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Emerging Risks and Financial Stability: The Role of Nonbank Financial Intermediaries

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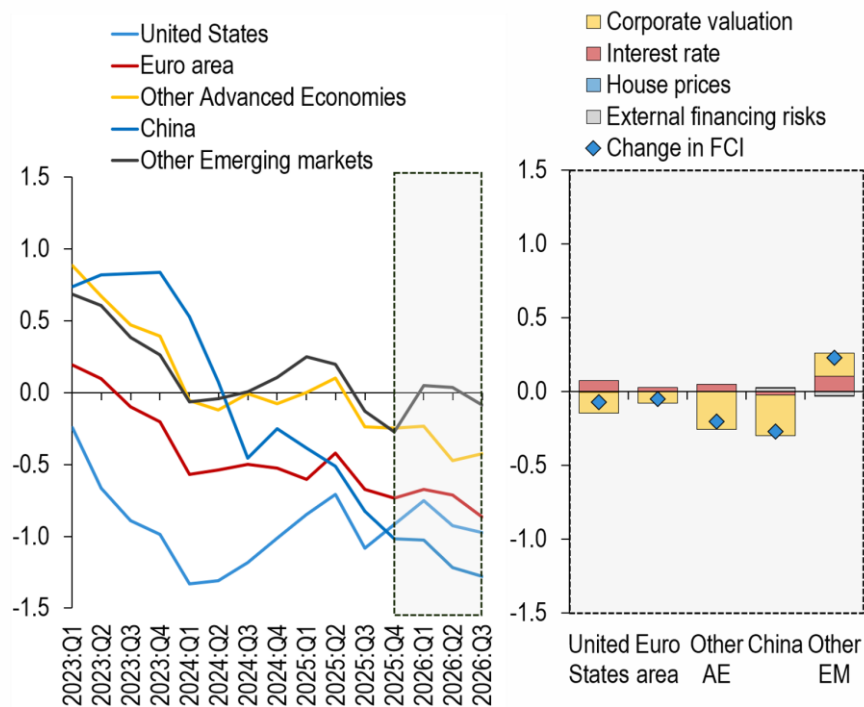
The current global financial landscape

- ❖ Financial markets have been **resilient** but financial stability **risks remain elevated**
- ❖ The recent *Global Financial Stability Report* (GFSR) highlights three salient risks that could potentially be near-term catalysts for a sharp tightening of financial conditions and market turmoil:
 - **AI-Driven Market Correction**
 - **A Sharp Rise in Sovereign Bond Yields**
 - **Cyber Threats**
- ❖ These risks by themselves do not necessarily threaten financial stability but could become a source of systemic risk if amplified by financial vulnerabilities...
 - Particularly those related to nonbank financial intermediaries (NBFI), which have grown in size and interconnectedness since the GFC
- ❖ ***This presentation: Vulnerabilities and risks related to NBFI***

Beneath the resilience: Rising risks

Financial conditions have remained accommodative, on net, across regions ...

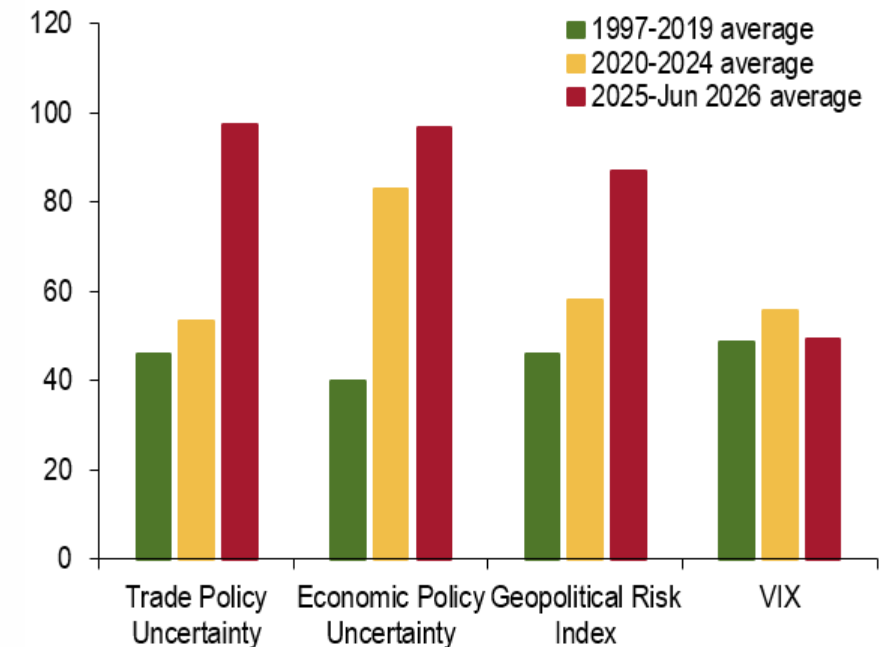
The IMF's Financial Conditions Index
(Z-scores; right panel: net change in 2026)



Source: Chapter 1 of the October 2026 *Global Financial Stability Report*.
Note: For calculation details, see Online Annex 1.1 in the October 2018 Global Financial Stability Report.

But heightened geopolitical and policy uncertainty leaves global markets exposed to adverse shocks

Economic Uncertainty and Geopolitical Risk
(Percentile)

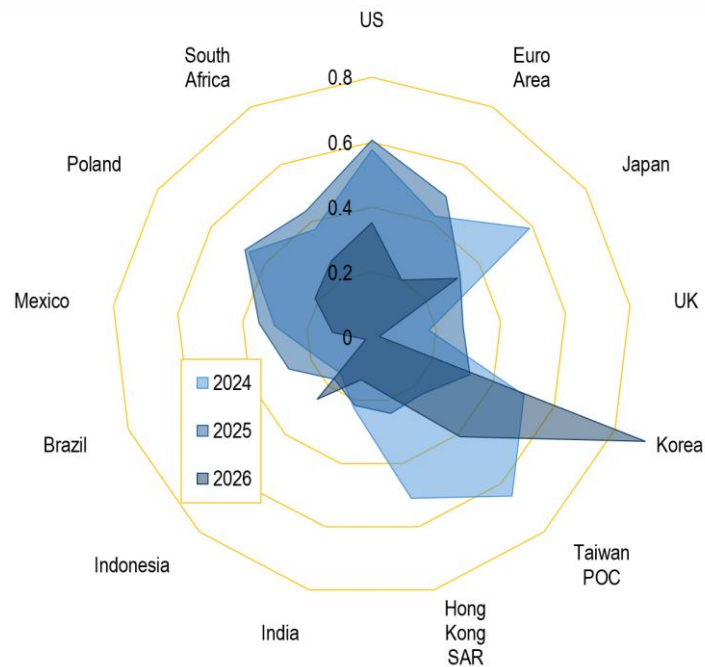


Source: Baker, Bloom, and Davis (2016); Caldara, and others (2019); Caldara and Iacoviello (2021); and IMF staff calculations.

Artificial intelligence, public debt, and cyber risk

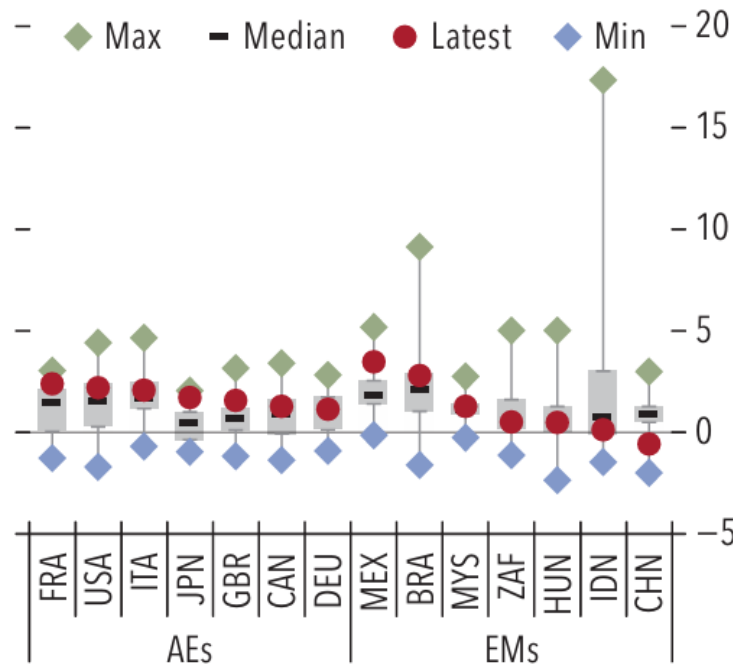
The consequences of an AI correction could be global, with some jurisdictions more sensitive than others.

Equity Return Beta to the Global AI Index



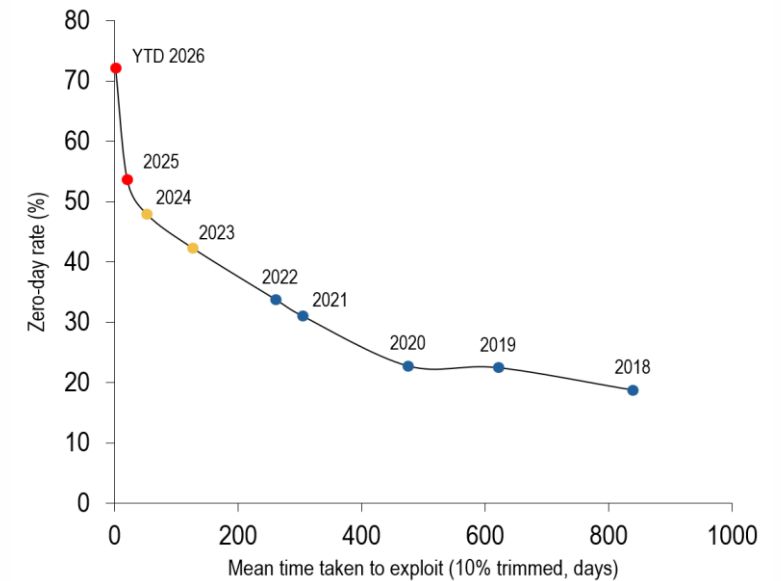
Term premiums are at multiyear highs, especially for advanced economy bonds

10-Year Government Bond Term Premium Historical Ranges (Percent, 2000-2006)



The time between discovery of cyber vulnerability and exploitation has reduced sharply

Mean Time-to-Exploitation and Zero-Day Rate (Days and percentage)



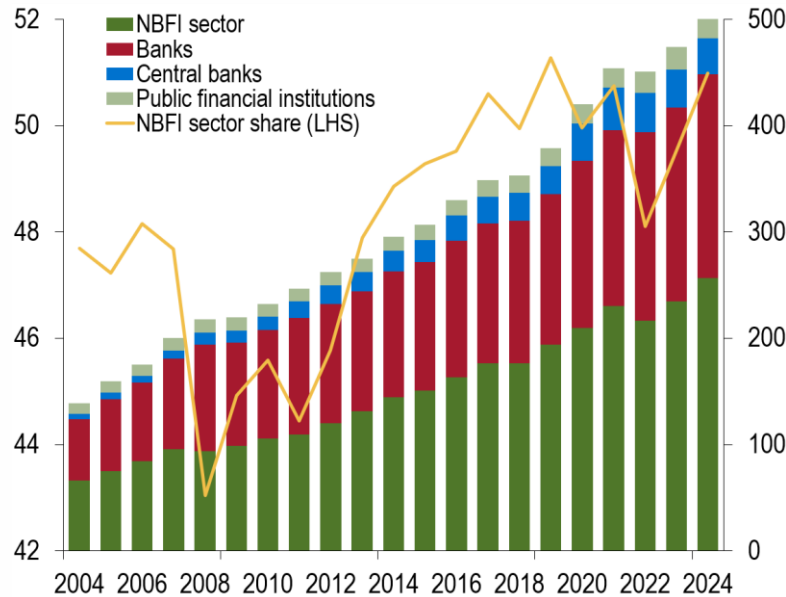
Source: Chapter 1 of the October 2026 *Global Financial Stability Report*.

Note: In panel 1, “Global AI equity returns” are proxied by the Index Artificial Intelligence and Big Data Index (IAIQ). Betas are estimated from annual weekly regressions of jurisdictional equity returns on IAIQ returns. In panel 3, time-to-exploit measures the gap between public disclosure and first confirmed exploitation of common vulnerabilities and exposures (CVEs). The zero-day rate is the share of exploited CVEs that were exploited on or before the disclosure date.

A growing presence of more risk-sensitive NBFIs may amplify shocks...

The share of NBFIs in total global financial assets has increased post-GFC...

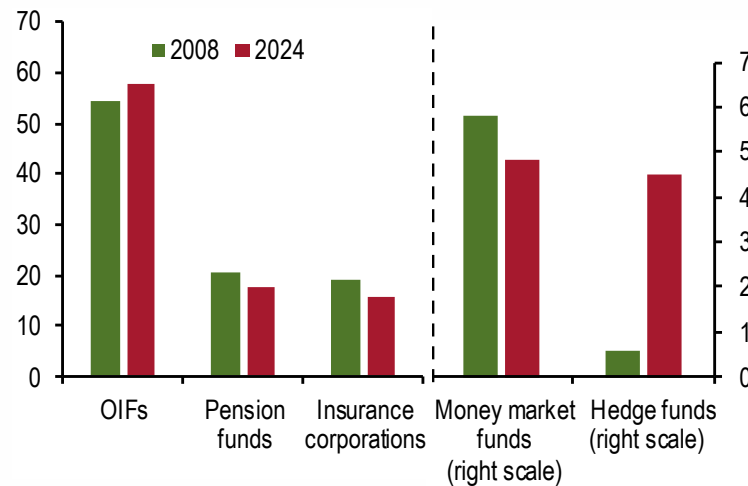
Total Global Financial Assets
(Share of total financial assets, LHS, USD Trillion, RHS)



Source: FSB NBFIs Global Monitoring Report (2024)

... with the market footprint of investment funds, and especially hedge funds, growing substantially

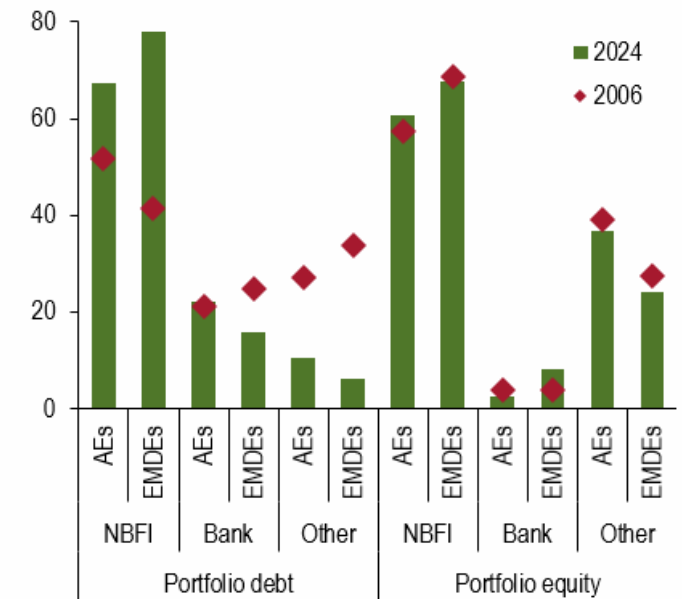
Total Gross Nonbank Financial Assets, by Type of Institution
(Percentage of total nonbank financial assets)



Source: FSB 2025; Office of Financial Research; and IMF staff calculations

NBFIs accounts for a significant share of cross-border portfolio investment

Share of the Nonresident NBFIs in Portfolio Debt and Equity Investment (Percent)



Source: Portfolio Investment Positions by Counterpart Economy (IMFPIP)

Notes: "Other" includes the official sector, nonfinancial corporations, and households.

... because of several vulnerabilities

❖ Liquidity mismatches of investment funds

- **Exposure to illiquid assets** can create liquidity risks if not managed appropriately
- **Forced sales of liquid assets** can exacerbate market stress and transmit shocks well beyond the institutions directly affected (Oct 2022 GFSR, Chapter 3)

❖ Leverage, crowded positions, and funding pressures can amplify market stress

- The growing market footprint of **hedge funds** can support market functioning in normal times...
- But may amplify asset price dislocations and liquidity strains during stress periods (Oct 2026 GFSR, Ch. 2)

❖ Global nonbank investors can transmit stress across borders

- **Cross-border portfolio flows** offer important benefits to emerging markets, but also carry risks, such as heightened sensitivity to shifts in global risk sentiment (Apr '26 GFSR, Ch. 2)
- Hedge funds particularly sensitive to shifts in global financial conditions and risk aversion

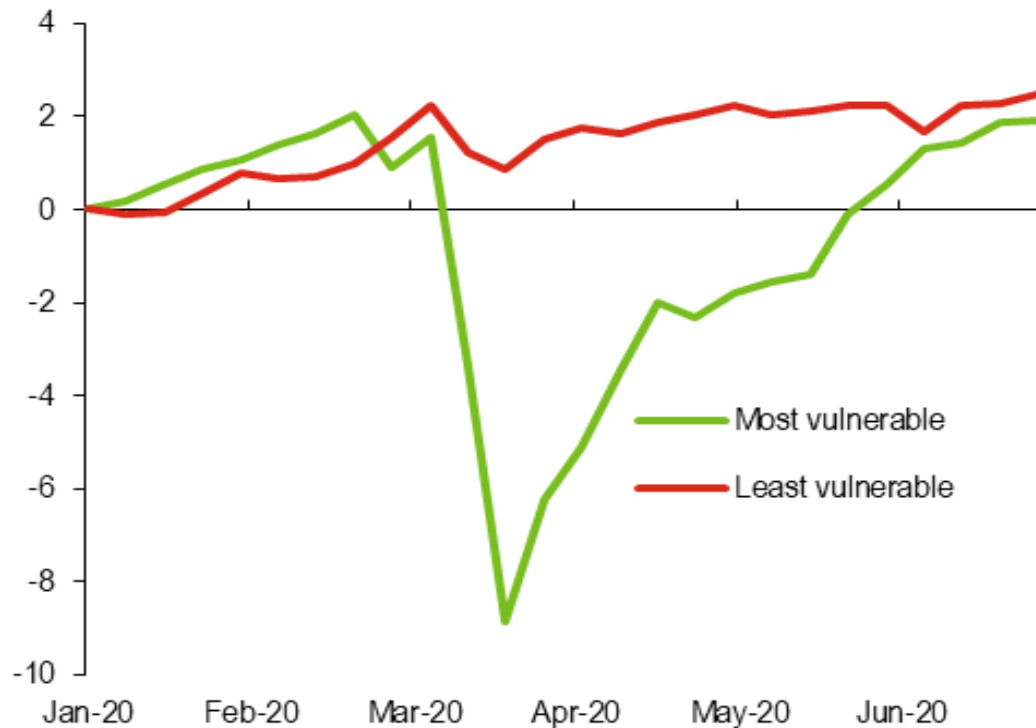


Liquidity mismatches of investment funds

Liquidity mismatches can amplify shocks and destabilize asset prices

During the dash-for-cash episode in March 2020, bonds held by more illiquid funds had lower returns

Cumulative Bond Returns by Asset Vulnerability, 2020:Q1–Q2
(Percent)

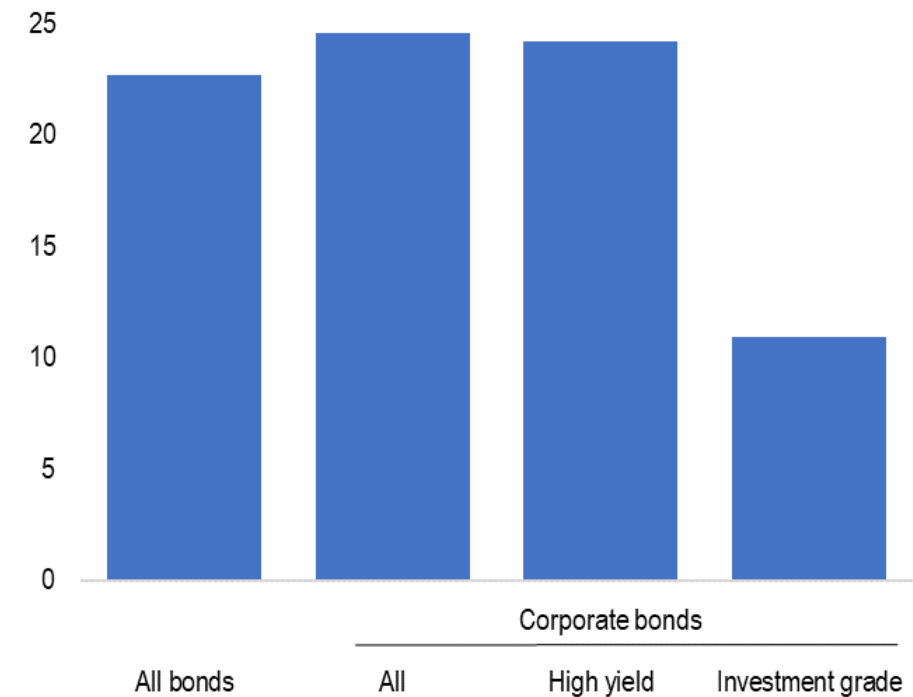


Source: FactSet; Morningstar; Refinitiv; and IMF staff calculations.

Note: Most (least) vulnerable bonds are those in the top (bottom) tercile of the distribution of the asset-level vulnerability measure

Corporate bonds held by less liquid funds tend to experience significant return volatility, but more liquid asset classes, such as sovereign bonds or equities, do not.

Effect of Vulnerability on Bond and Equity Return Volatility
(Percent of median volatility)



Source: FactSet; Morningstar; Refinitiv; and IMF staff calculations.

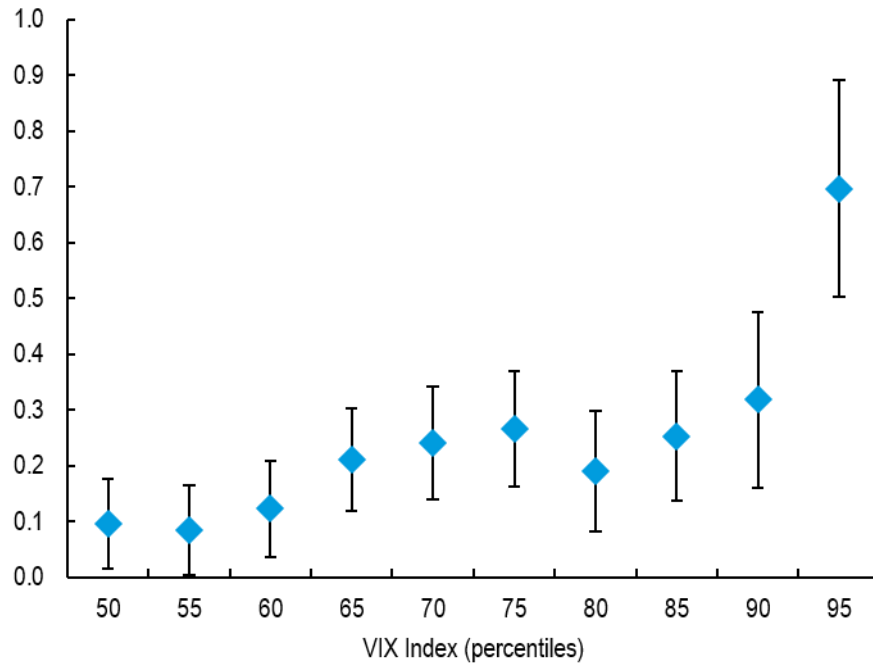
Note: The figure shows the coefficient on the asset-level vulnerability measure in a regression of quarterly asset return volatility on the lagged vulnerability measure.

An adverse shock can create a vicious circle, especially for less liquid funds

Funds holding illiquid assets tend to face larger outflows, especially at high levels of stress ...

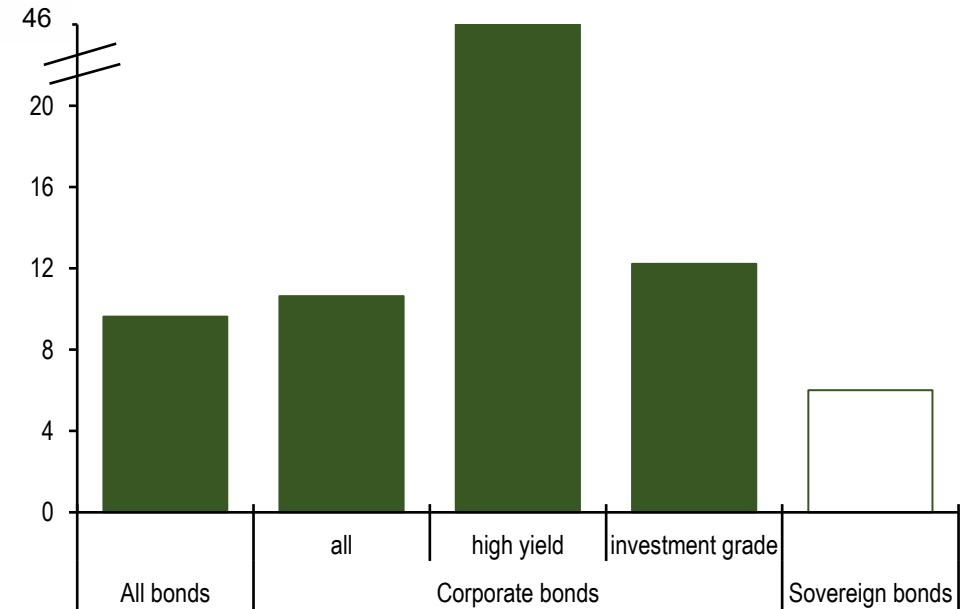
... resulting in stronger selling pressures for assets held by less liquid funds

Effect of Fund Illiquidity on Fund Outflows by Level of Financial Stress
(Percent of fund size)



Source: Bloomberg Finance L.P.; FactSet; Morningstar; and IMF staff calculations..
Note: Regressions of outflows from funds on fund-level illiquidity measures while controlling for fund-level characteristics and country-time fixed effects.

Effect of Fund Vulnerabilities on Selling Pressures
(Percent of average sell-off pressure)



Source: Bloomberg Finance L.P.; FactSet; Morningstar; and IMF staff calculations..
Note: Effect of the asset-level vulnerability measure on selling pressures of assets. Selling pressure is based on realized fund trades conditional on large fund flows to capture selling pressures for a given asset.

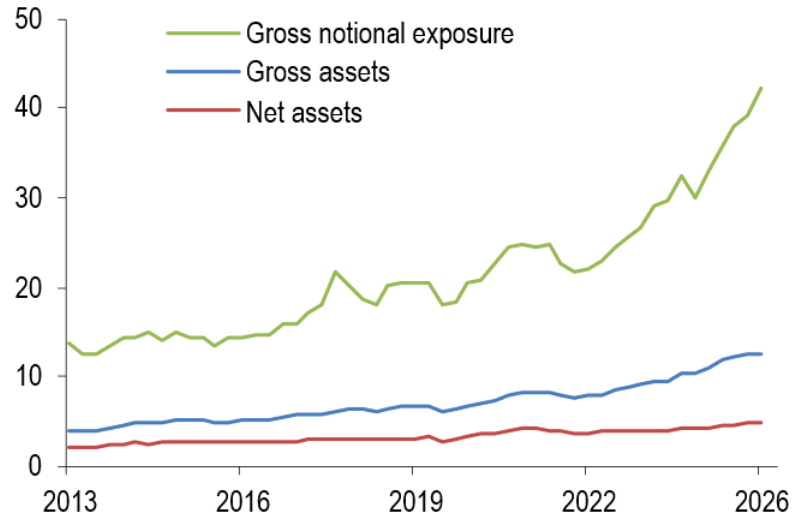


Hedge funds and financial stability

Hedge funds have been growing, financed primarily through leverage...

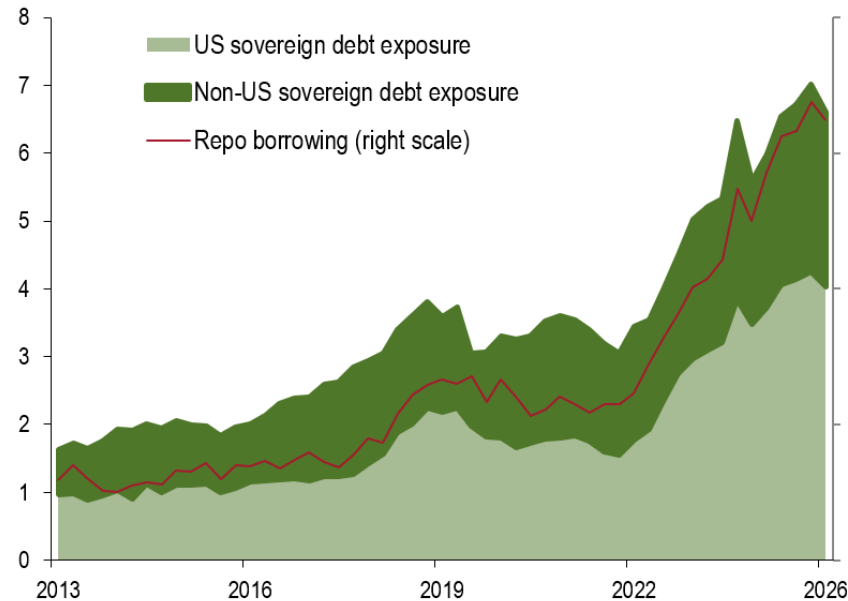
Hedge funds have become important participants in global financial markets...

Hedge Fund Assets and Notional Exposure
(Trillions of dollars)



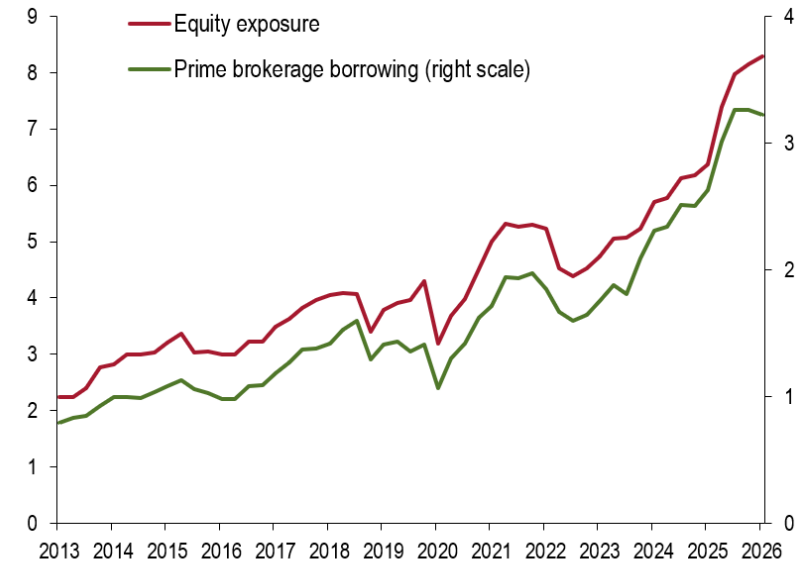
... with repo borrowing funding increased sovereign bond exposures ...

Repo Borrowing and Sovereign Bond Exposure
(Trillions of dollars)



... and prime brokerage borrowing mainly supporting growth in equity exposures.

Prime Brokerage Borrowing and Equity Exposure
(Trillions of dollars)

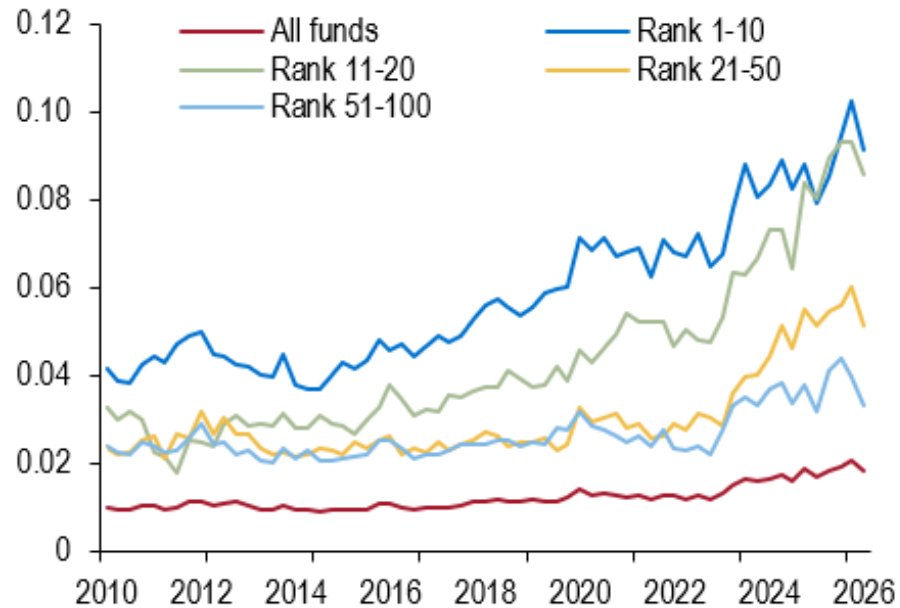


Source: Sources: Federal Reserve Board of Governors, FSB (2025), OFR, and IMF staff calculations.

... and increasingly facing similar exposures and fragile end-investor funding

Hedge fund equity portfolios are becoming increasingly similar, especially among the largest funds.

**Portfolio Similarity, by Hedge Fund Size
(Index)**

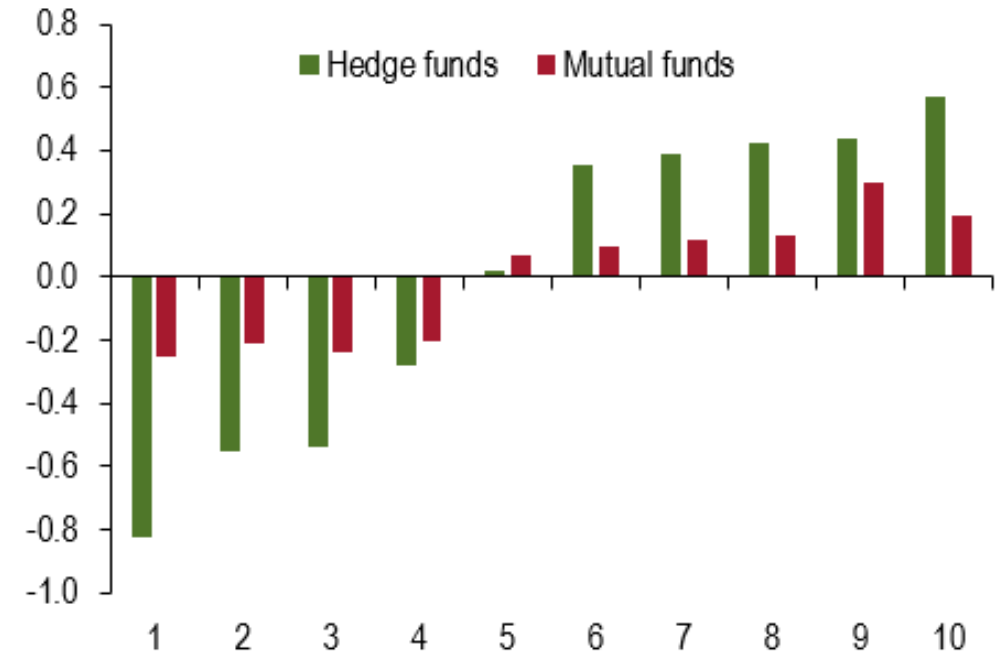


Source: FactSet, OFR, and IMF staff calculations.

Note: Portfolio overlap / cosine similarity is computed by comparing hedge funds' portfolio weight vectors within each issuer region and averaging across fund pairs; higher values indicate more similar portfolios

End investors of hedge funds are more sensitive to performance compared to those of mutual funds.

**Average Fund Flows, by Return Decile
(Percentage of net assets)**

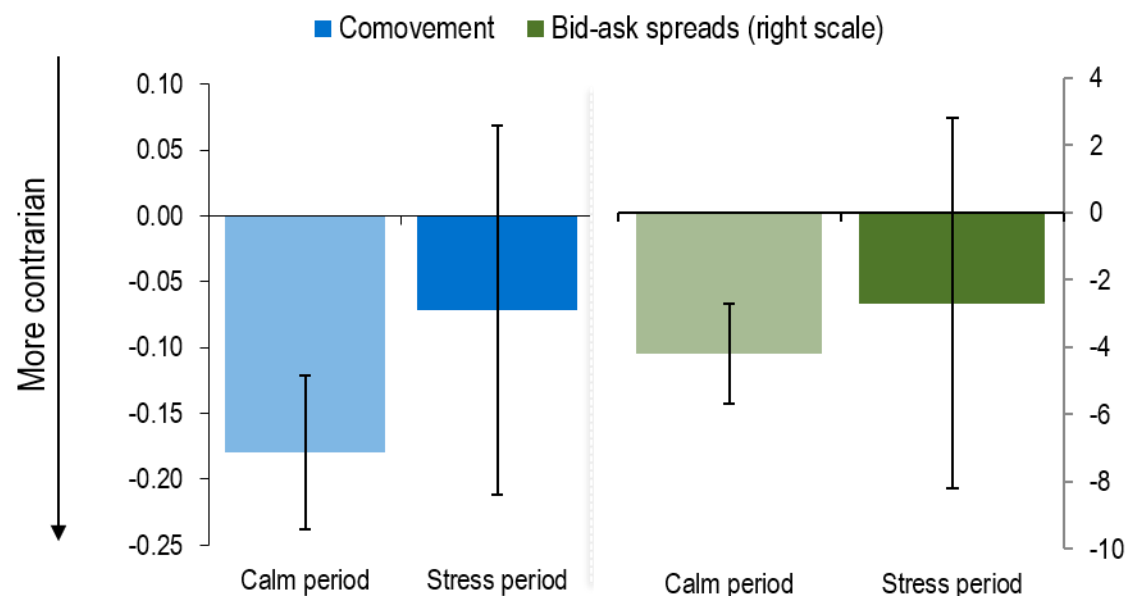


Source: FactSet, OFR, and IMF staff calculations.

Hedge funds support market functioning in calm time but can also amplify shocks...

Hedge funds absorb price pressures, correct mispricing, and improve market liquidity in normal times

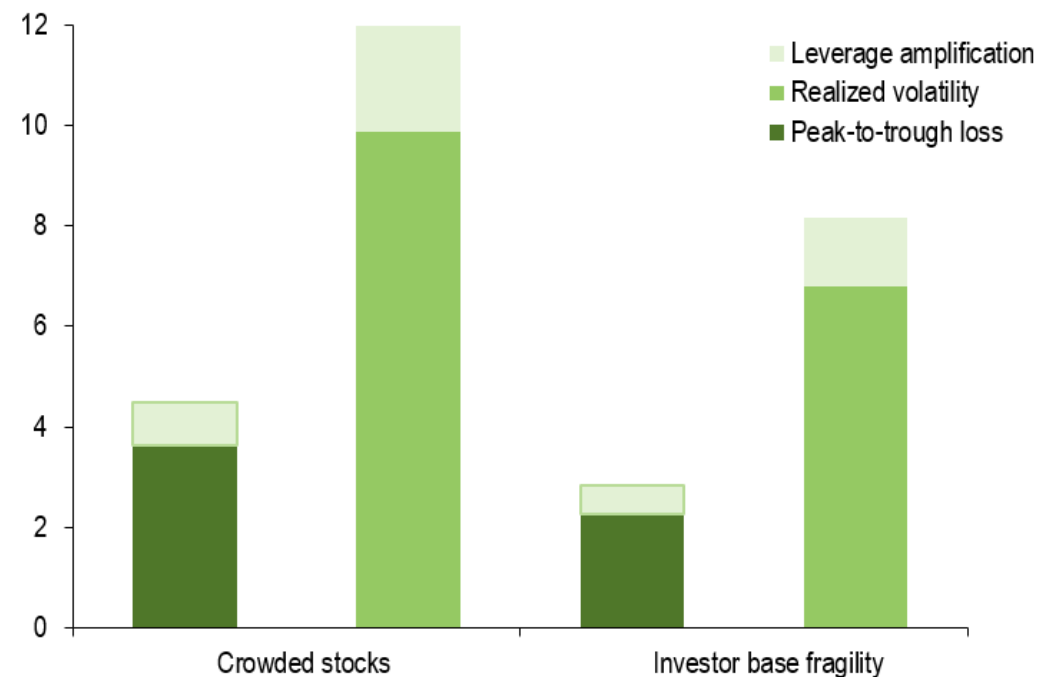
Co-movement of Hedge Fund Purchases with Stock Returns and Bid-Ask Spreads (Index; basis points)



Sources: FactSet and IMF staff calculations.

... but their vulnerabilities also amplify the effects of global risk shocks

Effect of hedge fund crowdedness, investor base fragility, and leverage on volatility and peak-to-trough losses (Percentage points)

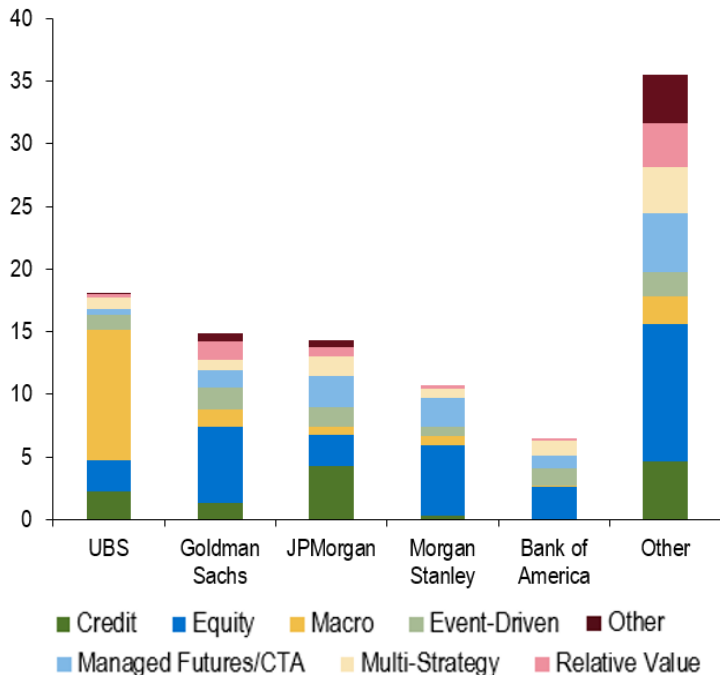


Sources: Hedge Fund Research; Lipper TASS; With Intelligence; FactSet.
Note Crowdedness measures a stock's exposure to synchronized hedge fund liquidations. Flow fragility measures a stock's vulnerability to correlated hedge fund selling pressure,

... transmitting stress to their counterparties, with macro-financial stability implications

Prime broker exposures vary across investment strategies ...

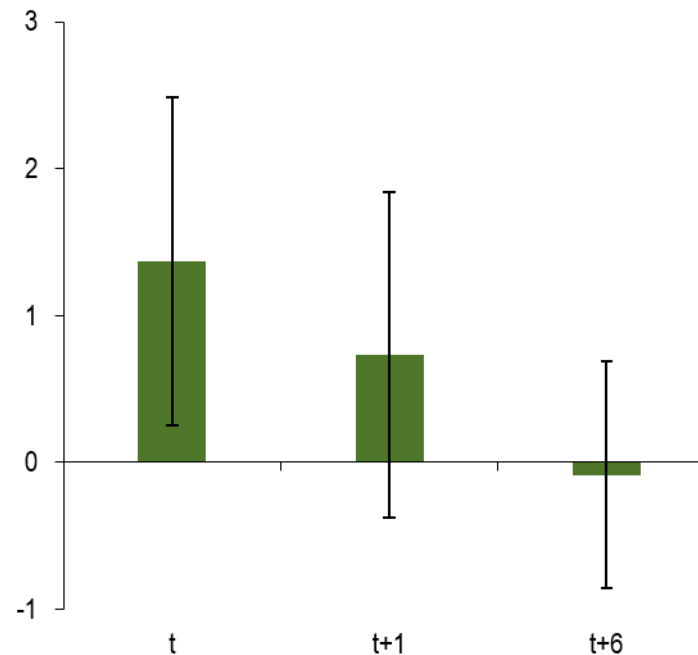
Hedge Fund Prime Brokers by Client Assets Under Management
(Percent of total)



Sources: HFR, With Intelligence, Lipper TASS, and IMF staff calculations.

... creating shock transmission channels between hedge funds and dealer banks.

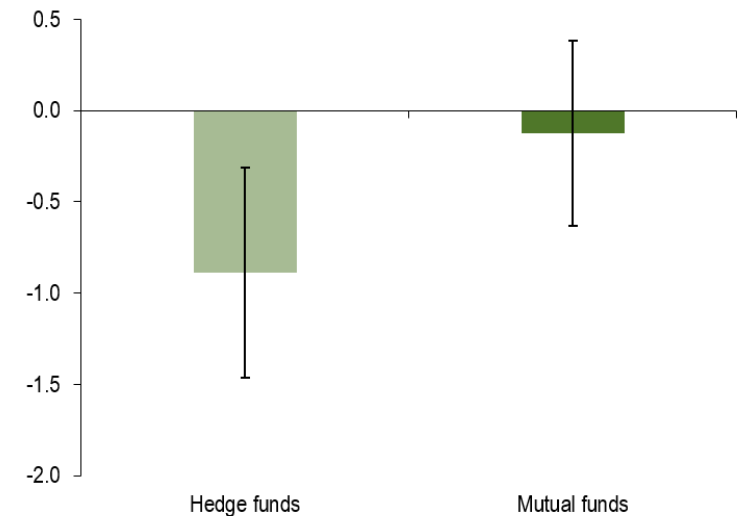
Effect of a Hedge Fund Shock on Prime Broker Returns
(Percentage points)



Sources: HFR and IMF staff calculations.
Note: Coefficients from IV panel regressions of prime broker stock returns on broker-specific aggregate hedge fund returns.

Larger hedge fund footprint can affect broader financial conditions during global macro-financial shocks.

Hedge Fund Equity Market Presence and Stock Returns during Market Stress
(Percentage points)



Sources: Sources: FactSet and IMF staff calculations.
Note: Regressions of equity returns on lagged of hedge fund ownership interacted with global stress.

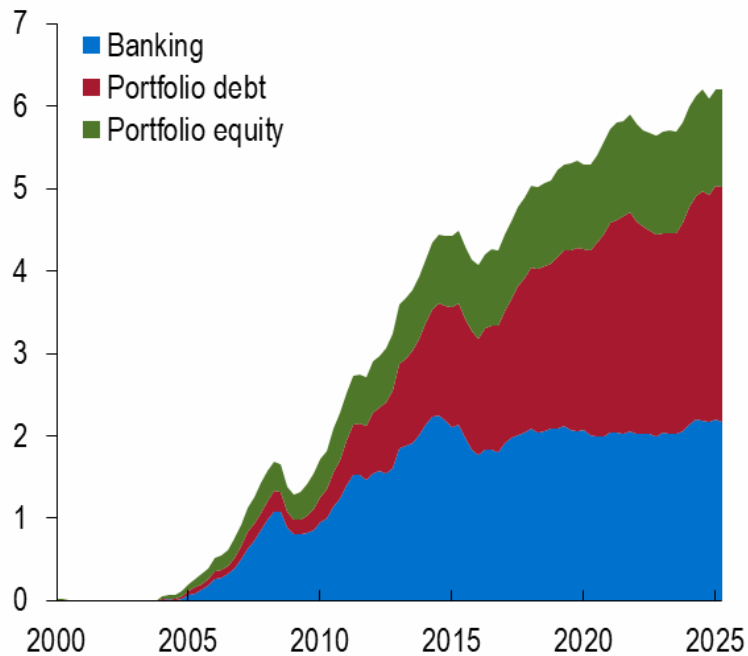


Sensitivity of cross-border investment of global NBFIs

Cross-border NBFI investment is an important source of funding, particularly for EMs

Since the GFC, portfolio flows to EMs have surged ...

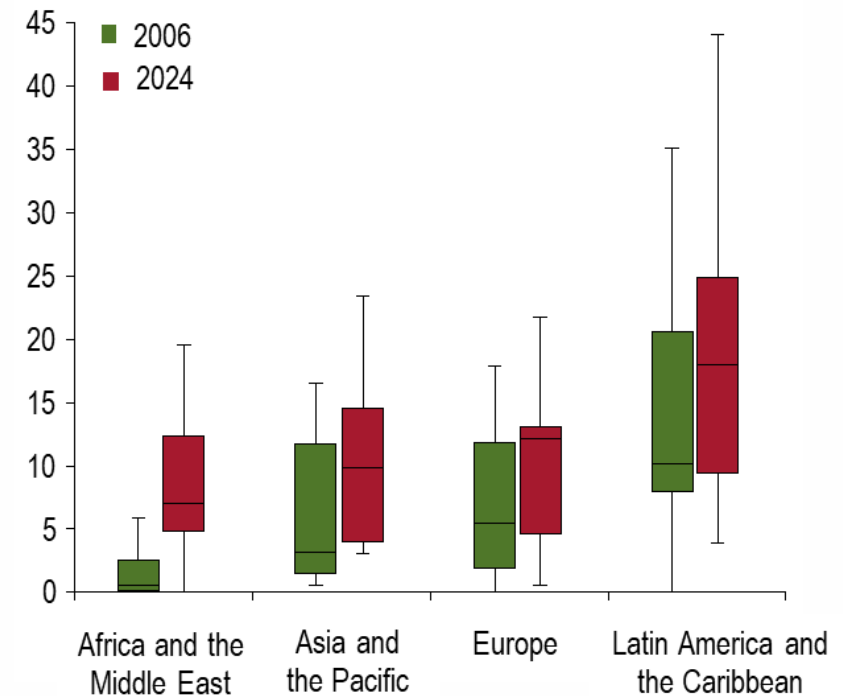
Cumulative nonresident portfolio and banking flows to EMs (Trillion of US dollars)



Sources: Bank for International Settlements; IMF, Balance of Payments Statistics; IMF, Portfolio Investment Positions by Counterpart Economy database; and IMF staff calculations.

... especially debt flows, which are sizeable.

External Portfolio Debt Liabilities (Percent of GDP, interquartile range, median)



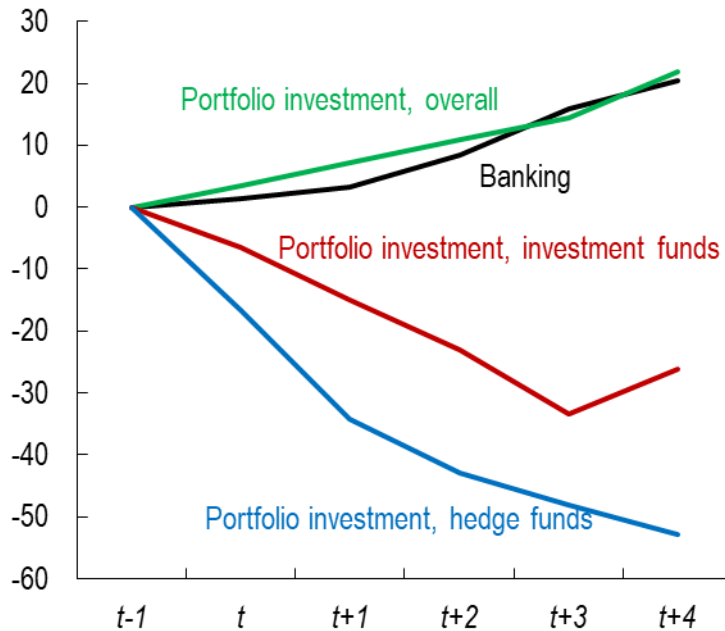
Sources: Bank for International Settlements; IMF, Balance of Payments Statistics; IMF, Portfolio Investment Positions by Counterpart Economy database; and IMF staff calculations.

Non-bank flows bring substantial benefits but can also create challenges ...

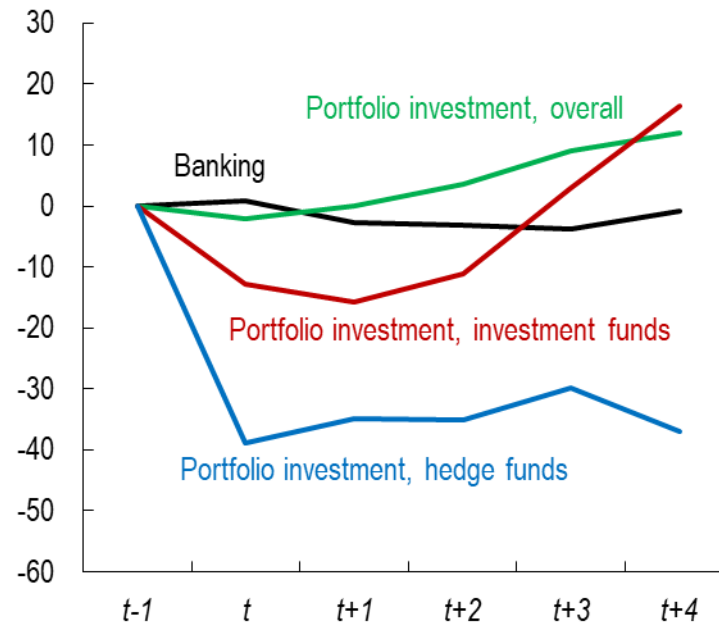
Emerging markets (Ems) have experienced significant reversals in investment and hedge fund flows during major episodes of market stress since the global financial crisis.

Cross-Border Portfolio and Bank Liability Flows
(Cumulative quarterly flows as a percent of initial stock)

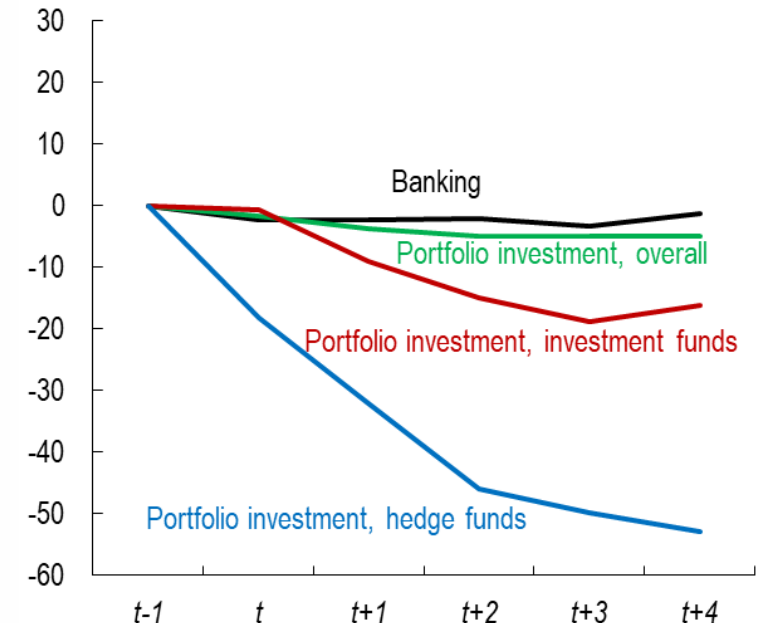
Taper Tantrum (2013:Q1)



COVID-19 Pandemic (2020:Q1)



Policy Tightening by the US Federal Reserve (2022:Q1)



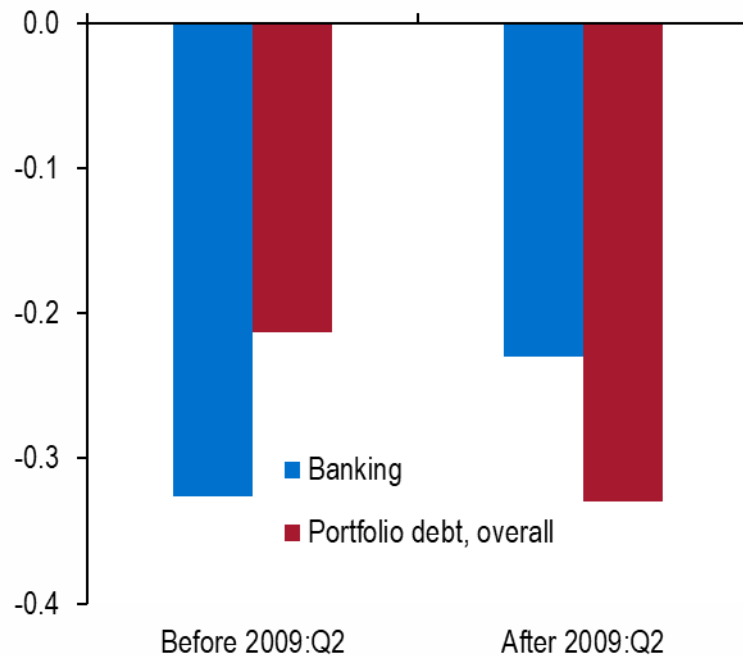
Sources: Bank for International Settlements; Emerging Portfolio Fund Research; FactSet; IMF, Balance of Payment Statistics; and IMF staff calculations.

Note: Portfolio investment flows include portfolio debt and equity liability flows, except in panel 1 where portfolio investment of hedge funds includes equities only because of data limitations. On the x-axis, t indicates the quarter of the respective shock: the first quarter of 2013 in panel 1, the first quarter of 2020 in panel 2, and the first quarter of 2022 in panel 3.

...as nonbank financial investors are highly sensitive to global risk conditions

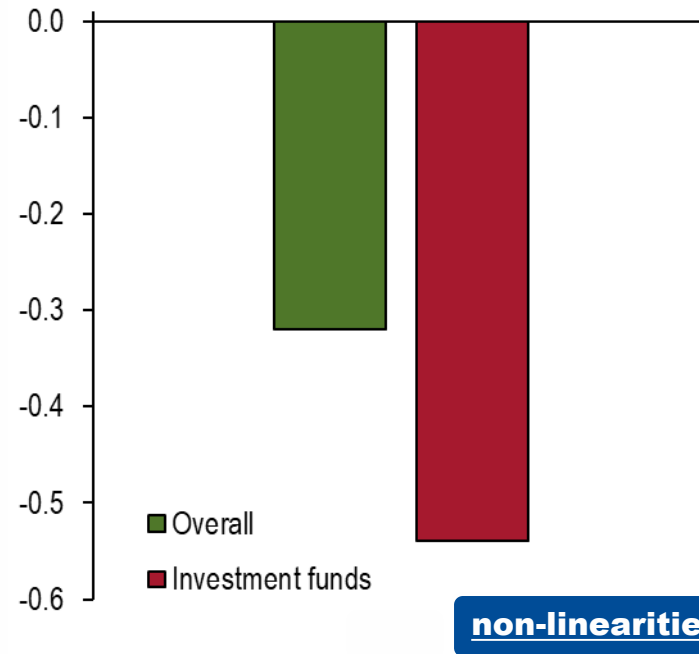
The sensitivity of cross-border bank lending to global risk has declined relative to portfolio debt flows.

Banking and portfolio debt liability flows to EMs relative to GDP following an increase in the VIX (standard deviations)



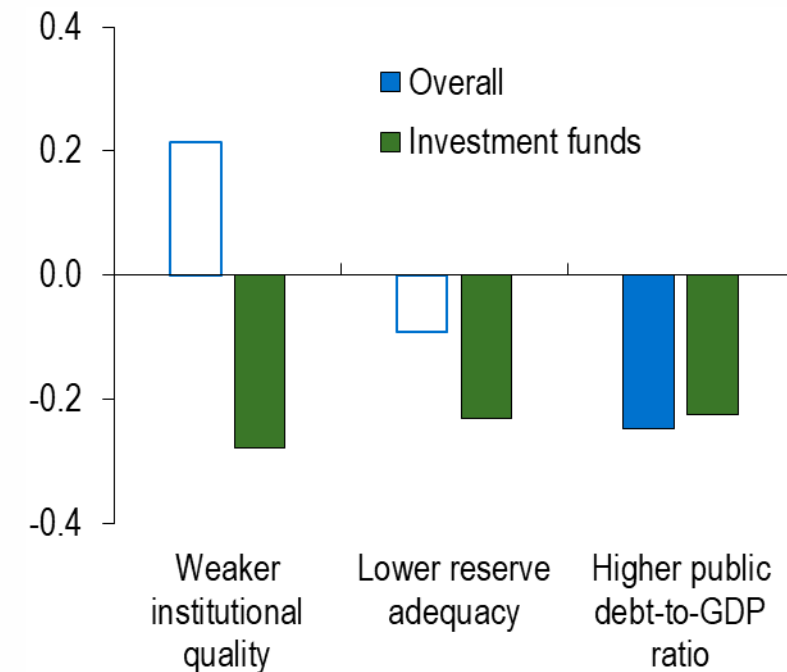
Bond fund flows are particularly sensitive to global risk.

Portfolio debt liability flows to EMs relative to GDP following an increase in the VIX (standard deviations)



Bond funds retrench more strongly from countries with preexisting vulnerabilities.

Portfolio debt liability flows to EMs relative to GDP following an increase in the VIX (standard deviations)

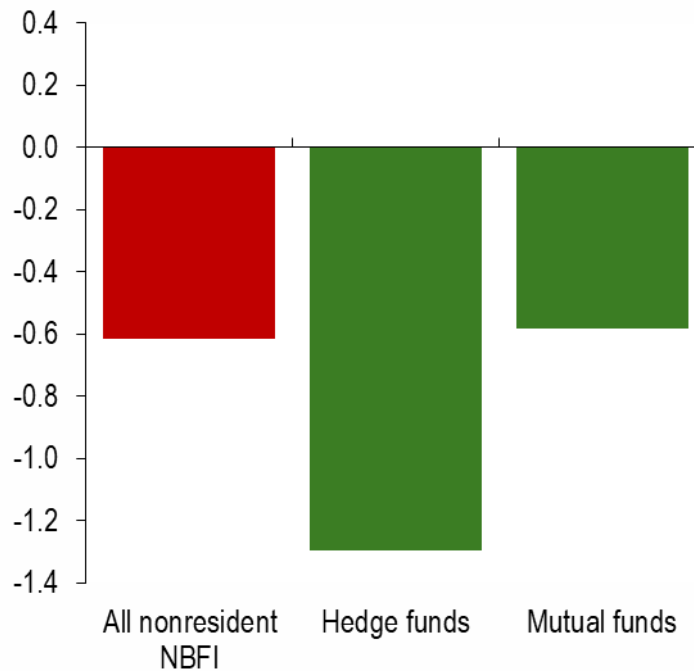


Notes: Regressions include a large set of country controls, and year fixed effects or various other global risk factors. The results are largely robust to using various other global factors, e.g., risk-on risk-off (RORO) index, the World Uncertainty Index (WUI), and the US Dollar Index (DXY). Solid bars indicate that the reported effect is statistically significant at 10 percent.

Some types of NBFIs are more risk sensitive than others

Hedge funds and mutual funds are most sensitive to global risk ...

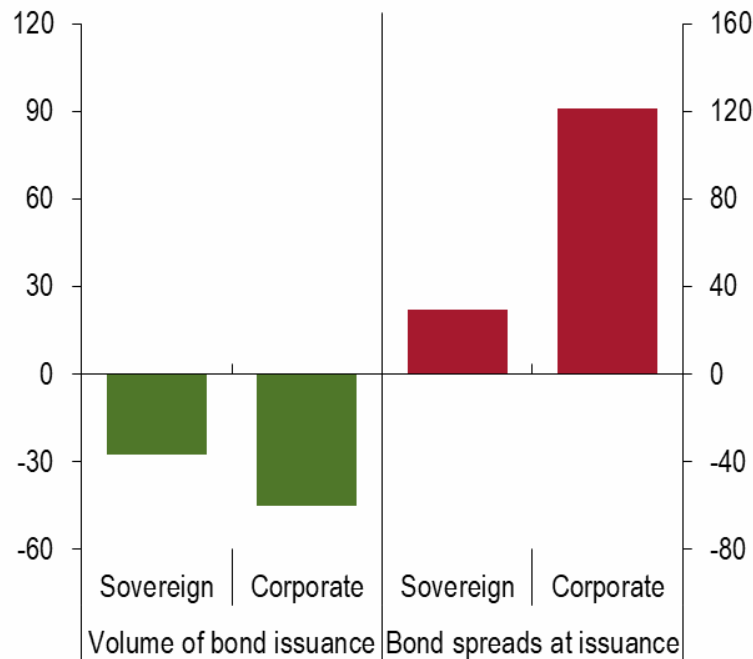
Change in nonresident investments after an increase in the VIX (percentage points, relative to initial holdings)



Stress episodes trigger weaker bond issuance, higher spreads ...

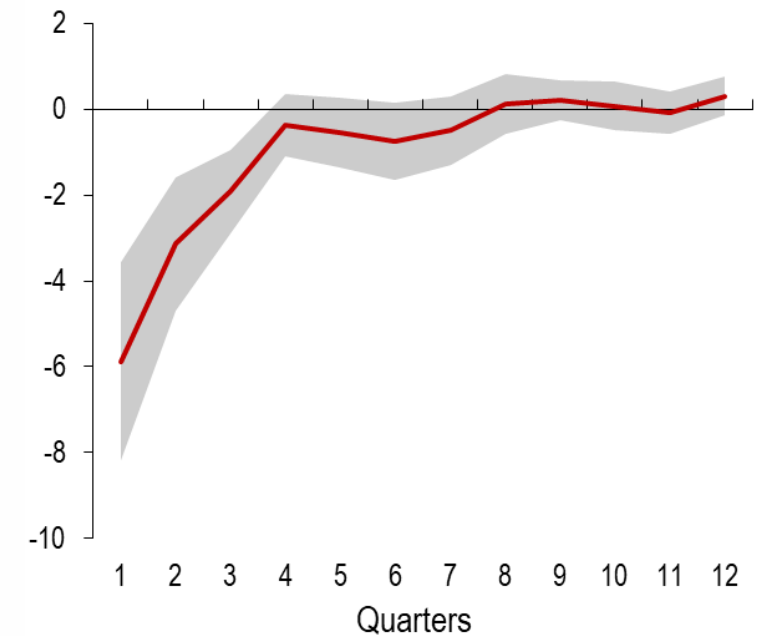
Volume and Spreads of Bond Issuance at International Markets for Issuers with Higher Reliance on ‘Flighty’ Investors

(percentage points, left scale; basis points, right scale)



... with broader macro-financial implications.

Growth-at-Risk after an Increase in the VIX for Countries with Greater Ex Ante Reliance on Flighty Investors
(Percent)



Sources: Bank for International Settlements; Emerging Portfolio Fund Research; FactSet; IMF, Balance of Payment Statistics; and IMF staff calculations.

Note: Portfolio investment flows include portfolio debt and equity liability flows, except in panel 1 where portfolio investment of hedge funds includes equities only because of data limitations. On the x-axis, t indicates the quarter of the respective shock: the first quarter of 2013 in panel 1, the first quarter of 2020 in panel 2, and the first quarter of 2022 in panel 3.

Key takeaways

NBFI bring important benefits to financial markets—but their vulnerabilities can magnify shocks and transmit stress across markets and borders.

❖ **Liquidity mismatches can amplify shocks and destabilize asset prices**

- Open-ended funds offering daily redemptions while holding illiquid assets can amplify selling pressure and price declines.

❖ **Hedge funds support market functioning—but can amplify stress.**

- **Leverage, crowded positions, and fragile investor funding** can magnify shocks, while links to dealer banks in particular provide channels for contagion.

❖ **The investor mix matters for emerging-market resilience.**

- **Hedge funds and mutual funds are highly sensitive to changes in global risk**
- Greater **reliance on risk-sensitive investors** can mean **tighter financing conditions** and greater downside risk to growth during global stress.

Policy implications

Data, transparency, and risk monitoring

- **Close data gaps** on nonbank exposures and vulnerabilities, including on leverage, derivatives exposures, prime broker relationships, and cross-border activities.
- **System-wide stress testing** incorporating, where relevant, investment funds as well as hedge funds and their linkages with other intermediaries.

Prudential toolkit

- Policy measures **calibrated to the source of risk** with **activity-based measures** where vulnerabilities arise across many funds and **entity- and concentration-based measures** where risks are concentrated in specific firms or exposures.
- Strengthen **liquidity management tools** of investment funds.
- Stronger **international cooperation** to close regulatory and data gaps.

Market structure and macroeconomic policies

- Strengthening **institutional quality** and maintaining adequate **fiscal and external buffers** to help mitigate capital flow volatility



감사합니다
Thank you!

