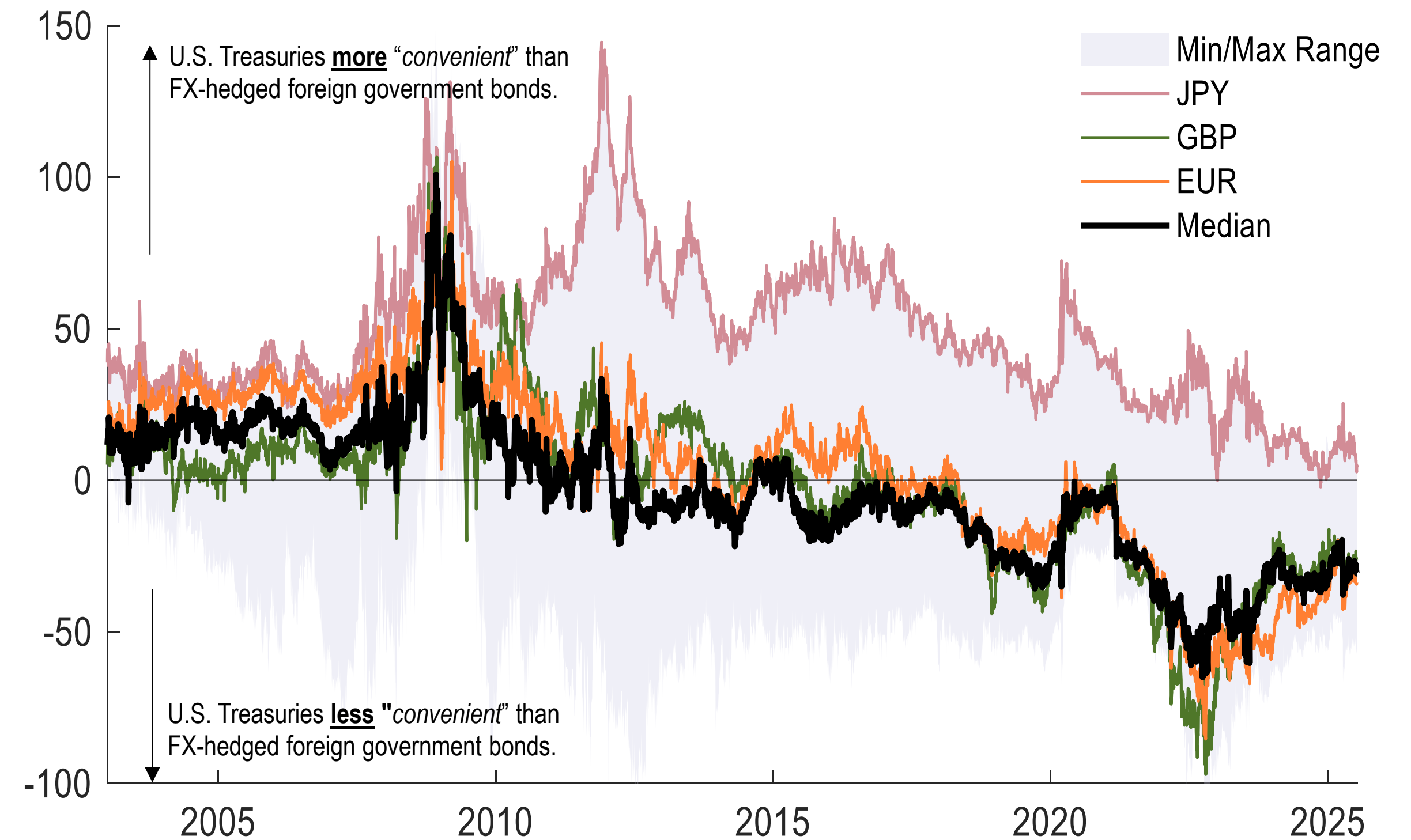
Rising bond supply has been associated with a reduced domestic convenience yield — the premium investors are willing to pay for safety and liquidity of government bonds.

**Domestic Convenience Yield:
Selected Advanced Economies**
(Basis points)



From a cross-border perspective, the convenience yield on US Treasuries has declined.

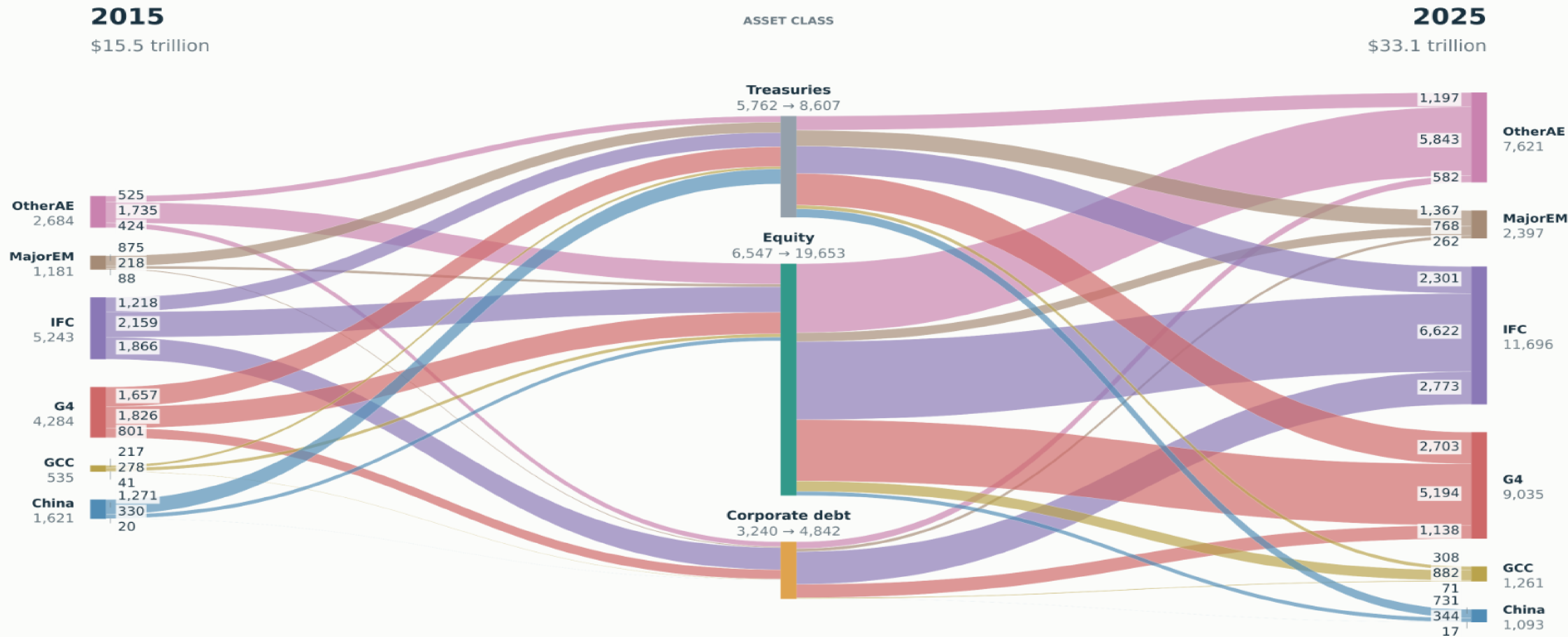
Cross-Border Convenience Yield For US Treasuries
(Basis points)



Dollar “Debasement”? Not clear.

Holdings of US assets by country groups

USD billions

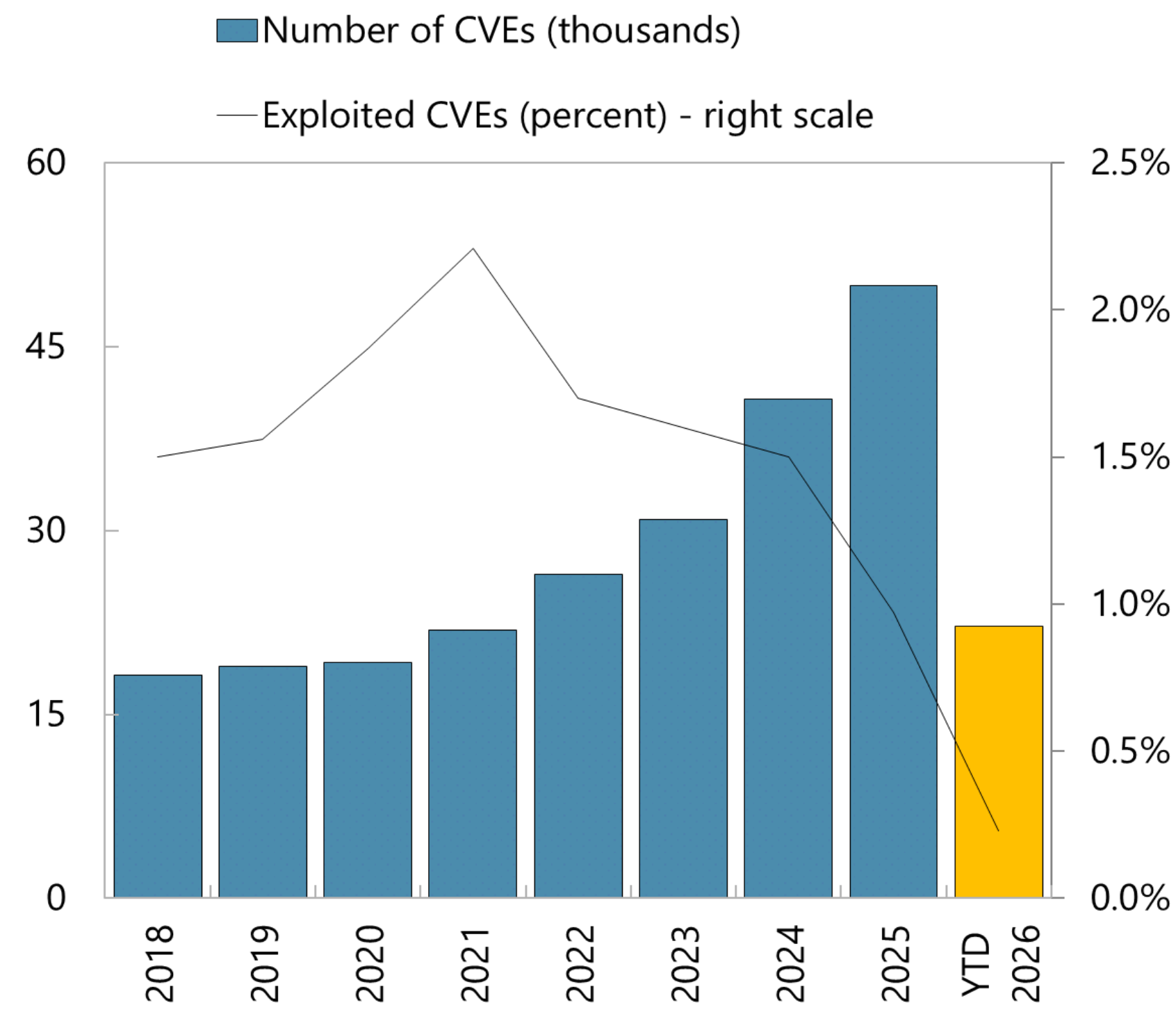


Source: Treasury International Capital, Form SHL annual survey, IMF staff calculations. Note: “G4” includes Japan, the UK, and euro area countries not in the “IFC” list. “IFC” includes the Bahamas, Belgium, Bermuda, British Virgin Islands, the Cayman Islands, Guernsey, Hong Kong SAR, Ireland, Panama, and Singapore. “Major EM” includes Brazil, Chile, Colombia, Czechia, India, Indonesia, Israel, Mexico, Peru, the Philippines, Poland, South Africa, Taiwan POC, and Thailand. “Other AE” includes Australia, Canada, Denmark, Iceland, Korea, New Zealand, Norway, Sweden, and Switzerland.

Cyber Attacks: Faster exploitation is raising risks to financial stability

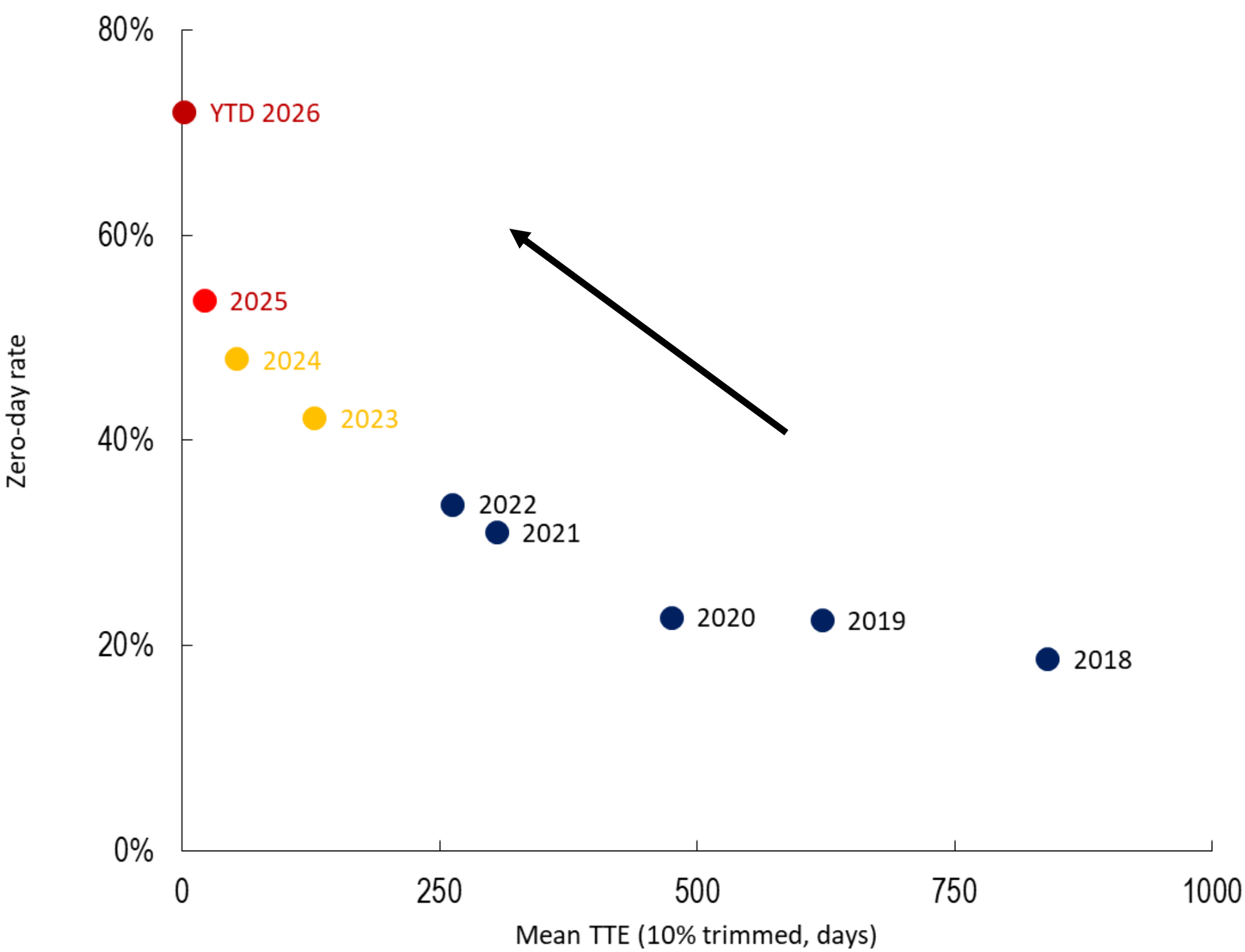
Reported vulnerabilities are increasing, indicating heightened vulnerability of operating systems to cyber exploitation

Common Vulnerabilities and Exposures (CVE) and Exploited CVEs
(Count per year, percent)



Cyber-threat actors are exploiting vulnerabilities faster, leaving firms less time to respond

Mean Time-to-Exploitation (TTE) and Zero-Day Rate
(10% trimmed in days, percent)



Mapping Vulnerabilities into Policy Recommendations

Vulnerabilities

Policy Recommendations

Stretched valuations: Corporate valuations in stocks and bonds

Monetary policy should stay attentive to inflation
Cautious policies should also temper asset valuation pressures

Sovereign bond markets: Term premia, fiscal-financial nexus

Urgent fiscal adjustments to curb government deficits
Improve market structure, like central clearing

Nonbank financial intermediation (NBFI): Open-ended funds, private credit, stablecoins, nexus with banks, opacity

Improve data collection, especially cross-border NBFI activities
Implement FSB/IOSCO recommendations for funds
Implement Basel III to ensure bank resilience

Credit markets: While not an imminent risk, weaker firms struggling, with defaults ticking up.

Private credit funds should enhance disclosures

FX and EM issues: Capital flow vulnerabilities, FX market depth, carry trades, local stock and bond markets

Boost surveillance
Further deepen EM FX and bond markets