CHAPTER 1

ENHANCING RESILIENCE AMID GLOBAL TRADE UNCERTAINTY

The October 2024 *Global Financial Stability Report* highlighted that asset valuations—particularly of stocks related to technology—were stretched and that financial market volatility was low compared with the heightened levels of economic uncertainty. Leverage in the financial system was growing, especially among nonbank financial intermediaries (NBFIs). The exposure of the banking system to NBFIs was rising. These fragilities could amplify adverse shocks, abruptly tightening financial conditions.

Tariff announcements by the United States and countermeasures by other countries triggered a bout of policy uncertainty starting in February 2025. The surprise magnitude of tariffs announced on April 2 significantly shifted analyst expectations toward lower growth (see the April 2025 *World Economic Outlook*). Financial markets reacted swiftly to the evolving economic landscape—with stock markets highly volatile, core sovereign bond market yields gyrating, emerging market currencies depreciating, and corporate bond spreads widening. The spike in financial market volatility can be viewed as a catch-up to the elevated levels of economic and trade uncertainty. Volatility and uncertainty remained high in the weeks after the April 2 tariff announcement as rounds of retaliatory tariffs and countermeasures ensued between the United States and China, while the high US tariffs on other jurisdictions were postponed.

Against this backdrop, this *Global Financial Stability Report* assesses that global financial stability risks have increased significantly, driven by tighter global financial conditions and heightened economic uncertainty. According to the IMF's Growth-at-Risk (GaR) model, in the year ahead and with a 5 percent chance, global growth could fall below 0.4 percent, highlighting an elevated level of financial stability risk. This figure is nearly a full percentage point worse than the October 2024 assessment.

Our assessment of elevated financial stability risks is also supported by three key forward-looking vulnerabilities. First, despite the recent turmoil in markets, valuations remain high in some key equity and corporate bond segments, conditional on the grimmer global economic outlook. At the same time, economic policy and trade uncertainty remain at an all-time high, foreboding further shocks, corrections of asset prices, and tightening of financial conditions.

Second, some financial institutions could come under strain in volatile markets, especially highly leveraged ones. As the hedge fund and asset management sectors grow, so have their aggregate leverage levels and the nexus with the banking sector from which they borrow, raising the specter of weakly managed NBFIs being pushed to deleverage when they face margin calls and other liquidity needs. The ensuing sell-off and deleveraging spiral could exacerbate market turmoil, with implications for the broader financial system.

Third, further turbulence could descend upon sovereign bond markets, especially in jurisdictions where government debt levels are high. Emerging market economies already face the highest real financing costs in a decade may now need to issue more debt at high interest rates to fund the fiscal spending needed to ameliorate the economic impact of the new tariffs (see the April 2025 *Fiscal Monitor*). Major advanced economies will likely issue more bonds to finance enlarging fiscal deficits at a time when bond market functioning has become more challenged. Investor concerns about public debt sustainability and other fragilities in the financial sector can worsen in a mutually reinforcing fashion.

These three key vulnerabilities—further correction of asset prices, potential strains impacting highly leveraged NBFIs, and turbulence in sovereign bond markets—are elaborated upon, respectively, in the sections "The Risk of Further Asset Price Corrections," "Financial Institutions: Increasingly Leveraged and Interconnected," and "Emerging and Frontier Markets: Challenges and Resilience," and "Sovereign Bond Market Functioning." This chapter also discusses policies that can help mitigate the three key vulnerabilities and assesses stability in the corporate and household sectors.

The assessments and analyses in this GFSR are based on financial market data available to IMF staff through April 15, 2025, but may not reflect published data by that date in all cases.

The Risk of Further Asset Price Corrections

Tumultuous Markets: When Stretched Valuations Meet Trade Shocks

Since the October 2024 *Global Financial Stability Report*, investors have become concerned about the stretched valuations of assets they had been confident in. After the United States began to roll out tariffs in February, US equity prices declined significantly (Figure 1.1, panel 1, right bars, and Figure 1.1, panel 2), after outperforming global peers over the past five years (Figure 1.1, panel 1, left and middle bars); heightened geopolitical risks have also played a role (see Chapter 2).[1] The sell-off in equities sped up violently and became worldwide after tariffs were imposed by the United States on April 2 on almost all its trading partners, triggering fears of a stagflationary economy in the United States and recessions in other countries.[2] With stocks plunging, corporate bond spreads have widened, on net (Figure 1.1, panel 3); US spreads remained tighter compared with bonds of companies in continental Europe and the United Kingdom. Implied volatility in major stock markets has spiked as investors sought downside protections by purchasing put options (Figure 1.1, panel 4), and the Chicago Board of Exchange's VIX index appears to be catching up to trade and economic policy uncertainties (Figure 1.1, panel 5). Although financial markets have regained their footing after the announcement on April 9 that the United States will postpone the implementation of the higher tariffs to allow for negotiation, investors have remained anxious as China and the United States stay locked on retaliatory tariffs.

The sharp sell-off following the April 2 tariffs initially pushed down long-term yields of benchmark government bonds as investors sought safe haven assets in anticipation of a deterioration in the global economic outlook (see Figure 1.1, panel 6). This decline in long-term yields was short-lived, however, with 10-year yields rising strongly within a couple of days. The rise in US Treasury yields was especially notable and can be attributed to investors' preference for cash and other short duration assets over long-term bonds during very volatile markets, a gyrating US dollar, and the unwinding popular leveraged trades like swap spread trades and Treasury cash-futures basis trades (see section "Asset Managers' Growing Use of Derivatives Increases Risks in the Financial System"). As the selling pressure in the Treasury market mounted, dealers reportedly reached their intermediation limits and market liquidity deteriorated, thereby exerting further upward pressure on yields (see section "Constraints on Dealer Balance Sheets Are Increasing the Fragility of Bond Markets").

By contrast, two-year bond yields (Figure 1.1, panel 6) have consistently declined since the April 2 tariffs, reflecting investors' expectations of more policy rate cuts by major central banks. For the euro area, this is due to inflation expectations having declined compared with before the tariff announcement (Figure 1.1, panel 7). The story is more complicated for the United States, as inflation expectations over the near- to medium-term have risen meaningfully in recent months, suggesting a challenging trade-off faced by the Federal Reserve in lowering inflation pressures and buttressing a slowing economy.

Elevated Uncertainty and Still-High Valuations Forebode Further Asset Price Corrections

Before the recent turbulence, many stock indexes have gone up in value, leaving stock price returns higher on net since the October 2024 *Global Financial Stability Report*. A decomposition of the returns shows that improved earnings projections and compressions of equity risk premiums—the additional compensation investors require to take on the risk of investing in equities rather than "risk-free" bonds—more than offset the drag from high interest rates (Figure 1.2, panel 1). Despite the recent sell-off in US stocks, that market is currently still trading at around the 80th historical percentile of 12-month-forward price-to-earnings (P/E) ratios since 1990, and price appreciation continues to outpace growth in expected 12-month-forward earnings (Figure 1.2, panel 2).

Valuations of US stocks are still lofty, and further price corrections are possible. The current valuation levels require persistently robust growth in earnings over the medium term, an increasingly difficult feat

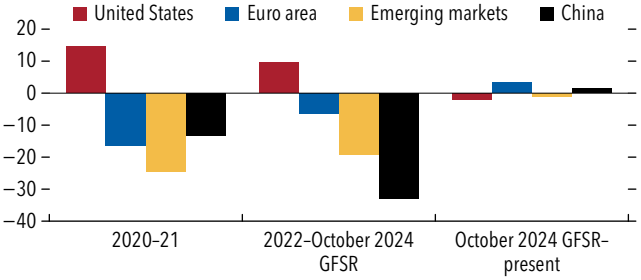
[1]Before this, a more targeted sell-off in technology stocks occurred in January, triggered by the announcement of a potentially lower-cost artificial intelligence large language model from Chinese company DeepSeek, which led investors to reassess the sustainability of a tech rally driven by large prospective investments in artificial intelligence (see Box 1.1 for further discussion).

[2]Performance of sustainable equities have performed even more poorly, in part due to the asset class's high correlations with the broader stocks market and in part reflecting their lack of attraction to investors in recent years (see Box 1.3).

Figure 1.1. Asset Price Movements since the October 2024 *Global Financial Stability Report*

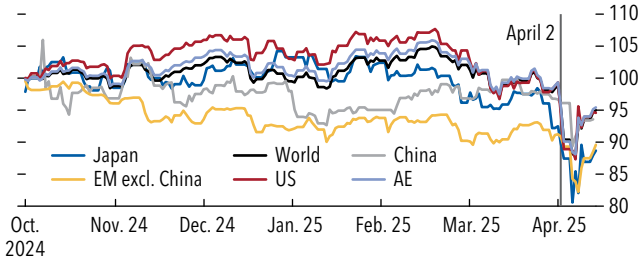
Stocks in the United States have underperformed somewhat recently, after years of outperformance relative to other regions ...

1. Stock and Long-Term Bond Indices Returns versus MSCI World Index
(Percentage point difference)



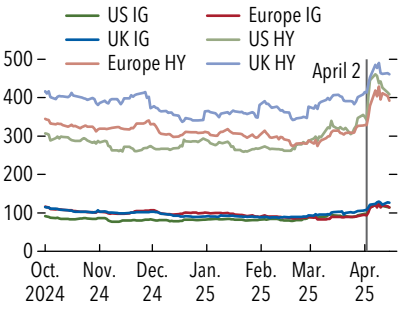
... as the sell-off in US markets picked up in February and accelerated further after April 2.

2. Performance of Equity Prices in Advanced and Emerging Market Economies
(Index, October 1, 2024 = 100)



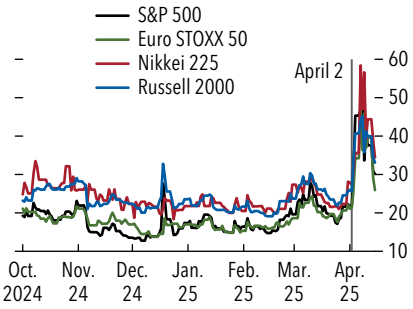
Corporate spreads have widened.

3. Spreads in Investment-Grade and High-Yield Corporate Bonds
(Basis points)



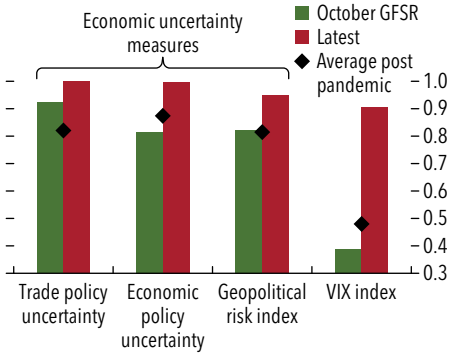
Stock volatility has moved up ...

4. Implied Volatility in Equity Markets
(Percent)



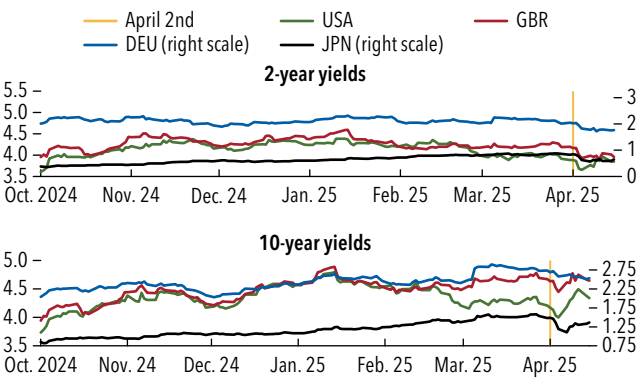
... alongside higher trade and economic uncertainty.

5. Economic Uncertainty and Financial Volatility
(Percentile)



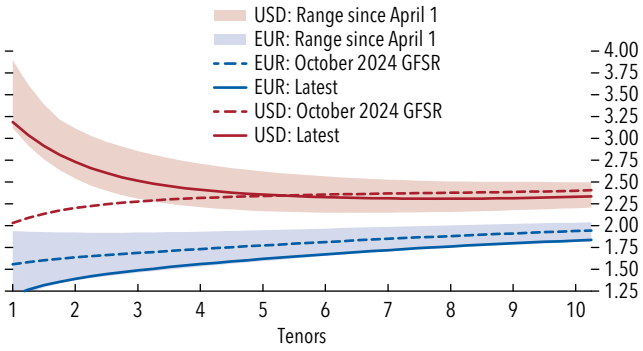
Long-term yields fell initially in response to the US imposing tariffs on April 2 amid the ensuing market turbulence but have rebounded since.

6. Government Bond Yields for Selected Advanced Economies
(Percent)



Market-implied expected inflation over the near- to medium-term in the United States remains meaningfully elevated.

7. Market-Implied Inflation Expectations: Inflation Swap Curves for the United States and the Euro Area
(Percent)



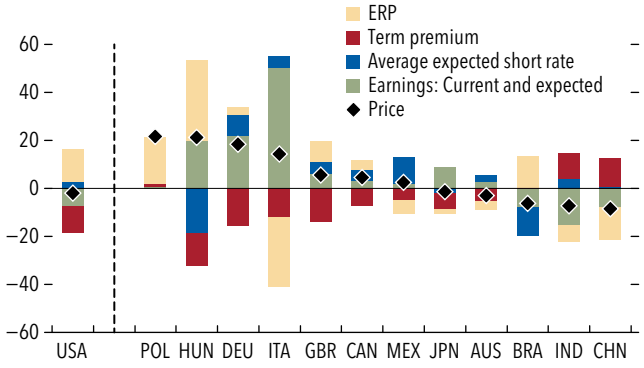
Sources: Baker, Bloom, and Davis 2016; Bloomberg Finance L.P.; Caldara and Iacoviello 2022; MSCI; and IMF staff calculations.

Notes: Panel 1 uses S&P 500 Index for the United States, Euro Stoxx 600 for the euro area, MSCI EM Index for Emerging Markets, and Shanghai Shenzhen CSI 300 Index for China. Series plotted are percentage points difference in each series and the MSCI World Index. Panel 2 uses Nikkei 225 for Japan, Shanghai Shenzhen CSI 300 Index for China, S&P 500 Index for the United States, and MSCI indices for all other series. Panel 3 uses option-adjusted spreads. In panel 4, the Chicago Board Options Exchange Volatility Index (VIX) is the benchmark measure of US stock market volatility. Its European, Japanese, and US small-cap counterparts are the Euro Stoxx 50 Volatility Index, Nikkei Stock Average Volatility Index, and CBOE Russell 2000 Volatility Index, respectively. In panel 5, "economic policy uncertainty" and "trade policy uncertainty" are the indices of Baker, Bloom, and Davis (2016); "geopolitical risk" is the index of Caldara and Iacoviello (2022). The series are shown in percentiles since 1997 based on monthly data; "Average Post Pandemic" is the average percentile since 2022. Economic uncertainty measures are text based. Latest level for VIX Index is as of April 15, 2025. Panel 6 should spot 2- and 10-year nominal yields. In panel 7, the shaded regions depict the max–min range of inflation swap curves recorded on an intraday frequency since April 1. AE = advanced economy; EM = emerging market; GFSR = *Global Financial Stability Report*; IG = investment grade; HY = high yield.

Figure 1.2. Asset Valuation Pressures

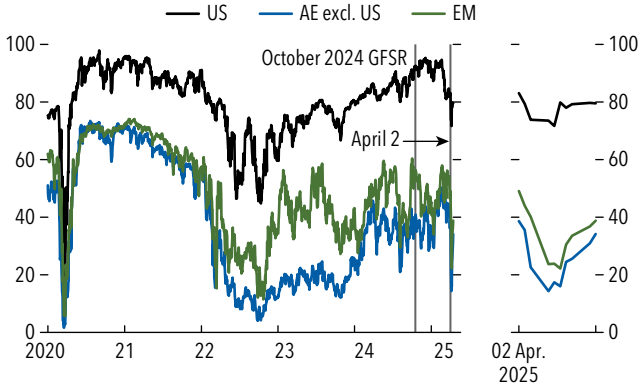
Moderation in earning prospects amid recent sell-off has exerted a downward drag on the S&P 500.

1. Decomposition of Changes in Price Returns since the October 2024 GFSR
(Percent)



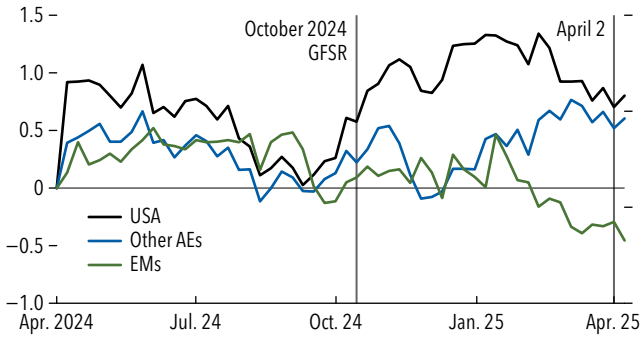
That said, US valuations remain at a premium relative to global peers.

2. Percentiles of 12-Month-Forward Price-to-Equity Ratios since 1990
(Percentile)



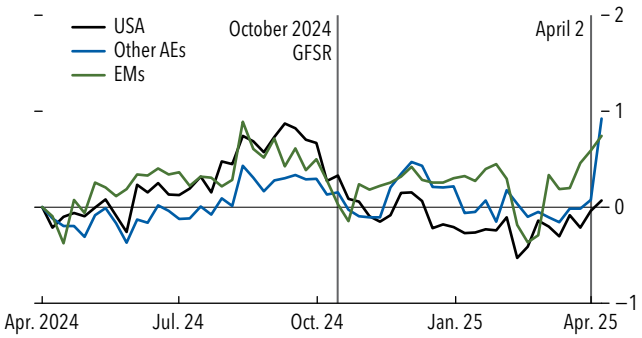
Notwithstanding the recent drop, implied long-term growth in US earnings has increased more than global peers over the past year.

3. Cumulative Change in Implied Long-Term Growth in Earnings since the April 2024 GFSR
(Percent)



Equity risk premium has risen recently, albeit remaining around historically compressed levels.

4. Cumulative Change in Equity Risk Premium since the April 2024 GFSR
(Percent)



Sources: Bloomberg Finance L.P.; LSEG Datastream; MSCI; and IMF staff calculations.

Notes: The decomposition in panel 1 is calculated using a dividend discount model. Panel 2 shows the percentiles of 12-month-forward price-to-earnings ratios since 1990 or the beginnings of the data series. AE excl. US and EM calculations use MSCI Series, while US is S&P 500. Implied long-term growth in earnings in panel 3 is calculated as the growth rate equating current prices to those in a Gordon growth dividend discount model, with long-term rates equal to the 10-year zero coupon rate and the ERP risk premium set constant to the latest value for each country, as derived in panel 4. The country sample for panels 3 and 4 includes the United States, the United Kingdom, Germany, Japan, France, The Netherlands, Finland, Belgium, Italy, Spain, Portugal, Ireland, Denmark, Sweden, Norway, Switzerland, Australia, New Zealand, Canada, Brazil, Mexico, Hungary, Malaysia, South Africa, China, Indonesia, Colombia, Philippines, Poland, Israel, Chile, Czech Republic, India, Romania, Thailand, and Korea; the AE and EM series reflect the median of countries. Panels 1, 3, and 4 use weekly data and are updated as of April 9, 2025. AUS = S&P/ASX 200; BRA = MSCI Brazil Index; CAN = S&P/TSX Composite Index; CHN= CSI 300 Index; DEU = DAX; excl. = excluding; GFSR = *Global Financial Stability Report*; GBR = Financial Times Stock Exchange (FTSE) 100 Index; HUN = Budapest Stock Exchange (BUX) Index; IND = National Stock Exchange of India Nifty 50 index; ITA = CAC Index; JPN = Tokyo Stock Price Index (TOPIX); MEX = MSCI Mexico Index; POL = Warsaw Stock Exchange WIG index.

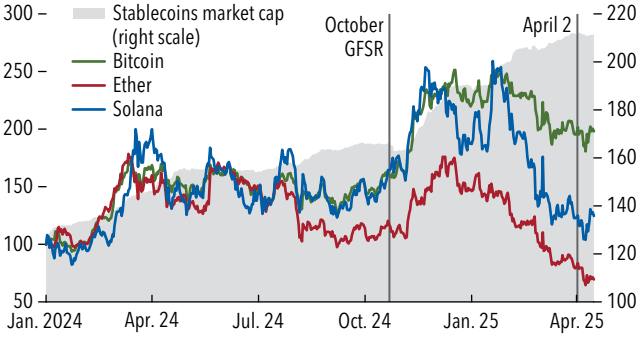
amid elevated economic and trade uncertainty. Indeed, model-implied long-term rate of growth in earnings—backed out from a standard dividend discount model for stock prices—has started to decline globally since February, after the United States began to roll out tariffs (Figure 1.2, panel 3). Implied earnings remain significantly higher for companies in the United States than those in other advanced economies or emerging markets.

In the US stock market, the equity risk premium (ERP) has declined to historically compressed levels since the October *Global Financial Stability Report*, suggesting that investors have a very high appetite for US stocks and that stock prices have further deviated from fundamentals (Figure 1.2, panel 4). ERPs in other jurisdictions are relatively less compressed, having also displayed some notable decompression since the April 2 tariff announcements.

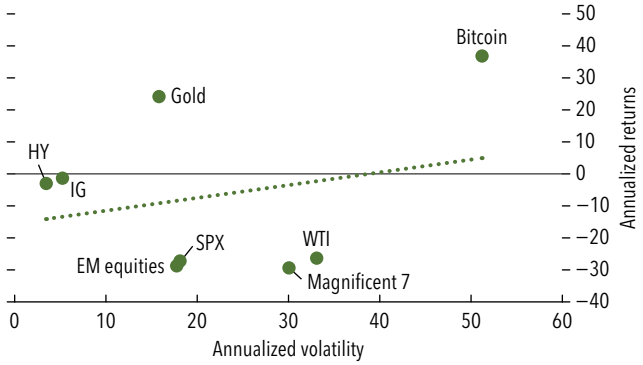
Figure 1.3. Strong Performance of Bitcoin Outperformance and Broad-Based Adoption Prices

Bitcoin has outperformed other major asset classes, on net since October 2024, even when considered on a risk-adjusted basis.

1. Performance of Prices of Selected Crypto Assets
(Index, January 1, 2024 = 100, left scale; billions of dollars, right scale)

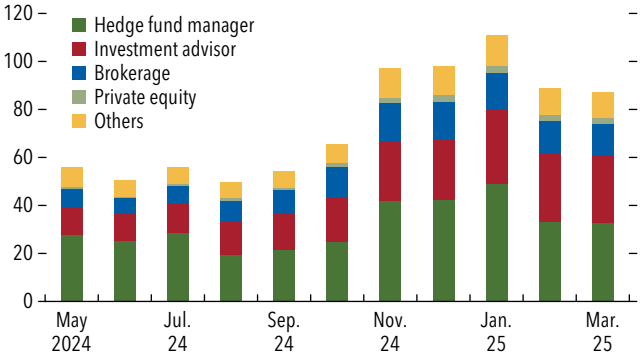


2. Returns versus Risk Since the October 2024 GFSR
(Percent)



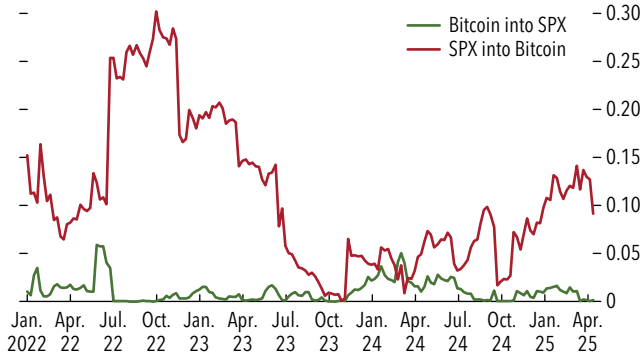
Ownership distribution shows broad-based adoption.

3. Total Assets of Major Bitcoin Exchange-Traded Products by Investor Type
(Billions of dollars)



Bitcoin spillovers into the S&P 500 have been muted.

4. Spillover Index: Decomposition of Forecast Error Variance
(Percent)



Sources: Bloomberg Finance L.P.; and IMF staff calculations.

Notes: In panel 2, a longer-term analysis since January 1, 2020, presents similar results, as Bitcoin outperformance from risk-return basis would still hold. In panel 4, the analysis is based on Diebold and Yilmaz (2012) and Iyer and Popescu (2023) and involves a forecast error variance decomposition using a lag-2 vector autoregression following Akaike information criteria for best fit, with a 52-week rolling window and a 10-week forecast horizon. EM = emerging market; GFSR = *Global Financial Stability Report*; HY = high yield; IG = investment grade; SPX = S&P 500; WTI = West Texas Intermediate Crude Oil.

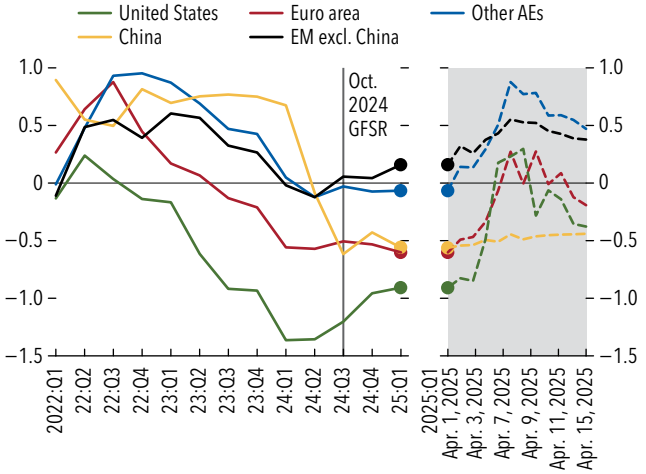
Crypto Assets Show Broadening Adoption

Within crypto assets, Bitcoin has experienced strong performance, on net, since the October 2024 *Global Financial Stability Report* (Figure 1.3, panel 1), and its risk-adjusted returns have significantly outperformed those for other asset classes (Figure 1.3, panel 2). Meanwhile, the market capitalization of stablecoins has surpassed $200 billion. Another wave of inflows into Bitcoin exchange-traded products, whose assets now surpass $80 billion, has accompanied its price gains. Optimism regarding further regulatory developments in the United States provided an additional tailwind to sentiment. Data on holdings of the five main exchange-traded products highlight broad-based adoption among retail and institution investors, suggesting Bitcoin is likely growing more interconnected with the financial system (Figure 1.3, panel 3).

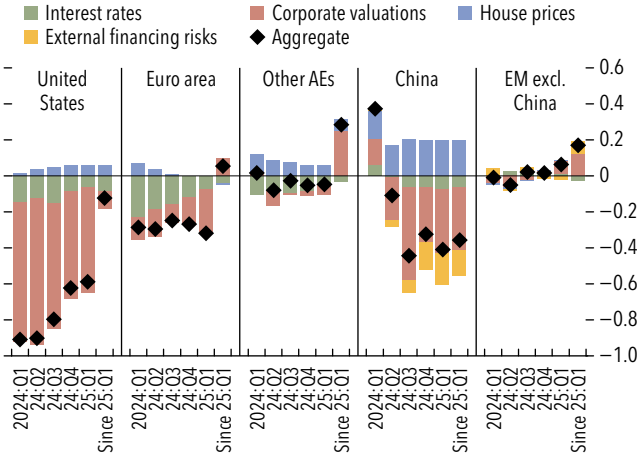
Bitcoin prices have fallen by over 25 percent from their peak at the beginning of the year, suggesting that it is quite sensitive to pressures in other asset prices. Shocks originating in the stock market appear to spill over to Bitcoin to a higher degree than the other way around (Figure 1.3, panel 4). Looking ahead, as the regulatory landscape develops, interconnectedness between Bitcoin and mainstream financial markets may increase, requiring close monitoring of emerging financial stability risks.

Figure 1.4. Financial Conditions Index

Tightening in financial conditions accelerated recently with overall conditions now tighter than historical averages for some regions ...



... driven largely by heightened volatility amid steep decline in corporate valuations.



Sources: Bloomberg Finance L.P.; Haver Analytics; national data sources; and IMF staff calculations.

Notes: The IMF FCI is designed to capture the pricing of risk. It incorporates various pricing indicators including real house prices. Balance sheet or credit growth metrics are not included. For details, see Online Annex 1.1 in the October 2018 *Global Financial Stability Report*. In panel 1, the shaded area on the right side shows the daily FCIs starting April 1, 2025. These daily FCIs are approximate values that are estimated using the available high-frequency market data, while the long-term standard deviations and averages are calculated over 1990:Q1 and 2025:Q1. In panel 2, the key drivers of financial conditions index exhibit the contributions of underlying components which are the weighted average of the *z*-scores of these components. The series "aggregate" represents the sum of these contributions and is similar but not identical for FCI values shown in panel 1. The series "Since 25:Q1" show the simple average of aggregated *z*-scores and their drivers during April 1 to 15, 2025. AE = advanced economy; EM = emerging market; excl. = excluding; GFSR = *Global Financial Stability Report*.

Financial Stability Risks Have Increased Significantly

The tightening seen in global financial conditions since the October 2024 *Global Financial Stability Report* has accelerated notably in recent weeks amid turbulence in financial markets across regions following the April 2 tariffs (Figure 1.4, panel 1). Most advanced economy jurisdictions that were operating on lofty equity valuations and historically tight corporate credit spreads saw sharp sell-offs and spikes in volatility, abruptly tightening financial conditions (Figure 1.4, panel 2). In comparison, the tightening in financial conditions in emerging markets excluding China appears relatively contained, as relatively stable currencies ameliorated the impact of lower equity prices.

With global financial conditions having tightened, the IMF's updated GaR forecasts that downside risks expected over the near-term have risen significantly—one-year-ahead global growth is forecast to fall below 0.4 percent with a 5 percent chance (blue dot in Figure 1.5, panel 1); this Growth-at-Risk metric has deteriorated from around 1.2 percent as of the October 2024 *Global Financial Stability Report* (red dot), and is now around the 30th historical percentile, suggesting risks are considerably elevated compared with historical standards (Figure 1.5, panel 2). In addition to tighter financial conditions, a slowdown of credit growth has also contributed to this deterioration. The balance of risks to global growth over 2025 continues to be skewed to the downside (see also the April 2025 *World Economic Outlook*). This top-down GaR assessment is supported by three key vulnerabilities: further correction of asset prices, potential strains impacting highly leveraged NBFIs (see section "Financial Institutions: Increasingly Leveraged and Interconnected"), and turbulence in sovereign bond markets (see sections "Emerging and Frontier Markets: Challenges and Resilience" and "Sovereign Bond Market Functioning").

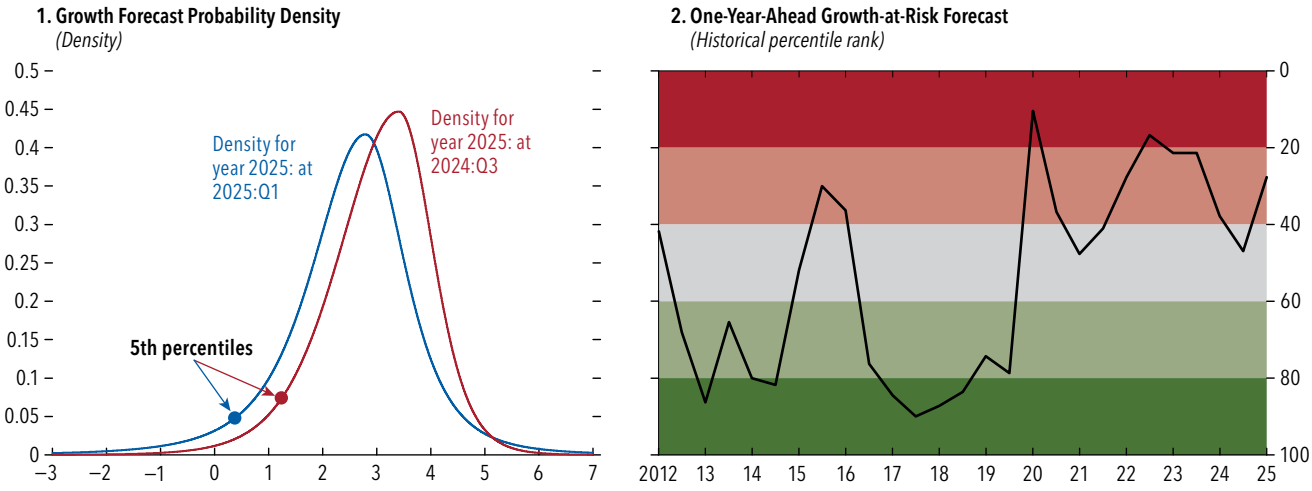
Financial Institutions: Increasingly Leveraged and Interconnected

Trade Shock Creates Headwinds to the Global Banking Sector

While accommodative financial market conditions boosted banks' profits and valuations last year, the sharp decline in bank stock prices observed after the

Figure 1.5. Global Growth-at-Risk

Downside risks to global growth expected over the near-term horizon have risen significantly.



Sources: Bank for International Settlements; Bloomberg Finance L.P.; Haver Analytics; IMF, International Financial Statistics database; and IMF staff calculations.

Notes: In panel 1, the mode (that is, the most likely outcome) of the estimate for current forecast density accords with the IMF *World Economic Outlook* forecast, as of the first quarter of 2025, for global growth in year 2025. In panel 2, the black line traces the evolution of the 5th percentile threshold (the Growth-at-Risk metric) of the near-term forecast densities, where lower percentiles represent higher downside risk. The intensity of the shading depicts the percentile rank for the Growth-at-Risk metric; the quintiles with the lowest and highest percentile ranks are shaded the brightest red and brightest green, respectively. See Adrian, Boyarchenko and Giannone 2019; and Adrian and others 2022.

April 2 tariff announcement highlights the risks faced by the sector (Figure 1.6, panel 1). In 2024, widening net interest margins and, for larger banks, strong results from asset management, advisory, and trading services expanded revenues. At the same time, lackluster but stable global growth did not materially increase the cost of credit, as asset quality improved. As a result, banks' profitability has rebounded sharply, particularly that of European banks, and valuations improved, driven by expectations of regulatory easing (Figure 1.6, panel 2).

The sustainability of this improved outlook is now in balance because several cyclical factors supporting profitability could be reversed by the trade shock. First, the reduction of loan loss provisions has been a substantial driver of return on assets across all regions (Figure 1.6, panel 3). The new macrofinancial scenario could reverse this trend, as banks are exposed to economic sectors impacted by tariffs, and falling growth along with rising uncertainty is negative for borrower default rates and bank credit costs.

Second, recent widening of net interest margins, driven by rising interest rates, has contributed disproportionately to profitability gains, particularly in Europe (Figure 1.6, panel 3). The downward revision in the trajectory of the policy rate observed after the tariff announcement will weigh on bank net interest margins, reducing their revenues. In addition, uncertainty is expected to slow down capital markets and advisory activities, reducing noninterest income.

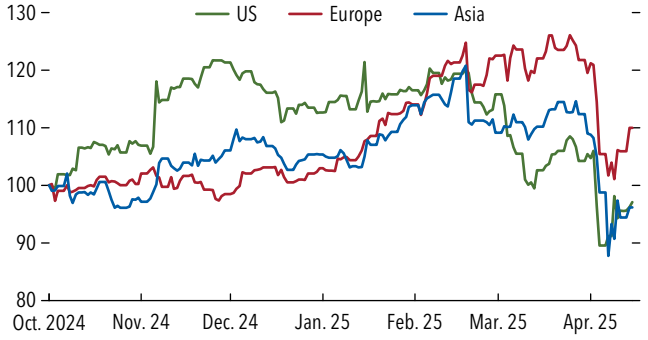
Third, tariffs might disrupt banks' trade finance, a business that supports over $10 trillion in annual transactions and generates $18 billion of bank revenues globally. Trade finance depends on stable cash flows, supply chains, and regulatory frameworks, all of which might be disrupted by abrupt tariff changes. As borrower cash flows become less predictable and larger trade credit facilities are sought, banks tighten lending criteria due to rising credit risks. Tightening credit availability intensifies borrowers' default pressures, leading to a negative spiral of shrinking financing and trade volumes. Tariffs can also reconfigure supply chains and require new compliance processes, raising banks' costs and reducing their underwriting appetite.

Finally, internationally active non-US banks are vulnerable to increased US dollar funding pressures that might arise from elevated volatility and geopolitical events. These risks contribute to keeping a relatively large number of banks on the IMF's monitoring list of weaker banks (Figure 1.6, panel 4; see also Chapter 2 of the October 2023 *Global Financial Stability Report*).

Figure 1.6. Challenges to Global Banks' Outlook

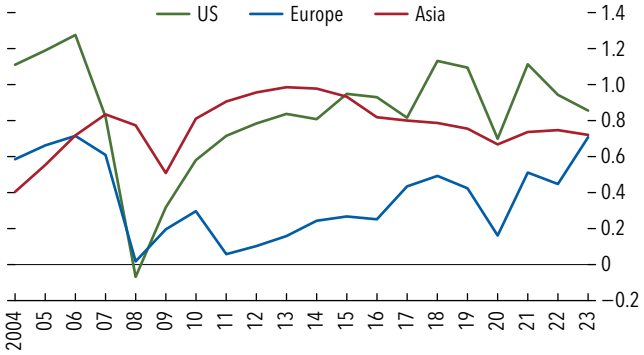
Sharp decline in banks valuation after April 2 tariffs announcement highlights challenges ahead.

1. Banks' price-to-book ratio
(Index, October 1, 2024 = 100)



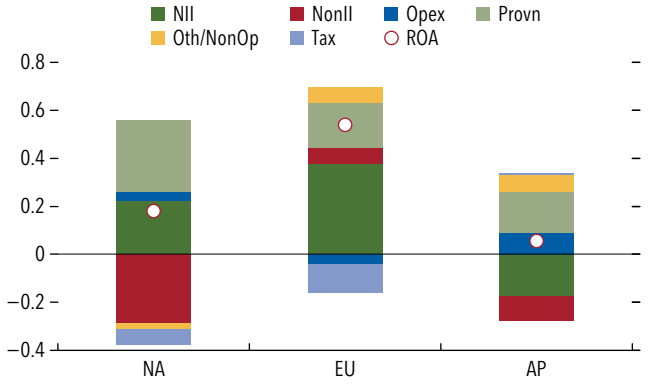
Banks' profitability has improved recently, particularly in Europe.

2. Return on Assets
(Percent)



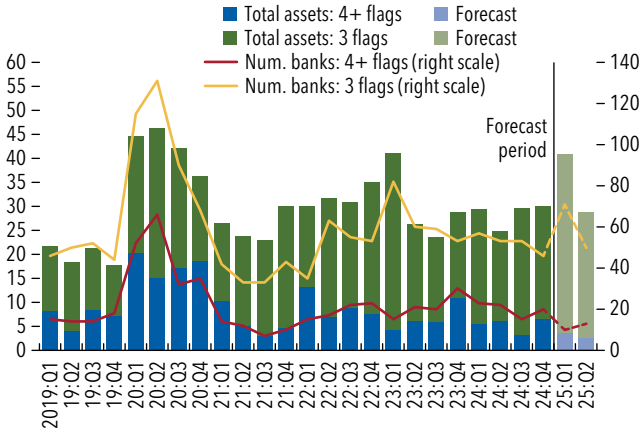
However, improved profitability has been strongly driven by cyclical factors that might be reversed by trade tension.

3. Sources of Change in Return on Assets between 2020 and 2023
(Percentage points)



The headwinds created by the tariff announcement keep the IMF's monitoring list of weak banks relatively large.

4. Banks Signaling Weaknesses in Most Risk Dimensions
(Trillions of dollars, left scale; number of banks, right scale)



Sources: Bloomberg Finance L.P.; IMF, International Financial Statistics database; Organisation for Economic and Development, Bank Profitability; S&P Capital IQ Pro; and Visible Alpha.

Note: Panels 1 and 3 show weighted averages in each period for a sample of 829 banks across all regions. AP = Asia and Pacific; EU = Europe; NA = North America; NII = net interest income; NonII = net noninterest income; Num. = number of; Opex = operating expense; Oth/NonOp = other items, including nonoperating; Provn = provisions for credit losses; ROA = return on assets.

Risk Weights Derived from Internal Models May Overstate Banks' Capital Buffers

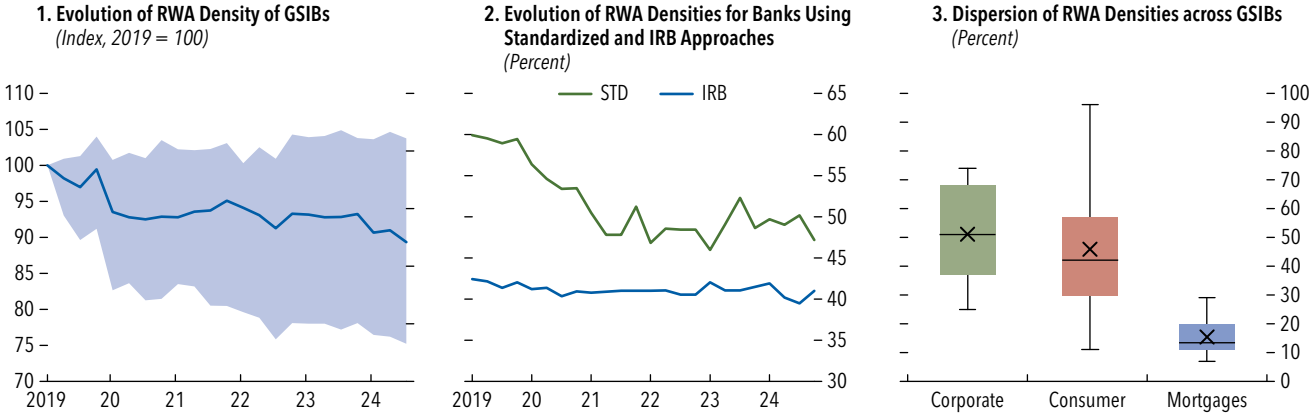
Banks' capital adequacy ratios could be overstated if the methods used to compute their denominator, risk-weight assets (RWA), underestimate the true level of risk and make banks seem safer than they actually are. Banks' average risk weight, also known as RWA density, is supposed to reflect the level of risks associated with banks' exposures and activities. However, data from internationally active banks show wide variation in RWA densities across banks, even among those that feature broadly comparable business models and overall risk profiles. This raises the question of whether such large variations result from the extensive use of internal models for RWA calculation and whether some models underestimate risks. The Basel Committee on Banking Supervision found that capital requirements based on risk parameters estimated by banks for exactly the same set of exposures could differ by more than 20 percent (BCBS 2013, 2016).

Figure 1.7. Risk-Weighted Asset Densities Continue to Decline and Vary Substantially across Banks

The density of risk-weighted assets in global systemically important banks has declined 12 percent over the past five years.

Standardized and internal models produce divergent densities for risk-weighted assets.

Densities of risk-weighted assets for specific portfolios vary substantially.



Sources: Bank for International Settlements, banks' Pillar 3 disclosures; Bloomberg Finance L.P.; and IMF staff analysis.

Note: Panel 1 includes all GSIBs. The shaded area indicates the part of the sample between the 10th and 90th percentiles, and the black line indicates the total weighted average. In panel 2, the sample include 81 banks around the globe for which there are detailed data related to RWA. GSIBs = global systemically important banks; RWA = risk-weighted assets; IRB = internal ratings based; STD = standardized.

In recent years, in addition to the widening variation of RWA densities across banks, that of the average global systemically important bank (GSIB) has fallen by 12 percent (Figure 1.7, panel 1). Changes in banks' portfolios can explain part of this decline. For instance, banks have increased operations like synthetic risk transfers, in which banks buy credit protection and reduce their capital requirements (see the October 2024 *Global Financial Stability Report*). In addition, during the COVID pandemic, supporting measures on the part of governments (that is, public guarantees) reduced the risk of credit exposures. As a result, RWA densities, even for banks using standardized approaches, wherein regulations provide the risk weights, declined (Figure 1.7, panel 2). As these supporting measures were unwound, this downward trend reversed for banks using the standardized approach. By contrast, densities of RWAs have continued to decline in recent times among banks using internal models. Furthermore, average RWA densities estimated using internal models show substantial variation even within asset types (Figure 1.7, panel 3), adding to the literature suggesting that risk cannot entirely explain the variability in the density of risk-weighted assets (Böhnke and others 2023). The Basel Committee developed a comprehensive set of policies to address unwarranted variability of risk weights, including an output floor, but these measures have not been implemented in several jurisdictions.

Growing Linkages between Banks and NBFIs Increase the Risk of Contagion

Over the last decade, NBFIs have grown faster than banks. In particular, investment funds—including mutual funds, hedge funds, and private equity and credit funds—have gradually gained a share of the global financial system assets from banks, insurers, and pension funds (Figure 1.8, panel 1), because investors have been attracted by the realized returns provided by these financial vehicles.

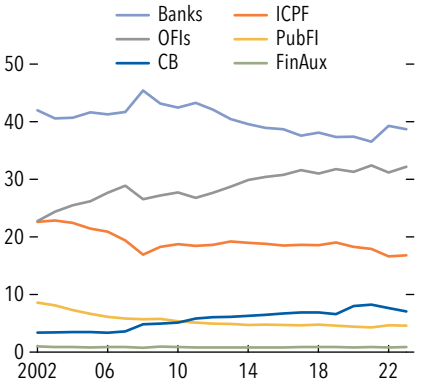
This increased role of NBFIs in financial intermediation proceeds in tandem with growing linkages between banks and nonbanks. In the United States, for instance, banks have shifted balance sheet focus toward the provision of loans, commitments, and other exposures to NBFIs (Acharya, Cetorelli and Tuckman 2024a, 2024b; Cetorelli and Prazad 2024). US banks' loans and commitments to NBFIs increased from about 6 percent of total loans and commitments in 2010 to about 16 percent, equivalent to almost 120 percent of bank regulatory capital, as of the third quarter of 2024 (Figure 1.8, panel 2). Some types of NBFIs are highly reliant on bank funding. Hedge funds, for instance, rely on banks, particularly GSIBs, for more than 50 percent of their total funding and have rapidly increased the total dollar amount of their borrowing from banks (Figure 1.8, panel 3).

More diverse credit sources might benefit financial stability, but excessive growth among NBFIs predicated

Figure 1.8. Financial Stability's Increasing Dependence on Resilience of Nonbank Financial Intermediaries

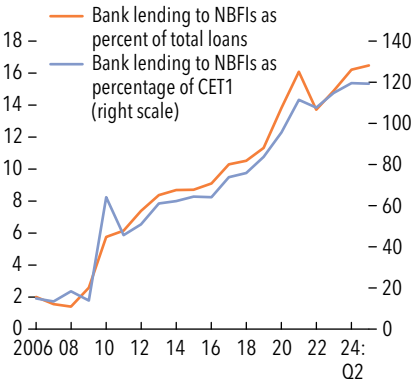
Investment funds are growing faster than banks, insurers, and pension funds.

1. Share of Financial System Assets, by Type of Institution
(Percent)



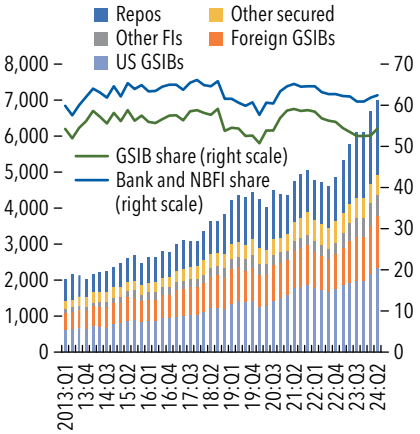
Bank interlinkages with nonbank financial intermediaries are growing strongly ...

2. US Banks' Credit to NBFIs
(Percent of term loans and commitments, left scale; percent of shareholders' equity, right scale)



... and some of these intermediaries, such as hedge funds, have become quite dependent on bank funding.

3. Hedge Fund Borrowings, by Source
(Billions of dollars, left scale; percent of total funding, right scale)



Sources: CEIC; Federal Reserve, Consolidated Financial Statements for Holding Companies (Form Y-9C); Financial Stability Board; S&P Capital IQ Pro; and US Securities and Exchange Commission, Office of Financial Research, aggregation of data from Form PF.

Note: Panel 1 shows the simple average across 29 countries reporting exposures to the Financial Stability Board. Panel 2 refers to credits provided by bank holding companies. Credit includes loans and credit commitments but excludes derivatives. The right axis in panel 3 refers to the proportion of hedge funds' borrowings from GSIBs and from GSIBs plus other financial institutions (OFIs). "OFIs" includes both banks other than GSIBs and nonbank financial intermediaries (NBFIs). "Other secured" includes debt instruments, other than loans, from sources other than financial institutions. Data labels in the figure use International Organization for Standardization (ISO) country codes. CB = central bank; CET1 = common equity tier 1 capital; FIs = financial institutions; FinAux = financial auxiliaries; GSIB = global systemically important bank; ICPF = insurance companies and pension funds; OFIs = other financial institutions, including money market funds, hedge funds, captive financial institutions and money lenders, central counterparties, broker-dealers, finance companies, trust companies, and structured finance vehicles; PubFI = public sector financial institutions; Repos = repurchase agreements.

on borrowing from banks could make the financial system more vulnerable to high levels of leverage and interconnectedness. While contagion due to the tariff turmoil seems limited so far, it highlights some of the potential risks. As equity and oil prices plunged after the April 2 announcement, banks reportedly asked their hedge fund clients to post additional margin. This action can mitigate banks' exposures but may also force the unwinding of positions that in some conditions could become disorderly (see section "Hedge Funds' Elevated Use of Leverage May Exacerbate Losses during Turmoil"). In addition, since there is a positive correlation between collateral prices and counterparty risk, margin calls can fail, exposing banks to credit losses.

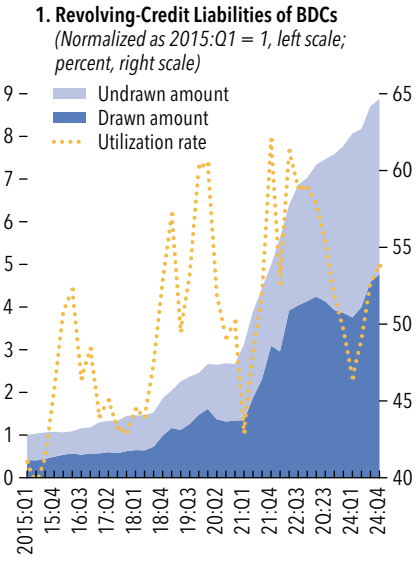
Interconnected Private Credit Funds Can Spread Credit Shocks across Institutions and Countries

Companies are increasingly obtaining financing from private credit funds alongside their reliance on traditional intermediaries like banks. Economic downturns that put pressure on private credit borrower firms' credit quality could lead to losses in the banking sector (see section "Corporate and Household: Vulnerabilities Assessment" for an assessment of credit quality). Private credit funds rely on various types of financing to generate leveraged returns and to manage their liquidity needs, including subscription credit facilities and asset-based lending provided by international bank syndications and collateralized with middle-market loans; large, foreign banks play a crucial role in financing the US private credit ecosystem. The identified portion of bank exposures to private credit vehicles globally exceeds $500 billion (Moody's Investors Service 2024a), and total bank exposure likely exceeds 25 percent of total assets under management in private credit funds.

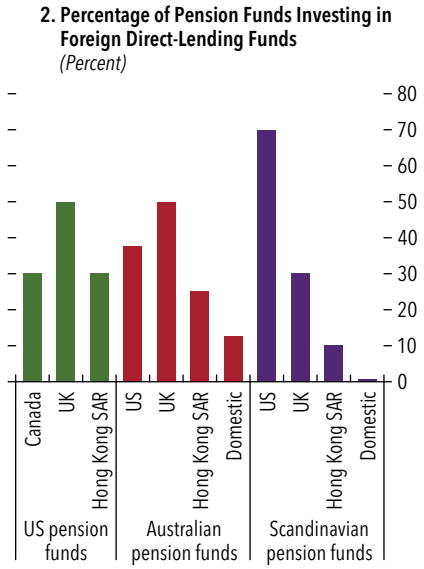
Private credit funds' reliance on bank credit arises, in particular, from the complex asset-liabilities framework required to manage unexpected outflows. Besides term loans, most direct lenders offer revolving facilities to borrowers, which increases the volatility of these

Figure 1.9. Liquidity Management in Select Business Development Companies and Cross-Border Flows in Direct Lending

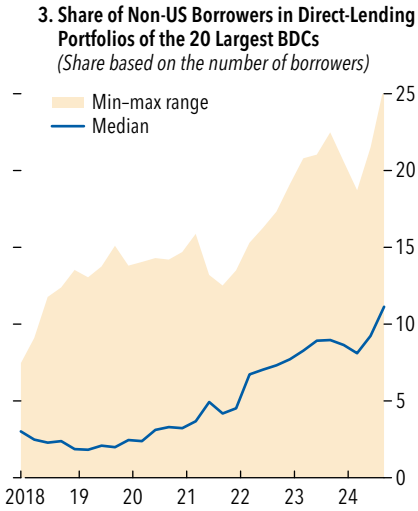
Revolving debt is growing and has volatile utilization rates.



Pension funds are increasing investments in foreign direct-lending funds.



Direct lending funds increasingly extend credit to foreign borrowers.



Sources: Bloomberg Finance L.P.; PitchBook, Leveraged Commentary & Data (LCD); US Securities and Exchange Commission, 10Q/10K disclosures of BDCs; and IMF staff calculations.

Note: In panel 1, revolving credit represents all senior secured revolving credit facilities across BDCs and their subsidiary bankruptcy-remote special-purpose vehicles. The numbers are normalized by the amount of outstanding debt as of the first quarter 2015. In panel 2, each bar represents the percentage of pension funds that had at least some allocation to direct-lending funds domiciled in the jurisdiction on the horizontal axis. In panel 3, the share is calculated based on the number of borrowers, not the amount of loans extended. BDC = business development company; Q = quarter.

lenders' cash flows. To manage this volatility, direct lenders often depend on revolving credit lines from banks. Evidence from business development companies shows revolving debt facilities to these entities (Figure 1.9, panel 1) have been increasing along with the rapid growth of the industry (S&P Global Ratings 2024a; Moody's Investors Service 2025).

In addition to private credit funds' connection with banks, the cross-border nexus has also increased. Available data, though limited, suggest that many investors in direct lending, like pension funds, are investing more frequently in foreign direct-lending funds. Diversification benefits and, in many cases, the small size of domestic direct-lending ecosystems seem to be motivating the trend toward internationalization of investments (Figure 1.9, panel 2). At the same time, many direct-lending funds increasingly extend credit to foreign borrowers, following the intensified cross-border expansion of UK and US private equity sponsors and direct lending platforms (Figure 1.9, panel 3). Although the internationalization of direct-lending ecosystems aids in the development of credit provision in many countries, the reliance of domestic ecosystems of smaller countries on investments from larger jurisdictions may lead to an abrupt halt of financing during prolonged risk-off episodes. As the cross-border nexus continues to grow, the risk that credit shocks will propagate from one jurisdiction to others intensifies, further highlighting the need for supervisors from different countries to coordinate.

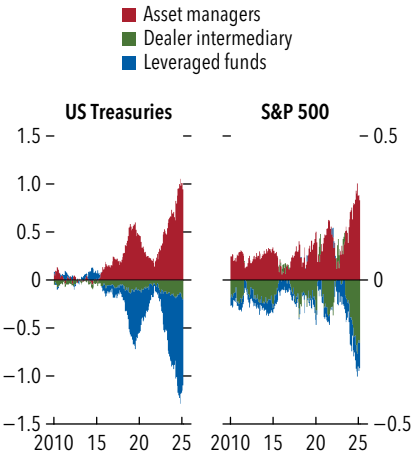
Nonbank Intermediaries: High Leverage Exacerbates Losses and Imperils Market Functioning

The market turmoil that followed the April 2 tariff announcement exposed the vulnerabilities posed by elevated use of leverage by some NBFIs (see sections "Asset Managers' Growing Use of Derivatives Increases Risks in the Financial System" and "Hedge Funds' Elevated Use of Leverage May Exacerbate Losses during Turmoil"). Following the sharp decline in global equities, Treasury yields increased substantially and funding conditions came under pressure

Figure 1.10. Asset Managers' Increasing Long Futures Positions in Recent Years

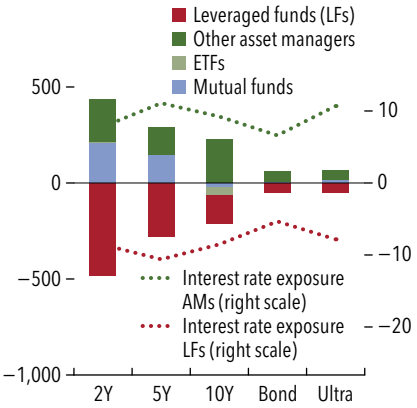
Asset managers' net long Treasury and S&P 500 futures positions have increased, with leveraged funds or dealers taking the opposite side.

1. Net Treasury and Equity Futures Positions
(Trillions of dollars)



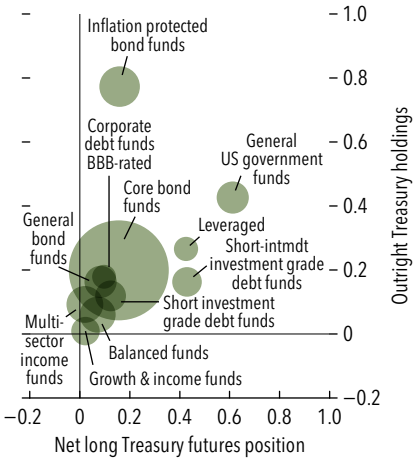
Mutual funds account for about half the net long positions in two- and five-year Treasury futures.

2. Net Treasury Futures Positions of Asset Managers and Leveraged Funds
(Billions of dollars, left scale; billions of dollars per basis point, right scale)



Different types of mutual funds have a different mix of outright and futures exposures to Treasuries.

3. Mutual Funds' Mix of Outright and Futures Positions in Treasuries
(Percent of total assets)



Sources: Bloomberg Finance L.P.; US Securities and Exchange Commission, Form N-PORT filings; and IMF staff calculations.

Notes: In panel 2, "interest rate exposure" reflects the value of a basis point in a particular futures contract in billions of dollars, based on the duration of the contract, which, in turn, depends on the duration of the cheapest-to-deliver issues. "Other asset managers" includes pension funds, insurance corporations, and foreign asset managers. AM = asset manager; ETF = exchange-traded fund; LF = leveraged fund; Y = year.

(see section "Constraints on Dealer Balance Sheets Are Increasing the Fragility of Bond Markets"). These sections document that, among several other drivers, Treasury selling by leveraged NBFIs in response to margin calls may have played a role in amplifying the moves. The nature of the risk is similar to the March 2020 dash-for-cash episode, when generalized forced selling of Treasuries caused a spike in Treasury yields and an unraveling of leveraged positions (Banegas, Monin, and Petrasek 2021).

Asset Managers' Growing Use of Derivatives Increases Risks in the Financial System

Asset managers represent a notable example of NBFIs that have significantly expanded their use of leveraged positions in recent years by employing long futures positions in Treasuries and US equities (Figure 1.10, panel 1). Futures contracts provide synthetic leverage, which can enhance asset managers' returns. However, the use of leverage can also amplify adverse shocks and increase liquidity risk from margin calls on futures contracts. If not managed carefully, the use of leverage can force a rapid unwinding of positions with a substantial market impact. With the large cumulative losses on the S&P 500 since February, some asset managers may have seen significant losses in their long equities positions.

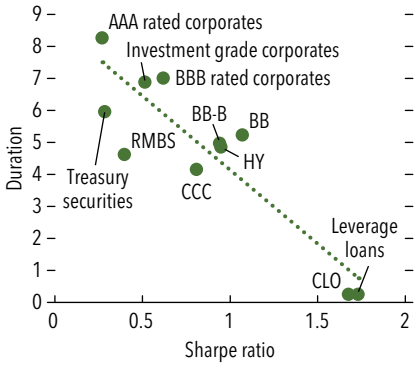
Asset managers have various options for taking leveraged positions, but they seem to prefer futures contracts for operational reasons. The futures market is deep and liquid, and compared with alternatives such as repos, futures have a favorable reporting treatment (Iorio, Li, and Petrasek 2024). Data from the US Securities and Exchange Commission show that US mutual funds account for about half of the net long positions in two- and five-year Treasury futures contracts (Figure 1.10, panel 2).

Some asset managers use futures contracts rather than outright holdings in Treasury bonds to extend the duration of portfolios that tilt more heavily toward corporate credit (Figure 1.10, panel 3). This may enable them to obtain better risk-adjusted returns by rotating their portfolios away from lower-yielding Treasuries toward higher-yielding corporate credit (see Barth and others. 2024 and Figure 1.11, panel 1). Asset managers may also

Figure 1.11. Reasons for Asset Managers' Demand for Long Futures Positions

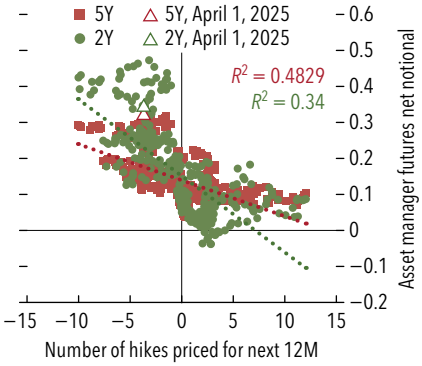
Asset managers can achieve higher returns in credit while maintaining duration exposure through Treasury futures

1. Trade-Off between Duration and Sharpe Ratio
(Duration, vertical axis; dimensionless Sharpe ratio, percent per percent, horizontal axis)



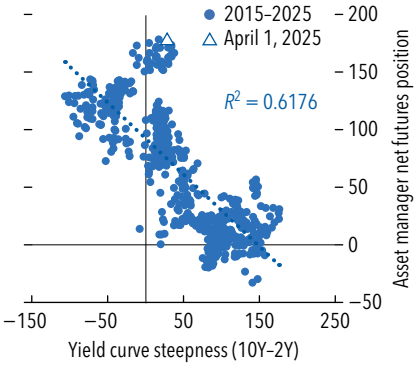
Long futures positions on shorter-maturity Treasuries might reflect policy rate cut expectations ...

2. Asset Managers' Notional Net Treasury Futures Positions and Implied Policy Rate Pricing
(Billions of dollars, vertical axis; number, horizontal axis)



... whereas long futures positions on 10-year Treasuries may serve as a hedge against economic downturns.

3. Asset Managers' Notional Net Treasury Futures Positions and Yield Curve Steepness
(Billions of dollars, vertical axis; basis points, horizontal axis)



Sources: Bloomberg Finance L.P.; LSEG Datastream; S&P Capital IQ Pro; and IMF staff calculations.

Note: In panel 2, the implied number of (25-basis-point) rate hikes over the subsequent 12 months are based on the spread between the one-year-one-month-forward overnight indexed swap (OIS) rate and the federal funds effective rate. CLO = collateralized loan obligation; RMBS = residential mortgage-backed securities; Y = year.

use futures contracts to express directional views. In particular, they seem to take larger net long positions in two- and five-year Treasury futures when more central bank rate cuts are priced in (Figure 1.11, panel 2). Positions in 10-year contracts appear correlated with the steepness of the curve in the 2- to 10-year segment (Figure 1.11, panel 3), which is sometimes taken to be indicative of the economy's business cycle phase.

Asset managers' demand for long Treasury futures positions can raise vulnerabilities elsewhere in the financial system. Their demand for long futures positions creates arbitrage opportunities that attract leveraged investors, including hedge funds, who assume a large part of the correspondent short futures positions (Figure 1.10, panel 1), combined with repo-financed holdings of Treasury bonds in so-called leveraged basis trades (see the April 2024 *Global Financial Stability Report*). A sudden increase in Treasury market volatility could lead to higher margin requirements, while a rise in the repo rate could make the trade unprofitable. Both developments (or either) can potentially trigger a disorderly unwind of the trade. This unwinding reportedly happened to an extent in the period after the April 2 tariff announcement. However, the persistence and magnitude of this dynamic remain uncertain at the cut-off date of this report.

Hedge Funds' Elevated Use of Leverage May Exacerbate Losses during Turmoil

Assets under management of leveraged hedge funds have doubled over the past decade (Figure 1.12, panel 1) as investors were attracted by their realized returns. Although not all hedge funds employ high levels of leverage. The aggregate gross notional exposure of hedge funds keeps increasing across a number of major strategies, with the average ratio of gross notional exposure to assets having more than doubled over the past decade (see the black line in Figure 1.12, panel 2). This financial leverage is particularly large in macro and relative-value fixed-income strategies, in aggregate 40 and 25 times their asset values, respectively. The leverage of multistrategy hedge funds, one of the fastest-growing and largest strategies, has also increased significantly, with gross notional exposures more than 15 times their asset values.[3] Certain funds in all three strategies may have significant exposures in interest rate markets.

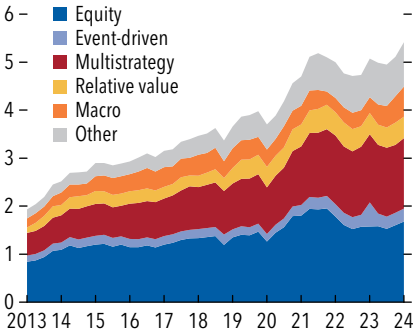
Hedge funds typically gain financial leverage through their use of derivatives and repurchase agreements.

[3]Multistrategy hedge funds employing a multimanager setup—in which individual portfolio managers trade independently from one another—can make individual managers deleverage rapidly and in a highly correlated manner during periods of stress, which can exaggerate market moves and pose additional vulnerabilities. See Bailey (2025).

Figure 1.12. Elevated Hedge Fund Leverage

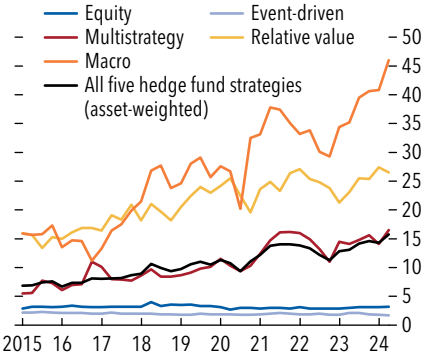
Hedge funds' assets under management have doubled over the past decade ...

1. Assets under Management of Hedge Funds by Strategy
(Trillions of dollars)



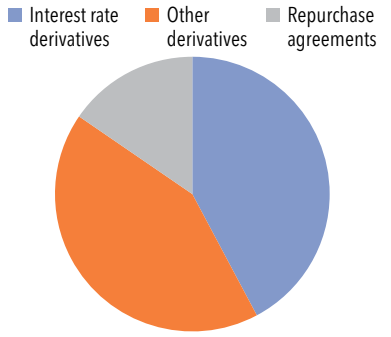
... and their use of leverage continues to increase ...

2. Ratio of Gross Notional Exposure to Net Asset Value



... with interest rate derivatives accounting for almost half of the leverage.

3. Gross Notional Exposure of Derivatives and Repurchase Agreements
(Percent)



Sources: US Securities and Exchange Commission; and IMF staff calculations.

Note: The "Multistrategy" category in panel 1 may include other single-strategy hedge funds included in this category in US Securities and Exchange Commission data. This panel uses a representative sample of hedge funds globally with total assets under management exceeding $5 trillion, as opposed to the $8.5 trillion estimate for total assets under management in the Financial Stability Board's 2024 *Global Monitoring Report on Non-bank Financial Intermediation*. About two-thirds of the hedge funds in the sample are domiciled outside of the United States. The asset-weighted ratio depicted by the black line in panel 2 is calculated using the data for assets under management of hedge fund strategies in panel 1. Panel 3 is based on the aggregate of long and short notional exposures of the derivatives and repurchase agreements of a smaller sample of qualifying hedge funds that report these exposures to the Securities and Exchange Commission. The calculation excludes long and short notional exposures related to investments in publicly and privately traded securities.

In a representative sample of global hedge funds, as of the first quarter of 2024, interest rate derivatives accounted for almost half of the total gross notional exposure of derivatives and repurchase agreements, reflecting the active use of these derivatives by macro and relative-value fixed-income and multistrategy hedge funds (Figure 1.12, panel 3).[4] The significant exposure to interest rate derivatives may partly reflect the active participation of these hedge fund strategies in US Treasury basis trades (see section "Asset Managers' Growing Use of Derivatives Increases Risks in the Financial System"). The same sample of qualifying hedge funds owned $1.6 trillion in Treasury bonds as of the first quarter of 2024, in addition to being short an additional $1.3 trillion in the same instrument.

The spike of Treasury yields in the March 2020 period is a clear example of the interplay among open-ended and hedge fund forced selling in the face of investor redemptions, a spike in repo rates, and rising margin calls. Forced selling by open-ended investment funds to pay for redemptions was a major driver of the spike in Treasury yields during March 2020 (Banegas, Monin, and Petrasek 2021). Hedge funds are better protected than other investment funds when facing investor redemption pressures because of stricter liquidity terms and the more active use of investor gates. However, given the strong reliance of basis trade investors on repos, a spike in repo rates triggered by, for example, disorderly trading conditions and a sharp increase in the volatility of US Treasury markets can render basis trades unprofitable and trigger the forced selling of Treasury securities. Margin calls and portfolio rebalancing can also lead to a brisk unwinding of futures positions as funds seek to deleverage quickly (Vissing-Jorgensen 2021; April 2020 Global Financial Stability Report).

[4]The US Securities and Exchange Commission estimated $8 trillion in interest rate derivative exposures as of the first quarter of 2024. This estimate is based on a sample of qualifying hedge funds that report these exposures to the commission and therefore underestimates the total exposure of hedge funds to interest rate derivatives globally. According to a survey from the International Organization of Securities Commissions, hedge funds held more than $25 trillion in interest rate derivatives as of the end of 2022.

Emerging and Frontier Markets: Challenges and Resilience

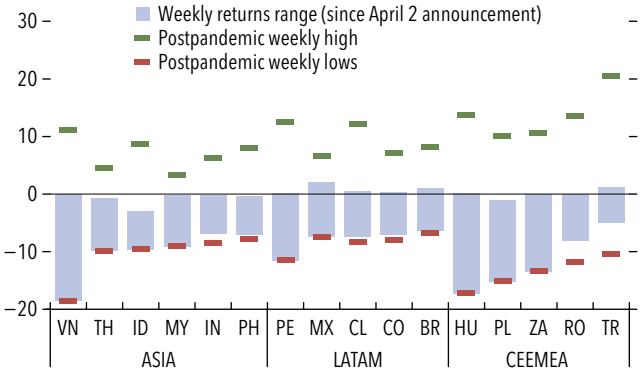
Weathering Strong Headwinds from Trade Tensions with Further Turbulence Ahead

The escalation of global trade tensions has had a significant impact on emerging market assets. Tariffs—through reducing trade volumes or by increasing

Figure 1.13. Emerging Markets: External Headwinds

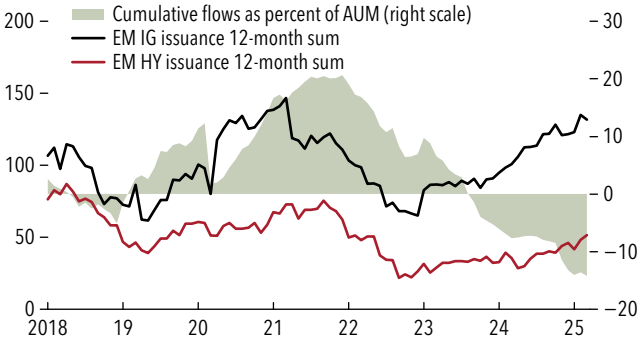
Emerging market equities retreated in early April with large volatility posted by all major local indices.

1. Weekly Returns of Local Equity Indices
(Percent, range)



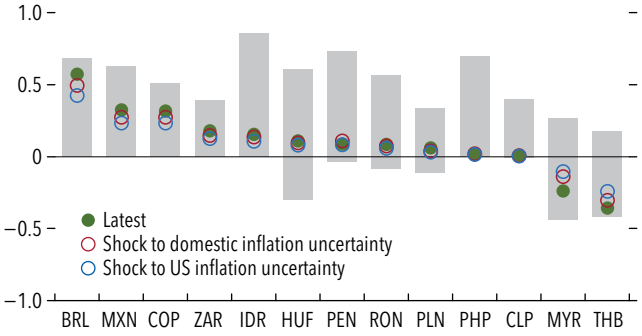
Foreign investor demand for emerging market assets has been tepid over the past year.

2. Hard Currency Fund Flows and Bond Issuance
(Billions of dollars, left scale; percent of assets under management, right scale)



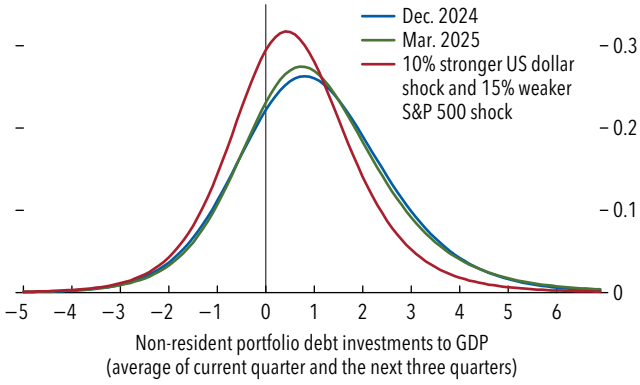
Risk-adjusted returns on emerging market carry trades are vulnerable to higher inflation uncertainty.

3. Historical Range of Risk-Adjusted Carry with Scenario
(Ratio of carry to volatility)



The chance of capital outflows from emerging markets has increased since the October 2024 GFSR.

4. Capital Flows at Risk
(Density, vertical axis; ratio, horizontal axis)



Sources: BIS, Bond Radar; Bloomberg Finance L.P.; FactSet, Fitch Ratings; Moody's Investors Service; S&P; and IMF staff calculations.

Note: In panel 1, returns are in local currency, with datasets from January 2022 to April 2025. In panel 3, the chart calculates the volatility adjusted nominal carry, using implied yields and dollar funding rates. It then applies a shock to implied currency volatility from an increase in macro uncertainty, which is proxied by the median response of one-year-implied foreign exchange volatility to a shock in the forecast dispersion of one-year-ahead inflation using a dynamic impulse response function. The capital flows-at-risk analysis in panel 4 is based on an unbalanced panel quantile regression in which the average of the ratio of one-year-ahead nonresident portfolio debt investments to GDP is regressed on global push and domestic pull factors. The probability of outflows is computed by calculating the area under the distribution curve in which nonresident portfolio debt investment to GDP is negative. US dollar (DXY Index) and S&P 500 shocks are calculated from end of 2025:Q1 levels. Data labels in the figure use International Organization for Standardization (ISO) country codes. AUM = assets under management; BRL = Brazilian real; CEEMEA = Central and Eastern Europe, Middle East, and Africa; CLP = Chilean peso; COP = Colombian peso; EM = emerging market; GFSR = *Global Financial Stability Report*; HUF = Hungarian forint; HY = high yield; IDR = Indonesian rupiah; IG = investment grade; LATAM = Latin America; MXN = Mexican peso; MYR = Malaysian ringgit; PEN = Peruvian sol; PHP = Philippine peso; PLN = polish zloty; RON = Romanian new leu; THB = Thai baht; ZAR = South African rand.

uncertainty for consumers and businesses—weigh on the emerging market growth outlook and stock prices, especially for those countries directly impacted by the April 2 tariffs announcements (Figure 1.13, panel 1), as well as commodity exporters. Even before trade tensions, emerging market bond funds have seen persistent outflows in the last few years (Figure 1.13, panel 2). Issuance of hard currency denominated debt by both sovereign and corporate firms, which has been purchased from institutional or crossover investors, may be threatened should financial conditions continue to tighten.

Although other advanced economy currencies strengthened against the dollar during the recent tariff turmoil, emerging market currencies depreciated against the dollar as fears of weak growth escalated, and market-implied foreign exchange rate volatility saw a significant and durable increase. Combined with a decline in emerging market interest rates during this episode—investors increasingly expect many emerging market central banks to continue their current easing cycle, or else to embark on a new one, to support growth amid high uncertainty—the expected risk-adjusted returns on carry trades involving emerging market currencies have fallen (Figure 1.13, panel 3). The IMF's analysis of capital flows at risk captures the impact of this lower expected return and tighter global financial conditions on portfolio capital flows—emerging market capital outflows could reach 1.6 percent of GDP over the next year with a 5 percent chance. In a scenario in which the broad dollar index rises and US equities sell off further, the tail outcome could worsen to 1.9 percent (Figure 1.13, panel 4).

External headwinds bite especially hard in emerging markets that have excessive credit growth or large financing needs. On aggregate, emerging markets' sovereign credit ratings have shown positive momentum over the last year after a long period of downgrades following the pandemic (Figure 1.14, panel 1). Private nonfinancial sector leverage and various estimates of credit gaps[5]—a gauge of whether credit growth is above or below trend—do not clearly signal overheating in most large emerging market economies (Figure 1.14, panel 2 and panel 3). Although emerging market sovereign credit risks are contained, in a world with tighter financial conditions and more fiscal spending to buttress emerging markets from the impact of tariffs and trade uncertainty, future gross financing needs are forecast to remain above prepandemic averages in most emerging markets, and more government revenue has to be spent on interest payments (Figure 1.14, panel 4). Expectations of weaker growth among emerging market economies have also led to expectations that monetary policy rates will decline toward their terminal rates (Figure 1.14, panel 5), although real interest rates are still currently around their highest levels over the past decade (Figure 1.14, panel 6).

[5]Estimates of credit gaps can differ significantly based on methodology. The above assessment averages three methodologies, Hodrick-Prescott, Christiano-Fitzgerald, and the moving average approach. The results can be seen in Figure 1.2, panel 3.

In a Longer-Term View, Demand for Emerging Market Assets Could Remain Subdued

Emerging markets have endured a long period of tepid portfolio flows. A prolonged period of weak emerging market currencies in which the dollar has strengthened in both good and bad states of the world, along with increased volatility in foreign exchange markets, has made the asset class less appealing. Additionally, following a period of strong interest from foreign investors in the years after the global financial crisis, nonresident interest in local currency bond markets (LCBMs) in emerging markets has stagnated. Since 2018, nonresident participation in LCBMs has declined (Figure 1.15, panel 1), which can be attributed to foreign investors having not kept up with the growing size of these markets (Figure 1.15, panel 2). Although the growing support from domestic institutional investors has bolstered recent fiscal expansion and somewhat mitigated recent spillovers from the external environment for some major emerging markets, the declining nonresident interest could pose challenges for weaker emerging markets that lack the necessary domestic buffers.

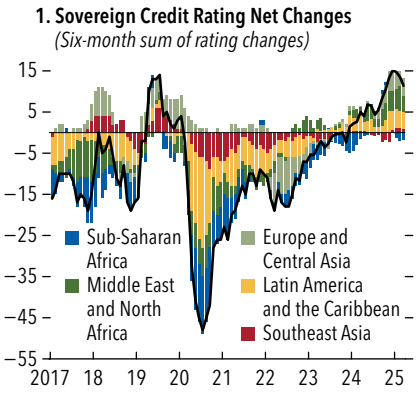
This weakness of foreign flows into emerging market LCBMs may in part be the result of underwhelming performance of the asset class over the past decade. With lackluster 10-year cumulative returns but high realized volatility compared with that of other fixed-income assets such as US corporate bonds (Figure 1.15, panel 3), the Sharpe ratio for LCBMs has been among the lowest compared with those of liquid assets. Weak LCBM performance has primarily been driven by weak emerging market currencies, which have appreciated against the dollar in only 2 out of the past 10 years (Figure 1.15, panel 4). Realized emerging market currency performance continues to underwhelm ex ante expectations, based on surveys of analysts.

Frontier and Low-Income Economies Face Higher Yields and Market Access Concerns

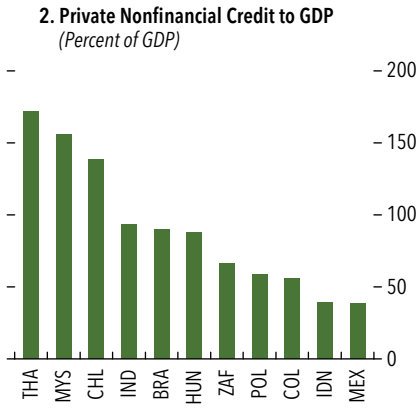
Before the recent turmoil driven by the April 2 tariff announcement, market conditions for frontier economies had been improving since the October *Global Financial Stability Report*. However, even before that, the level of yields remained high for many countries, increasing their refinancing risks as a significant amount of their debt matures over the next several quarters. The sharp rise in spreads and

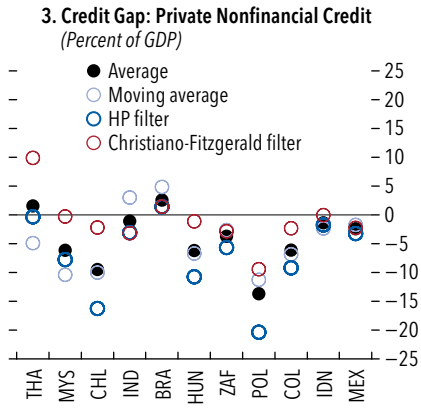
Figure 1.14. Emerging Markets: Sovereign Financing and Private Sector Risks

Positive ratings momentum has accelerated.

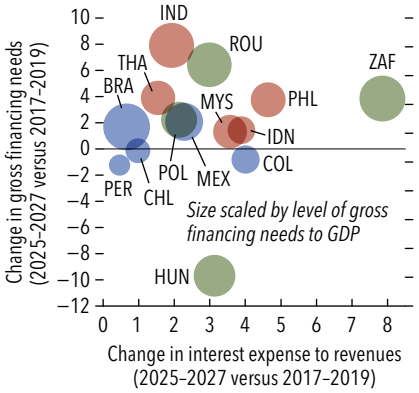


Credit gaps and leverage appear contained in most countries, with a few exceptions . . .

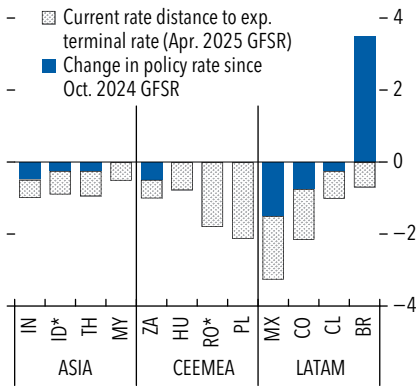




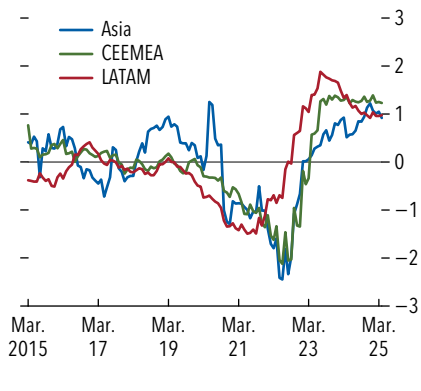
. . . but interest expenses have increased substantially in recent years.



Markets increasingly expect major emerging markets to ease rates in response to weaker growth….



…as real policy rates remain relatively high compared with the past decade.



Sources: Bloomberg Finance L.P; Bond Radar; Fitch Ratings; FactSet, Moody's Investors Service; S&P Global Ratings; and IMF staff calculations.

Note: Panel 1 counts the changes in average rating for an unbalanced sample of 97 emerging market sovereigns on a monthly basis, summed over six months, using the average of Moody's, S&P, and Fitch where available. Panel 3 calculates the credit gap for private nonfinancial credit to GDP by averaging three methodologies, including: Hodrick-Prescott, Christiano-Fitzgerald and five-year moving average; latest data are from the third quarter of 2024. The methodologies use different methods for decomposing trend and cycle to measure the difference between the ratio of private nonfinancial credit to GDP and its longer-term trend. Panel 5 derived the terminal policy rates based on market expectations excluding Indonesia and Romania, which are derived from analysts' consensus expectations. Panel 6 computes the normalized ex-ante real policy rates from the difference between policy rate and analysts' consensus inflation forecasts for 6 months ahead. Data labels in the figure use International Organization for Standardization (ISO) country codes. CEEMEA includes Hungary, Poland, Romania, and South Africa. EM = emerging market; LATAM = Latin America.

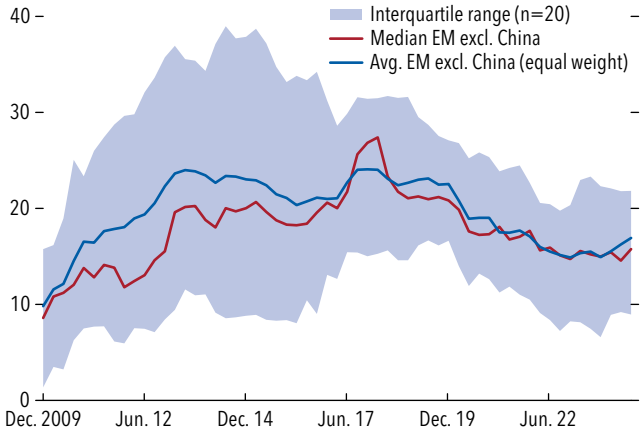
the overall tightening of financial conditions due to the global market turmoil have made this even more of a challenge. Issuing debt at such high yield levels could exacerbate existing debt vulnerabilities at a time when uncertainty about the future of official development assistance weighs on government funding and growth prospects. Any cutback of official development assistance could increase the need for frontier economies and low-income countries to rely more on private markets for debt financing.

Sovereign eurobond spreads for frontier economies narrowed in 2024 and at the start of 2025, with macrofinancial reforms, progress on debt restructuring, and credit rating upgrades in several countries all having contributed to this narrowing. Examples include progress on debt restructuring in Ethiopia and Ghana, and foreign exchange market reforms in Nigeria. Frontier economies were able to issue foreign currency debt at relatively modest yields, with total issuance during the first quarter of this year amounting to roughly half of

Figure 1.15. Longer-Term View on Foreign Participation in Emerging Market Bond Markets

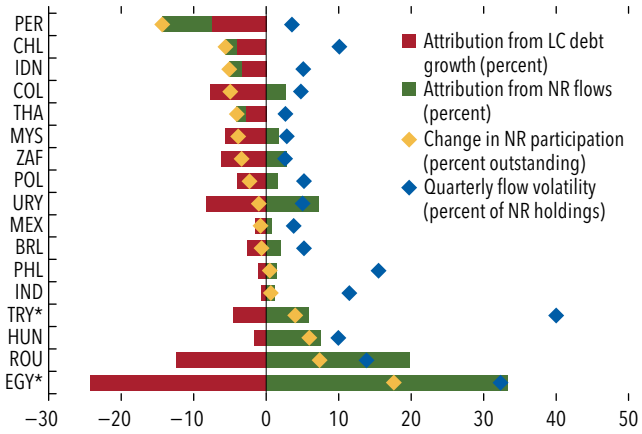
The stock of nonresident holdings of local currency emerging market debt has stagnated.

1. Nonresident Participation in LCBMs of Major Emerging Markets Excluding China
(Percent of outstanding)



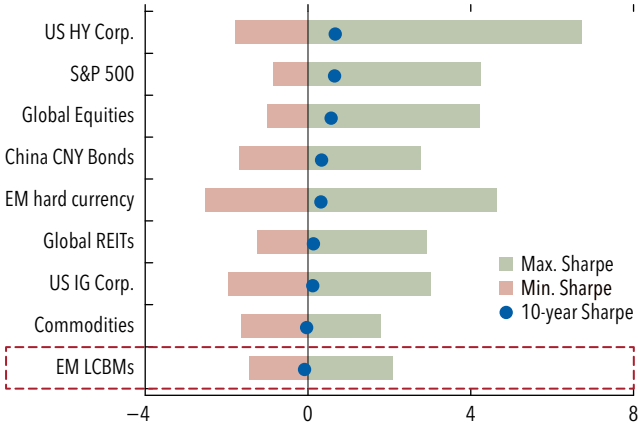
Foreign participation has not kept pace with the growth in local currency bond markets.

2. Attribution of Changes in Nonresident Participation from 2021:Q4 to 2024:Q2
(Percent of Outstanding, Percent of NR Holdings)



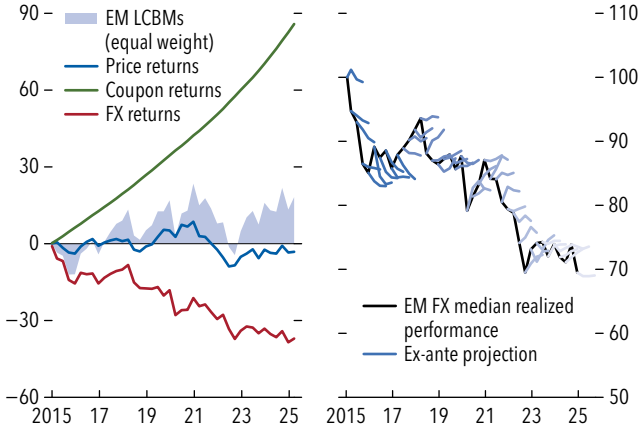
Emerging market local currency government bonds performance has been lackluster in the past decade.

3. Sharpe Ratio for Asset Classes in the Past 10 Years



Foreign exchange in emerging markets has dragged down LCBM returns in these economies and has broadly underperformed expectations.

4. Cumulative Returns, Foreign Exchange Returns, Three-Month Foreign Exchange Performance, and Ex Ante Expectations



Sources: Bloomberg Finance L.P., IMF, J.P. Morgan index suite; and IMF staff calculations.

Notes: Data only include outstanding central government securities and NR participation in these markets. In panel 2, attribution from LC debt growth also include the residual component of the changes to NR participation rate. Data points for Egypt and Türkiye are expressed in multiples of three for better clarity in the presentation of the figure. Data labels in the figure use International Organization for Standardization (ISO) country codes. EM = emerging market; excl. = excluding; LC = local currency; LCBM = local currency bond market; NR = nonresident. In panels 1, 3 and 4, data for emerging market sovereigns includes data only for 15 major sovereigns and excludes data for China and Russia. Government debt securities include only central government debt. The range of Sharpe ratios in panel 3 is based on yearly data for 2014 to 2024. CNY = Chinese yuan; corp. = corporate; EM = emerging market; FX = foreign exchange; HY = high yield; IG = investment grade; LC = local currency; LCBM = local currency bond market; max. = maximum; min. = minimum; REIT = real estate investment trust; UST = Treasuries; VIX = Chicago Board Options Exchange Volatility Index.

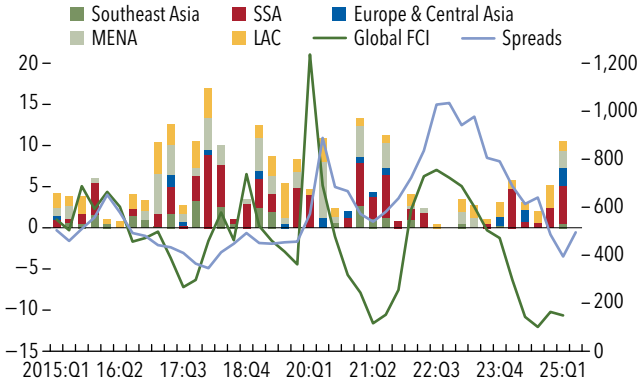
total issuance in 2024 (Figure 1.16, panel 1). Nigeria returned to the eurobond market in late 2024 for the first time since 2022 and Egypt returned in January 2025 for the first time since early 2023. Additionally, Angola obtained foreign currency financing via a total return swap with an international bank while the largest eurobond issuance in Africa during the first quarter came from Côte d'Ivoire.

However, in the aftermath of the April 2 tariff announcements, frontier yields increased as global financial conditions tightened and US yields increased, pushing the share of frontier sovereigns with yields above

Figure 1.16. Frontier Economies

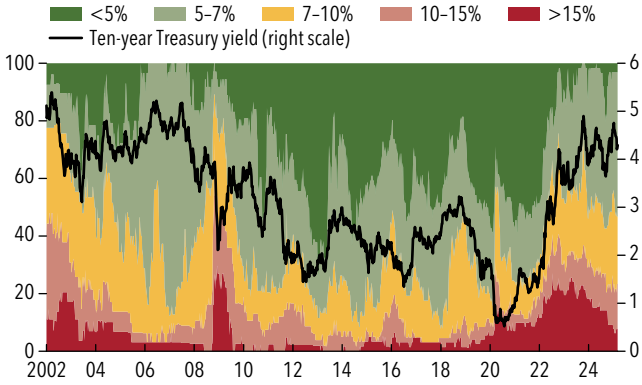
Frontier issuance was robust in the first quarter as spreads compressed and financial conditions eased.

1. Frontier Market International Debt Issuance and Spreads
(Billions of dollars, left scale; basis points, right scale)



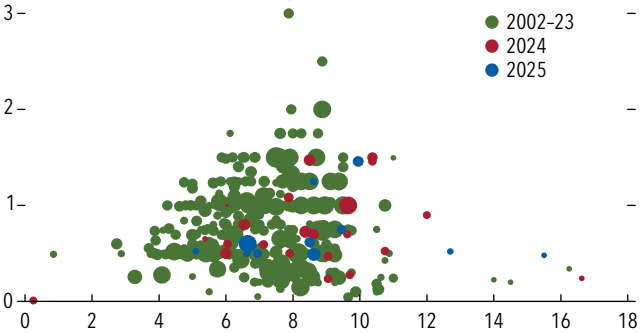
More recently, however, the share of frontier sovereigns with higher levels of yields have increased, in line with higher US Treasury rates.

2. Distribution of Frontier Economies' Yields and Ten-Year Treasury Yields
(Percent of countries, left scale; percent, right scale)



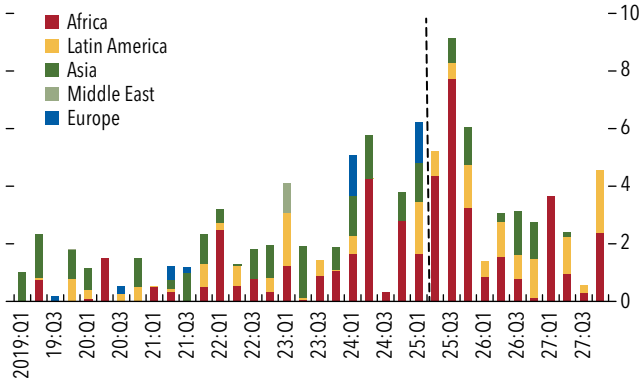
Most international debt is issued when yields are below 10 percent.

3. Number of Frontier Market Issuances versus Yields
(Billions of dollars, vertical axis; percent, horizontal axis)



A significant amount of debt is maturing in the coming quarters.

4. Upcoming International Maturing Debt of Frontier Economies
(Billions of dollars)



Sources: Bloomberg Finance L.P.; Bond Radar; and IMF staff estimates.

Notes: In panel 3, larger bubbles represent the relative maturity. A smaller bubble shows a shorter maturity. Frontier economies are defined as countries with hard currency debt and included in the J.P. Morgan Next Generation Emerging Market (NEXGEM) index. LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SSA = Sub-Saharan Africa.

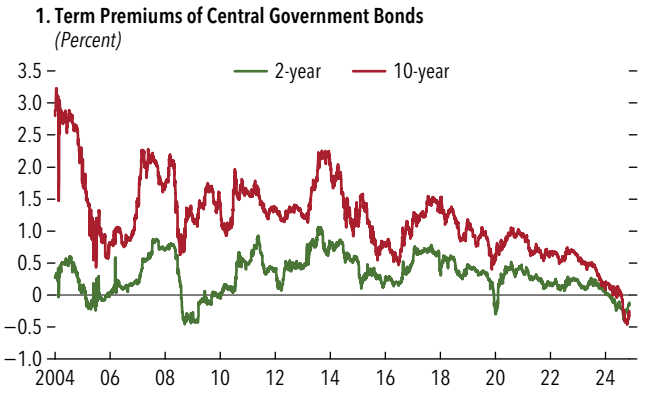
10 percent to almost 30 percent in April (Figure 1.16, panel 2). Should advanced economy yields increase further, or spreads of frontier economies' bonds could come under pressure, and they could be at risk of losing market access. Historically, only a small number of frontier bonds have been issued at yields exceeding 10 percent, in part due to the increased fiscal pressures such high coupons entail and in part due to the negative investor perception generated by a sovereign's willingness to pay such high coupons. These issuances have also generally been smaller and of shorter maturity (Figure 1.16, panel 3; note not only the number of bubbles to the right of the 10 percent label on the horizontal axis, but also the small size on the vertical scale). Although some of these economies have already issued eurobonds to cover upcoming debt (for example, Côte d'Ivoire, Gabon, and Kenya), there remain sizable amounts of debt coming due over the next three years (Figure 1.16, panel 4).

China: Rising Risks to Falling Prices

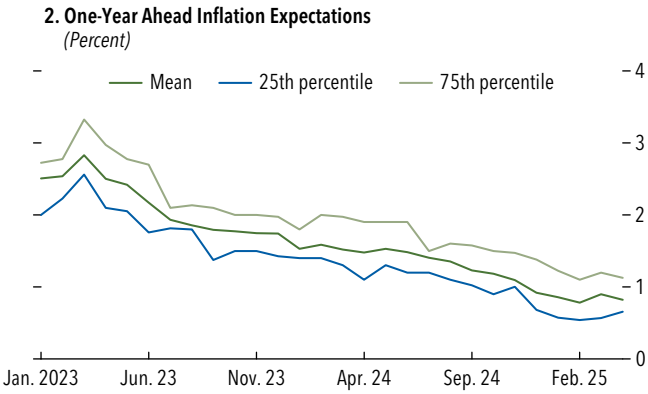
China's economic outlook remains highly uncertain amid mounting external and domestic challenges. Tightening external financial conditions and rounds of retaliatory tariffs and countermeasures with the United States are weighing on sentiment and growth while

Figure 1.17. China's Bond Market

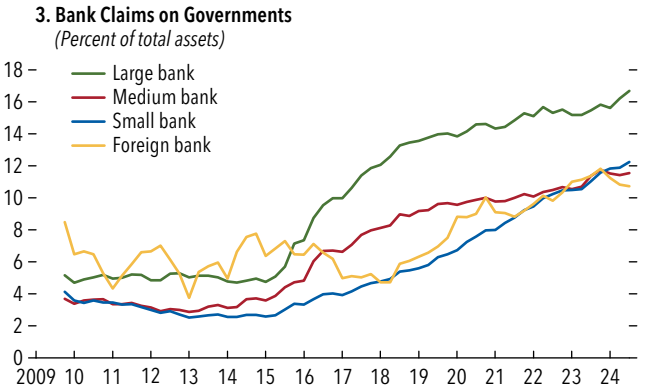
Term premiums have turned negative ...



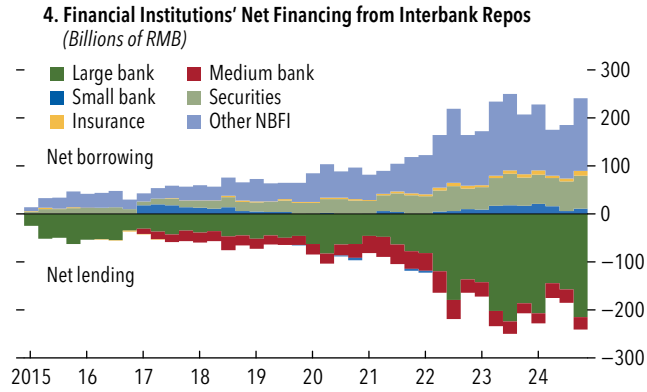
... on a downbeat growth and inflation outlook.



Weak credit demand and profit outlook have given banks incentives to favor government bonds, with large and small banks leading the way.



Nonbanks are borrowing from banks to finance bond purchases.



Sources: Bloomberg; CEIC; and IMF staff estimates.

Note: In panel 1, term premium estimates largely follow Adrian, Crump, and Moench (2013). In panel 2, one-year ahead inflation expectations are calculated from forecasts submitted to Bloomberg. NBFI = nonbank financial intermediary; RMB = renminbi.

also constraining domestic monetary easing. Notably, the tariffs could amplify existing deflationary pressures and weigh on the renminbi, further complicating the macro policy trade-off. At the same time, the protracted adjustment in the property sector and the local government debt overhang continue to dampen demand and elevate the risks of debt deflation. The government's coordinated policy measures to support the housing market and address local government "hidden debt" may have prevented some imminent defaults, but a comprehensive strategy is still needed to address financially unviable developers and local government financing vehicles. This strategy could include phasing out forbearance measures to ensure timely loan loss recognition by banks. In the banking sector, the recent capital injection into large state-owned banks provides some buffer to absorb shocks and sustain credit supply. Nonetheless, more attention is needed to mitigate risks in smaller banks, which could come under disproportionate pressure if tariffs trigger a material growth slowdown.

Reflecting investors' concerns over a weakening growth outlook and deflation pressures, China's government bond yields have continued to decline since the October 2024 *Global Financial Stability Report*. Although core inflation appears to be stabilizing at a low level, inflation expectations have weakened further, with analysts' forecasts of one-year-ahead headline inflation dropping below 1 percent (Figure 1.17 panel 2), which has reinforced expectations of further monetary policy easing. Consequently, the term premium on 10-year government bonds has dropped to a record low (Figure 1.17, panel 1). As historically high tariffs imposed by the United States may intensify

deflationary pressures, accommodative macroeconomic policies along with structural and promarket reforms are urgently needed to bolster near-term activity and business and consumer confidence, as well as to prevent a further downward spiral in inflation expectations.

The decline in term premiums is also linked to shifts in the investment behavior of institutions, as banks and investment funds have increased their security holdings amid weak demand for credit and challenges to profitability. Over the past two years, Chinese banks—especially smaller ones—have significantly expanded their exposures to government bonds (Figure 1.17, panel 3); even so, investment funds and wealth management products overtook banks as the largest buyers of government debt in 2024. The concentrated holdings of government debt by financial institutions (see Box 1.2 in the case of Chinese insurers) could crowd out bank lending and credit creation as well as raise questions about the size of potential bond losses should inflation and interest rates change.

Managing interest rate risk is now important for China's financial stability. Although Chinese banks classify most of their government bond portfolios as held to maturity, thereby limiting mark-to-market losses, the hedging of interest rate risks by smaller institutions remains limited. Another vulnerability lies in leveraged investment strategies in which bond purchases are financed through repurchase agreements (repos), which are dominated by very short-term instruments, with overnight and seven-day tenors accounting for nearly 90 percent of transactions. If sentiment shifts unexpectedly, the unwinding of leveraged trades could exacerbate volatility in short-term rates, even in the absence of direct adjustments to policy rates, posing risks to broader financial stability. Nonbank financial institutions—particularly securities firms and investment funds—remain by far the largest borrowers and most active participants in the interbank repo market, and large banks are the predominant lenders (Figure 1.17, panel 4). These dynamics played out in the past few months—interbank liquidity tightened sharply and disproportionally affected nonbank participants as investors reassessed the pace of monetary easing amid heightened trade uncertanties. Although authorities have made progress in reducing risks in the nonbank financial sector in recent years, additional regulatory measures to prevent excessive concentration of bond holdings and to enhance management of liquidity and maturity risk, as well as to close regulatory and data gaps, could help contain systemic risks emanating from the bond market.

Sovereign Bond Market Functioning

The Supply of Government Bonds Will Likely Remain Large

Elevated levels of government bond issuance will increasingly be absorbed by relatively price-sensitive private investors, especially if quantitative tightening by central banks continues. All else equal, this could drive up bond yields via higher risk premia and could heighten bond price volatility. These pressures can be amplified by financial intermediaries that are now more constrained in providing liquidity in bond and securities financing markets.

In the United States, persistent fiscal deficits—with market expectations suggesting stabilization at 6.5–7 percent of GDP—need to be financed by substantial Treasury securities issuance in years to come. Rising interest costs and large nondiscretionary spending needs may constrain or delay fiscal consolidation, reinforcing upward pressure on yields.[6] Although net issuance of Treasuries is temporarily capped,[7] the need to refinance a significant share of maturing debt—40 percent of which is concentrated in the first quarter of 2025—may necessitate a steep increase in supply later in the year, particularly for shorter maturities (Figure 1.18, panel 1).

In the euro area, net issuance of government bonds is also set to ratchet up, mainly driven by the need to finance higher defense and infrastructure spending. At the same time, ongoing normalization of the European Central Bank's (ECB) balance sheet is adding to the amount of bonds private investors need to absorb, particularly bunds (Figure 1.18, panel 2). A relaxation of Germany's "debt brake"[8]—although aligned with IMF recommendations and supported by flexibility in the revised EU fiscal framework

[6]While higher premiums and yields reflect cyclical and policy-related factors, longer-term structural trends such as aging populations (see the April 2025 *World Economic Outlook*, Analytical Chapter 2, "The Rise of the Silver Economy") may exert downward pressure over time.

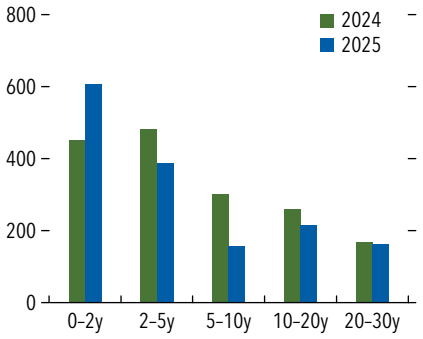
[7]On January 2, 2025, the debt ceiling, the limit on the total amount of federal debt the US government can hold, became binding again, and the current ceiling, set at $36.1 trillion, has been reached. For further reference, see the April 2023 *Global Financial Stability Report*.

[8]Germany's debt brake is a constitutional fiscal rule that limits the federal government's structural deficit to 0.35 percent of nominal GDP. The debt brake permits temporary borrowing during economic downturns, with repayment required in subsequent periods. Introduced in 2009 and legally binding since 2016, it is one of the most restrictive fiscal rules among those imposed on European Union sovereigns, designed to ensure long-term budget sustainability.

Figure 1.18. Sovereign Bond Issuance in the United States and the Euro Area

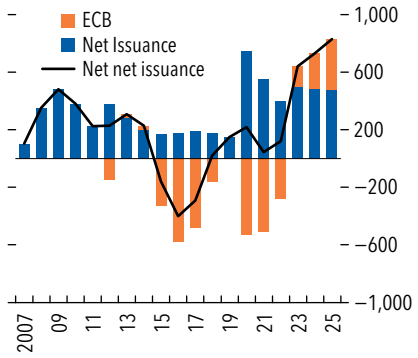
Net issuance in the United States will likely become more front-loaded.

1. Projected Net Issuance Volume of Treasuries, 2025 versus 2024
(Billions of dollars)



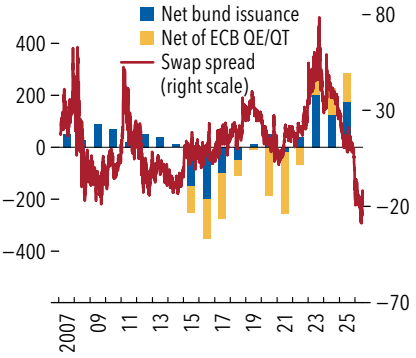
Euro area government bond supply is set to reach post–global financial crisis highs.

2. Aggregate Euro Area Net Issuance Volume
(Billions of euros)



Germany's net bond supply has changed even more.

3. Germany's Net Issuance Volume versus Swap Spreads
(Billions of euros, left scale; basis points, right scale)



Sources: Bloomberg Finance L.P.; and IMF staff analysis.

Notes: Gross issuance reflects both new debt issuance—underpinned by IMF estimates—and refinancing of maturing securities. Net issuance adjusts for central bank transactions, decreasing with asset purchases during quantitative easing and increasing with the runoff of maturing holdings during quantitative tightening. Swap spread capture the interest rate differential of 10-year EUR-denominated interest rate swaps less Bund securities of the same maturity.

for public investment—has prompted some market analysts to express concerns about the potential increase in government debt issuance and the ability of the market to absorb it easily, at a time when the ECB is also reducing purchases of government debt, for which they cite the negative basis spread that has opened between interest-rate swaps and similar maturity bunds (Figure 1.18, panel 3).[9] Prolonged periods of negative bund swap spreads do not necessarily reflect changes in sovereign creditworthiness, as the credit default swap spread of Germany remains stable around a low level: similar conditions were observed in early 1990s amid elevated issuance of German federal debt related to reunification. But, given the bund's role as the key pricing benchmark for European sovereign debt, higher bund yields translate into higher borrowing costs across the euro area. Going forward, potential risks from higher borrowing costs for euro area sovereigns should continue to be monitored.

[9]In addition to capturing a price-based indicator of the relative supply and demand of government bonds, swap spreads are also impacted by structural factors relating to intermediation constraints, increased financing or risk management costs associated with holding bonds, and structural shifts in investor demand.

Constraints on Dealer Balance Sheets Are Increasing the Fragility of Bond Markets

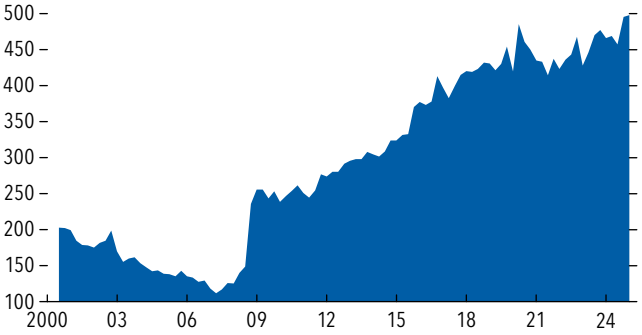
Heightened volatility of bond yields during the market turmoil following the April 2 tariff announcements have reportedly pushed the intermediation capacity of US primary dealers—key intermediaries in the Treasury market—toward its limit. Even before the episode, the Treasury market had outgrown dealers: its size is now five times dealers' balance sheets, a significant increase from just one-and-a-half times around 20 years ago (Figure 1.19, panel 1). As a result, spreads on repurchase agreements—representing amounts dealers demand to finance their clients' purchase of Treasury securities—have become more sensitive to the quantity of Treasury issuance (Figure 1.19, panel 2). Episodes of deterioration in market liquidity could become more likely, pushing up term premiums and Treasury yields (Figure 1.19, panel 3).

The ensuing market turmoil following the announcement of April 2 tariffs saw the unwinding of popular leveraged trades like Treasury cash-futures basis trades and swap spread trades. In the latter case, the turmoil pushed up margin requirements and forced a wave of deleveraging by investors that were positioned for yields to decline relative to swap rates. This resulted in a sharp narrowing in

Figure 1.19. Dealer Balance Sheets and Intermediation Capacity

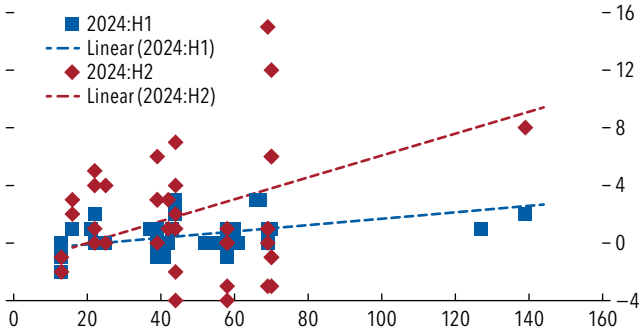
The Treasury market has outgrown broker-dealers balance sheets since the GFC ...

1. Treasury Debt as a Share of Broker-Dealer Balance Sheets
(Percent)



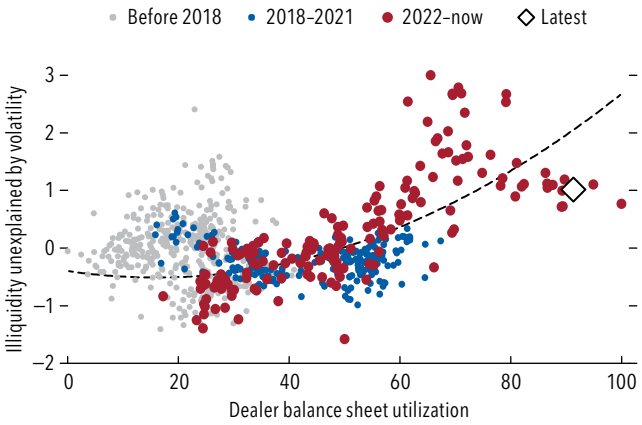
... and sensitivity of repo rates to issuance suggests intermediation capacity may be approaching its limit.

2. Repo Rate–Policy Rate Spread versus Sovereign Issuance Supply
(Basis points, vertical axis; billions of dollars, horizontal axis)



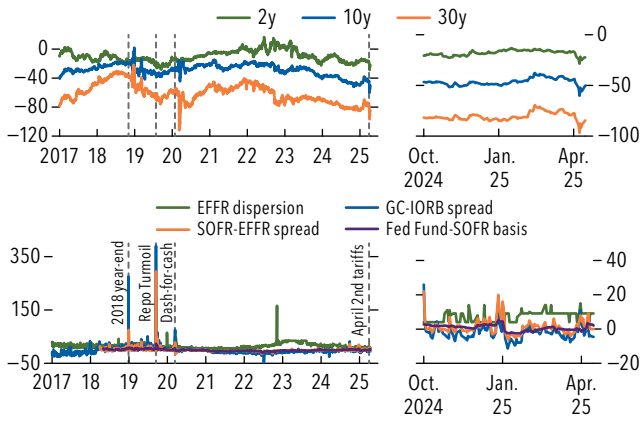
Constrained dealer balance sheets coincide with deterioration in market liquidity.

3. Dealer Intermediation Capacity versus Treasury Market Liquidity
(Percent)



Swap spread declines during the recent sell-off reflected pressure on dealer balance sheets amid broad deleveraging; but funding costs remained broadly stable, keeping well below historical peaks.

4. Money Market Rates versus SOFR–Treasury Swap Spreads
(Basis points, top; basis points, bottom)



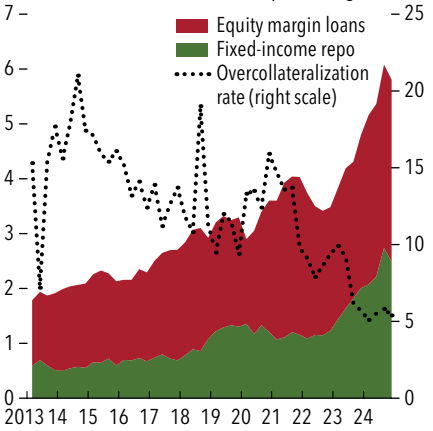
Sources: Bloomberg Finance L.P.; Federal Reserve Bank of New York; Federal Reserve Bank of St. Louis; Federal Reserve Economic Data (FRED); Haver Analytics; J.P. Morgan DataQuery; and IMF staff calculations.

Notes: In panel 3, dealer capacity utilization is proxied by normalized net primary dealer positions in Treasuries and agency MBS, scaled between 0 and 1 relative to in-sample peaks (January 2010 to March 2025). This construction of capacity utilization proxy is related to a revealed-preference approach followed in Duffie and others (2023). Residual illiquidity refers to market-value-weighted spline fitting errors of Treasury yields unexplained by interest rate volatility, as captured by the MOVE index. The dotted line depicts the fitted quadratic relationship between utilization and residual illiquidity from 2020–present. In panel 4, swap spreads reflect the difference between swap rates and Treasury yields of the same maturity. SOFR swap rates are extended historically using adjusted legacy swap interbank offered rates, with a basis adjustment applied to account for differences between secured overnight and term interbank benchmarks. EFFR dispersion reflects the difference between the 1st and 99th percentile of effective Federal Fund rates. GC-IORB reflects the difference between general collateral overnight repos and the overnight interest on reserve balances. The SOFR-EFFR spread reflects the difference between secured overnight funding rates and effective federal fund rates. The Fed Fund-SOFR basis reflects the difference between near-term Fed Fund futures and SOFR futures.

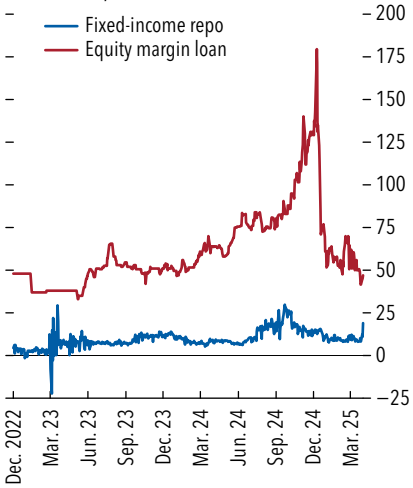
swap spreads (Figure 1.19, panel 4, top) and more challenged market liquidity conditions. The sharp decline in spreads was reportedly exacerbated by dealers reaching capacity limits and having difficulty absorbing the Treasury securities sold during the deleveraging. More broadly, Treasury market functioning was challenged but did not break down, as repo funding costs rose only marginally (Figure 1.19, panel 4, bottom) as compared with levels seen during past episodes of market dysfunction, which were associated with large-scale unwinding of basis trades (for example, the "dash-for-cash"

Figure 1.20. Dealers' Intermediation Shift toward Higher Margin Activities

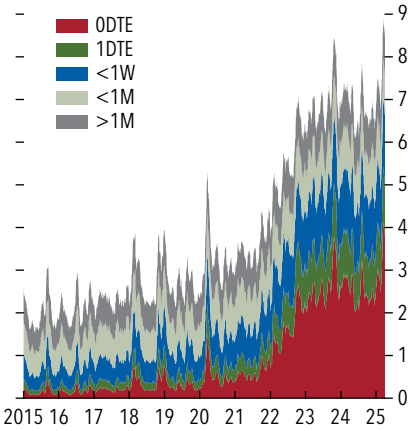
Dealers has favored equity margin loans; but overcollateralization rates have fallen.



Equity financing is still more attractive than secured funding, despite a recent slump.



Expansion of market-making activity in options further reduces dealers' capacity.



Sources: Bloomberg Finance L.P.; Chicago Board of Exchange; LSEG Datastream; Office of Financial Research; US Securities and Exchange Commission; US Treasury; and IMF staff analysis.

Note: SOFR = secured overnight financing rate; DTE = days to expiration; M = month; W = week. In panel 2, fixed-income repo and equity margin loans correspond to a term of three months. In panel 3, option volumes are based on aggregate exchange data for the four most liquid equity index products, with the maturity split imputed from available contract-level data, subject to limitations in historical coverage for very short-dated maturities.

episode in March 2020; see the "Asset Managers' Growing Use of Derivatives Increases Risks in the Financial System" section). Still, elevated trade uncertainty might lead to further turmoil in markets, including in repo markets.

From a longer-term perspective, decline in dealers' intermediation capacity in government bonds may also be a consequence of increased usage of balance sheets to provide equity margin loans to hedge funds and other clients (Figure 1.20, panel 1). Equity financing spreads are more attractive than fixed-income repo spreads, despite some declines of the former after year-end 2024 and some increases of the latter in early April, upholding dealers' incentives to shift toward these higher-margin activities (Figure 1.20, panel 2). According to market contacts, smaller dealers have tilted their lending toward equity margin loans, whereas major institutional dealers with deep client relationships have maintained diversified exposure across asset classes. This shift has contributed to a weakening in collateralization levels (Figure 1.20, panel 1, dashed black line), exposing dealers to losses if hedge funds are unable to repay loans during market stress.[10] Also, expansion of options market-making activity (Figure 1.20, panel 3)—partly driven by retail speculative positioning—has further shifted dealers' focus away from core markets like government bonds.

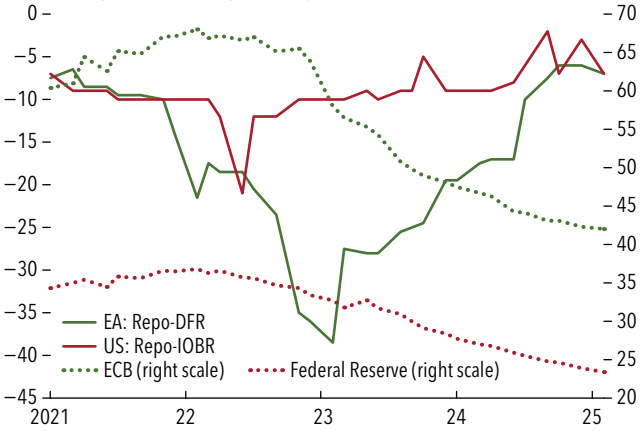
Cross-border funding dynamics may be amplifying vulnerabilities in the international dollar market. Euro area banks, which previously benefited from deeply negative repo rates due to a scarcity of European government bonds, have faced rising funding costs, as the ECB's quantitative tightening is alleviating this scarcity (Figure 1.21, panel 1). In response, they have reportedly increasingly turned to US repo markets,

[10]Overcollateralization is determined by haircuts in fixed-income repos and by initial and variation margins in equity margin loans, both of which aim to cover potential collateral losses. Structural improvements—such as a shift from zero-haircut bilateral repo toward centrally cleared and sponsored repo—have strengthened margining in Treasury markets. But equity margin loans, which now account for a larger share of dealer activity, are mostly extended in the dealer-to-customer space under looser risk standards and competitive pricing, meaning margin requirements may not necessarily be calibrated to absorb worst-case losses, particularly in periods of elevated market volatility.

Figure 1.21. Cross-Border Funding amid Ongoing Quantitative Tightening

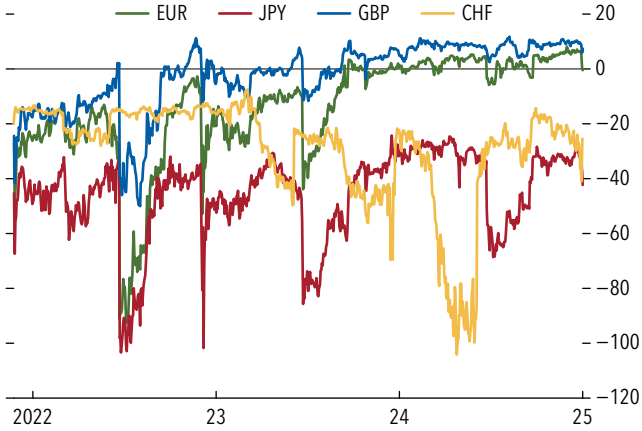
Rising funding costs for euro area banks amid ongoing ECB quantitative tightening, has driven them to tap US repo market ...

1. Repo Rate–Policy Rate Spreads and Federal Reserve and ECB Balance Sheets
(Basis points, left scale; percent, right scale)



... leading to an improvement in availability of the dollar as a funding currency, but increasing rollover risks and deepening cross-border linkages in dollar funding markets.

2. Three-Month Cross-Currency Bases against Dollar
(Basis points)



Sources: Bloomberg Finance L.P.; Haver Analytics; J.P. Morgan DataQuery; and IMF staff analysis.

Note: CHF = Swiss franc; DFR = deposit facility rate; EA = euro area; ECB = European Central Bank; EUR = euro; GBP = British pound; IORB = Interest Rate on Reserve Balances; JPY = Japanese yen.

borrowing dollars against Treasury collateral and swapping proceeds back into euros.[11] While this shift has improved availability of the dollar as a funding currency (Figure 1.21, panel 2), it has also deepened cross-border interconnections in dollar funding markets. Growing reliance among euro area banks on US repo funding exposes them to rollover risk: during volatile markets, like the one after the April 2 tariff announcements, these banks might scramble for dollars in the foreign exchange (FX) swap market to meet their obligations.[12] Given the scale of their dollar borrowing, a sudden loss of access to US repo funding could widen the euro-to-dollar basis, signaling rising dollar scarcity and triggering broader funding strains (see the October 2010 Global Financial Stability Report, Box 2.2). Elevated fragility of cross-border dollar liquidity underscores the importance of globally coordinated backstops—such as standing repo facilities and central bank swap lines—to mitigate systemic risks and prevent disorderly spillovers.

[11]Euro area banks also issue unsecured commercial papers (see ECB 2024) as another source for borrowing dollars.

[12]For instance, if dollar borrowings mature before the corresponding euro loan from the bank subsidiary to its holding company expires, the subsidiary may be forced to abruptly short-cover dollars in the cross-currency swap market, to honor the dollar liability owed to the US repo counterparty.

Corporate and Household: Vulnerabilities Assessment

Corporate Credit Fundamentals Are Solid Overall, but Weak Spots Are Emerging

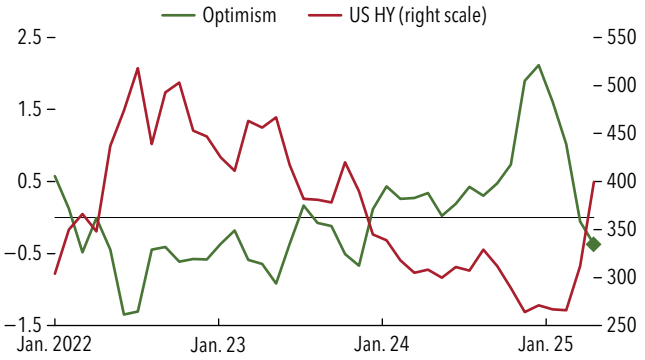
Since the October 2024 *Global Financial Stability Report*, corporate cash flows have remained healthy, and balance sheets remain resilient, in aggregate. Nevertheless, corporate bond spreads have widened recently (see Figure 1.1 panel 3), reflecting investors' concerns over the adverse impact of higher global tariff rates on corporate earnings in coming quarters. For example, US high-yield corporate bond spreads have risen as the optimism of American businesses faded (Figure 1.22, panel 1). Despite their widening spreads, US corporate bond valuations remain stretched relative to macro fundamentals, as investment grade and high-yield spread misalignments are still around the 10th and 25th historical percentiles, respectively (Figure 1.22, panel 2), suggesting that further widening of spreads are likely should economic and trade uncertainty remain high.

Globally, corporate firms' debt serviceability outlook has been bolstered by still-solid corporate earnings projections. Until recently, weaker borrowers had been able to restructure their debts, avoiding

Figure 1.22. Corporate Credit Fundamentals

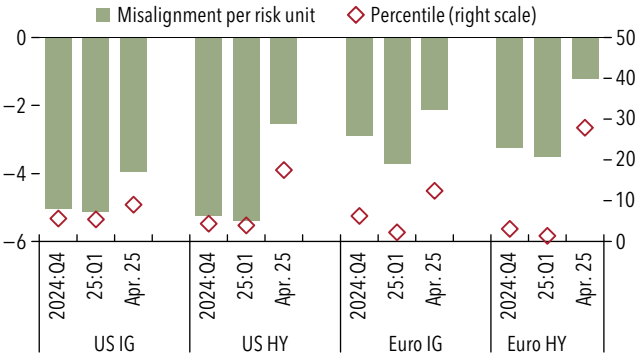
Deteriorating economic sentiment in the United States has contributed to driving corporate bond spreads wider.

1. US High-Yield Spreads versus Business Optimism Index
(Index, z-score, left scale; basis points, right scale)



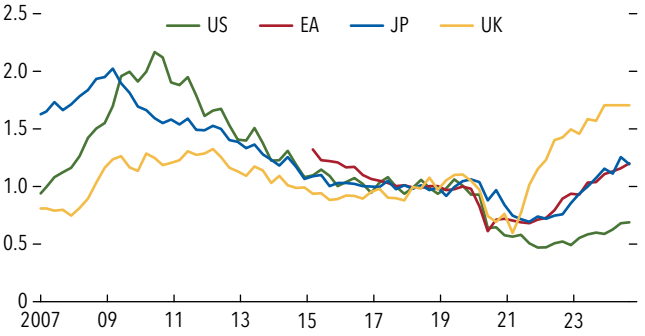
Corporate bond valuations are stretched, but to the lesser extent compared with last year.

2. Misalignments in Corporate Bond Spreads
(Quarterly average deviation from fair value per unit of risk, left scale; percentile, right scale)



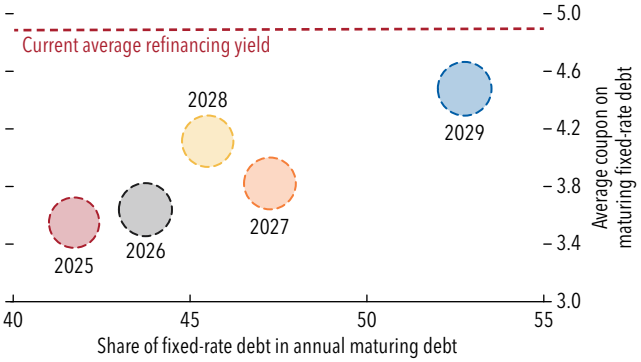
Bankruptcies have crept up, with greater divergence.

3. Corporate Bankruptcies
(Index based on cases, 2017–19 average = 1)



Decent share of fixed-rate debt needs refinancing at higher costs.

4. Average Coupon on Maturing Fixed-Rate Debt versus Share in Annually Maturing Debt
(Percent)



Sources: Bloomberg Finance L.P.; Dealogic; Moody's Investors Service; and IMF staff calculations.

Note: In panel 1, the business optimism index is the arithmetic average of the normalized National Federation of Independent Business (NFIB) Small Business Optimism Index and the University of Michigan Consumer Expectations Index since 2022. The green marker is a proxy for optimism index in April. In panel 2, model values are based on available data as of April 8. In panel 2, misalignment is the difference between market spread and model-based spread scaled by the standard deviation of monthly changes in spread. Negative values indicate overvaluation. For the model details, please see the October 2019 Global Financial Stability Report, Online Annex 1.1. In panel 4, the size of the bubbles represents the amount of total outstanding debt maturing. Data labels in the figure use International Organization for Standardization (ISO) country codes. HY = high yield; IG = investment grade.

costly bankruptcies. That said, corporate bankruptcies have continued to creep up in major advanced economies (Figure 1.22, panel 3). Debt serviceability outlook could deteriorate rapidly if a prolonged period of trade policy uncertainty adversely affects earnings prospects. A decent share of corporate debt that will need to be refinanced in the next few years carries a fixed rate below the prevailing market yield, and an increase in credit spread leading to a higher funding cost owing to refinancing could challenge weaker firms amid such circumstances (Figure 1.22, panel 4).

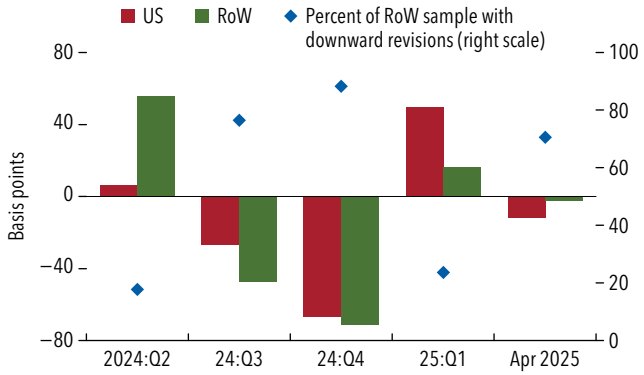
Trade Policy Uncertainty Is Especially Challenging for Emerging Market Firms

Compared with a decade ago, many countries have increased the shares of their exports destined for the United States and the shares of their imports coming from China, in turn increasing their exposures to international trade policies. Most of these countries are navigating periods of heightened trade uncertainty, which has weighed on corporate profitability estimates in the last few quarters. In the first quarter of 2025, optimism regarding trade negotiations and other country-specific prospective policy measures led to

Figure 1.23. Trade Policy Uncertainty and Corporate Profitability and Debt Serviceability

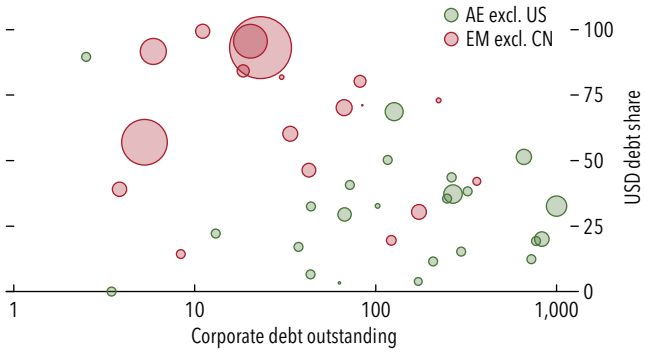
Estimates of corporate profitability widely revised down.

1. End-of-Quarter Revisions to Profit Margin Estimates for 2025
(Basis points, left scale; percent, right scale)



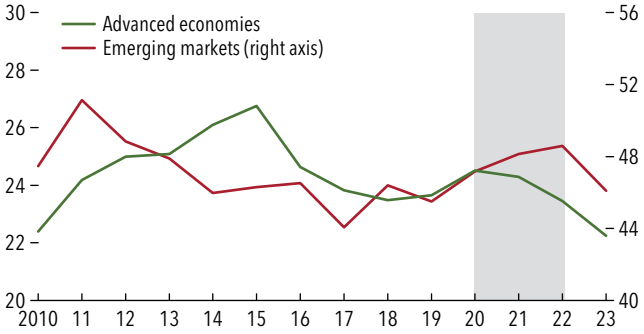
Firms with large US-dollar-denominated debts will face debt management challenges under high foreign exchange volatility.

2. Corporate Debt Outstanding, Debt Share Denominated in Dollars, and Currency Depreciation
(Percent, vertical axis; billions of dollars, horizontal axis, size of bubbles proportionate to currency depreciation since 2022)



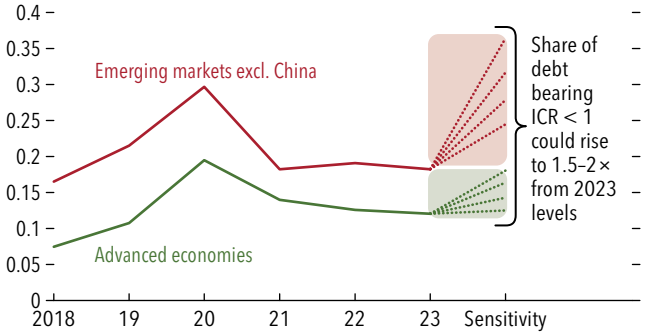
Cash buffers have declined to prepandemic levels by 2023.

3. Share of Cash and Cash Equivalents in Total Liabilities
(Percent)



Share of debt with poor servicing could swell to 1.5–2× of current levels

4. Sensitivity of Corporate Debt to Interest Rate and Profit Margin Pressures: Share of Debt with Interest Coverage Ratio below 1
(Percent)



Sources: Bloomberg Finance L.P.; Dealogic; Moody's Investors Service; S&P Capital IQ Pro; Organization for Economic Co-operation and Development, National Accounts database and IMF staff calculations.

Note: Panel 1 shows end-of-quarter revisions to profit margin estimates for benchmark equity indices in 17 advanced and emerging market economies and the United States. The "rest of the world" series is the simple average of country-level revisions. In panel 2, the size of the bubbles represents the extent of local currency depreciation since 2022, when the Federal Reserve started its round of rate hikes. Panel 3 features median cash and equivalents as a percentage of total financial liabilities of the corporate sector for 10 AEs and 10 EMs. Cash and equivalents include cash and deposits, loans, debt securities, and accounts receivable on the asset side of the balance sheet. The AE country group comprises Canada, France, Germany, Greece, Japan, Korea, The Netherlands, Spain, the United Kingdom, and the United States. The EM country group comprises Brazil, Chile, Colombia, Croatia, Hungary, India, Israel, Mexico, Poland, and Türkiye. In panel 4, the Advanced economies group includes Australia, Belgium, Canada, Czech Republic, France, Germany, Italy, Japan, Luxembourg, The Netherlands, New Zealand, Norway, South Korea, Spain, Sweden, the United Kingdom, and the United States. "Emerging markets excl. China" includes Brazil, Chile, Colombia, Hungary, India, Indonesia, Israel, Malaysia, Mexico, Poland, Russia, South Africa, Thailand, and Türkiye. AE = advanced economy; EM = emerging market.

improved profitability estimates for both US firms and companies from the rest of the world; these estimates have recently been revised downward on growing concerns about potentially higher tariff rates squeezing corporate margins going forward (Figure 1.23, panel 1).

In the case of emerging market corporate firms, one critical channel through which heightened trade policy uncertainty could impact firms, is through higher exchange rate volatility (see section "Emerging and Frontier Markets: Challenges and Resilience"), as was also evident during global trade tensions in 2018–19. Exchange rate volatility drives up the cost of FX hedging instruments for corporate firms, particularly for those directly integrated into global supply chains or with sizable foreign-currency-denominated debt. These firms must cover their FX exposures but may typically have only limited access to hedging tools—only 11 percent

of the turnover in global FX derivatives is denominated in emerging market currencies, far less than emerging markets' share in global trade of more than one-third (see BIS 2016 and 2022)—and so FX and maturity mismatches alongside higher volatility could exacerbate funding problems. Limited access to FX hedging also potentially weakens earnings via lower exports, higher hedging costs, or substantial FX-related losses.[13]

The FX challenge could prove especially formidable for firms that have built up dollar-denominated liabilities in recent years. Specifically, if trade tensions were to reduce income in foreign currencies, servicing these liabilities could become increasingly onerous. Many emerging market firms have large amounts of dollar-denominated debt in their liabilities, and their currencies are prone to depreciation more than those of peers operating with smaller dollar exposures. For example, firms in Latin America, which have taken greater advantage of the opportunity to tap cheap dollar debt in the last few years,[14] have faced larger local currency depreciation. Despite the relatively small size of each country's corporate debt outstanding, portfolio outflows, coupled with global currency depreciation against the dollar and potentially exacerbated by various external factors, could increase the risk of market stress (Figure 1.23, panel 2).

With uncertainties abounding, firms may further draw down cash liquidity buffers built up during the pandemic. These cash buffers[15] helped firms ride out the global tightening in monetary policy during 2022–23 but have now declined to below prepandemic levels in both advanced and emerging market economies (Figure 1.23, panel 3). With dwindling cash buffers and lower expected earning margins, the share of firms with poor debt serviceability, that is, those with interest coverage ratios (ICRs) of less than 1, could rise closer to levels seen in 2020. Currently, 12 percent of advanced economy corporates have interest coverage ratios below 1, whereas this share is 18 percent for emerging market corporate firms outside China. IMF staff analysis suggests that a progressive worsening of earning margins, along with an increase in spreads and effective funding costs, could impair corporate debt serviceability in a nonlinear manner, and the share of debt with poor serviceability could reach 1.5 to 2 times of levels in 2023. The sensitivity is higher among emerging market corporates, where an initial 50 basis point compression in profit margins and an equivalent increase in effective interest rates could raise this share of debt with poor serviceability by 6 percentage points; this share could increase by 17 percent under a more adverse scenario of a 200 basis point impact on profit margins and interest rates (Figure 1.23, panel 4). For advanced economies, the adverse scenario could raise the share of debt with poor serviceability by 5.6 percentage points to 18 percent.

The Direct Lending Segment of Corporate Credit Is Showing Mixed Prospects

Leveraged finance instruments—corporate debt characterized by borrowers with high amounts of leverage and weaker credit ratings—have become a more systemic segment of the credit market. They remain under pressure from high interest rates, in large part, because of the floating-rate nature of the debt. The main categories affected are broadly syndicated loans (BSLs—typically public loans with multiple lenders) and direct lending (DL—debt provided by nonbank lenders, that is, private credit). Compared with that of BSLs, the universe of DL borrowers includes a larger share of vulnerable borrowers.

Credit quality showed some improvement alongside the narrowing downgrade-upgrade gap among DL borrowers through late 2024 (Figure 1.24, panel 1), and DL default rates have been broadly in line with other measures of credit distress, for instance, BSL default rates and banks' loan loss provisions (Figure 1.24, panel 2). More recently, rising uncertainty and weakened investor confidence amid the market turmoil following the tariff announcements by the United States starting April 2 have driven up spreads on new deals and driven down expected deal flow. The risk of earnings erosion and cash flow problems has increased, with idiosyncratic pockets of risk in some industries or borrowers. Even before the tariffs, nearly half of DL borrowers had negative free operating cash flows (Figure 1.24, panel 3), prolonging their reliance

[13]Many emerging market corporate firms have limited "natural FX hedges" because future claims and liabilities in foreign currency are not necessarily correlated. Firms may not match claims and liabilities in foreign currency. The "natural hedge" may also be limited if the correlation between exports and imports trade credit is not high.

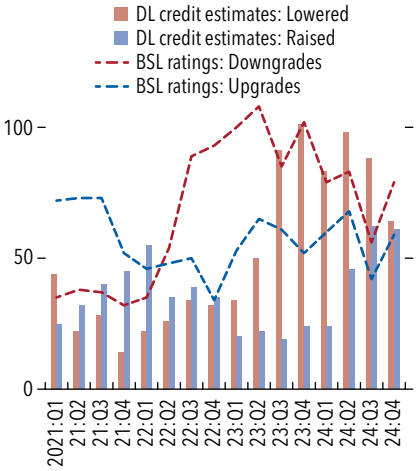
[14]According to Chui, Kuruc, and Turner (2016), emerging market firms have historically raised debt from offshore markets during prolonged low-rate environments as sovereign spreads have narrowed, making the debt cheaper. More than 70 percent of the bonds issued by firms in major Latin American countries since 2020 have been denominated in dollars. The corresponding share for emerging markets excluding China averages around 47 percent.

[15]"Cash buffers" are defined here as cash and cash equivalent assets as a percentage of total financial liabilities.

Figure 1.24. Broadly Syndicated Loans and Direct Lending

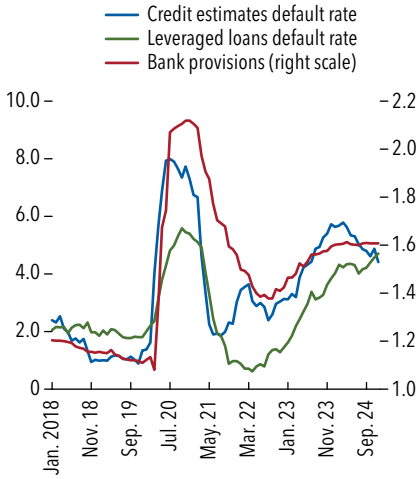
Downgrades still exceed upgrades for broadly syndicated loans and direct-lending borrowers.

1. Number of Revisions of S&P Credit Estimates for Direct-Lending Borrowers and Credit Ratings for BSL Borrowers
(Count)



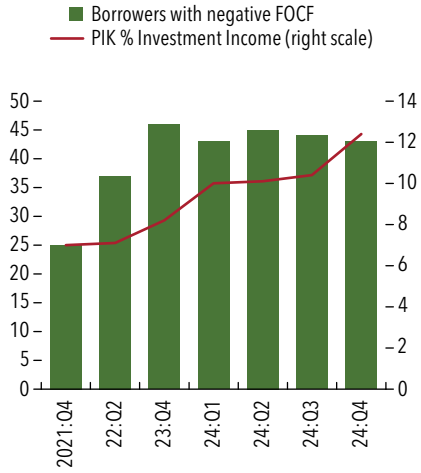
Direct-lending default rates have been broadly in line with other measures of credit distress.

2. US DL and BSL Default Rates versus US Banks' Loan Loss Provisions
(Percent, left scale; percent of total loan portfolio, right scale)



Free operating cash flows have often been negative, and usage of PIK has been high.

3. Share of DL Borrowers with Negative FOCFs and Share of PIK Income in Select Traded BDCs' Total Investment Income
(Percent)



Sources: Bloomberg Finance L.P.; S&P Global Ratings; and IMF staff calculations.

Note: In panel 2, default rates include selective defaults. Banks' loan loss provisions are expressed as percentages of total loans. In panel 3, the share of direct-lending borrowers with negative FOCFs is based on the universe of S&P Global Ratings' Credit Estimates. Select traded BDCs are based on Bloomberg's set of peer BDCs. PIK income includes interest and dividend income. BDC = business development company; BSL = broadly syndicated loan; DL = direct lending; FOCF = free operating cash flow; PIK = payment-in-kind.

on payment-in-kind (PIK) provisions and amend-and-extend restructurings.[16] Health care services and software remain among most affected, with 20 and 27 percent, respectively, of DL borrowers in these sectors having S&P credit estimates in the "ccc" category (S&P Global Ratings 2024b) and are therefore among the most vulnerable to elevated policy uncertainty. Market participants express concerns that this deterioration of the borrowers' credit quality has not been reflected in the accounting valuation of DL loans (see the discussion about stale valuation practices in the April 2024 *Global Financial Stability Report*, chapter 2). Moreover, as private equity (PE) funds are facing pressures to sell investments to return capital to their investors (LPs), PE funds are increasingly levering up their acquired companies to fund special dividends to be distributed to LPs, thereby further straining borrowers' debt sustainability.

[16]PIK provisions in DL loans allow borrowers to pay a portion of interest in cash and capitalize the remaining interest by adding it to the loan principal. Such provisions can address borrowers' short-term cash flow challenges but may defer the recognition of underlying financial issues, potentially increasing debt burdens over time.

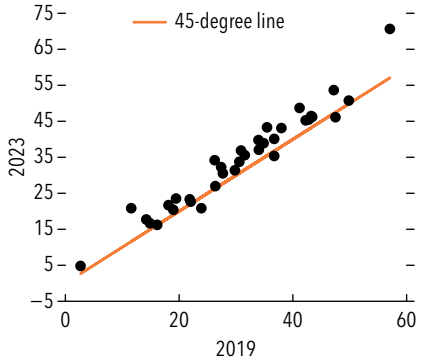
Household Sector Vulnerabilities Are Increasing due to Elevated Holdings of Equity

Household assets had grown rapidly since the end of the pandemic, with price increases in equities and residential housing markets fueling the growth. Households in most countries now hold more stocks as a share of their financial assets than they did in 2019 (Figure 1.25, panel 1). For countries where household stock holding shares were previously low, an increase in the share is a sign of improved stock market participation and investment diversification. Notably, US households' stock holdings have reached a record high level by the end of 2024, driven in large part by the appreciation in the value of households' portfolios of equity securities, but also in part by the modest decline in deposits and steady holdings of debt securities as risk appetite among households increased (Figure 1.25, panel 2). US households' exposure to equities and investment fund shares now modestly surpasses real estate, which has historically been the largest asset on household balance sheets. Increasing stock market exposure has made households more vulnerable to any

Figure 1.25. Household Exposure to Stock Market and Real Estate

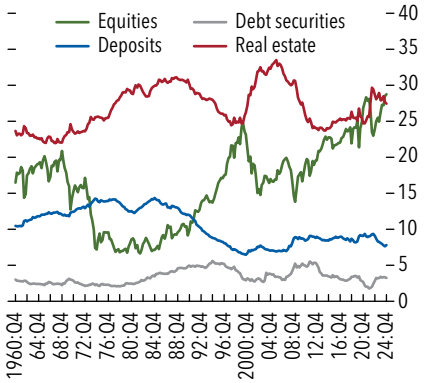
Globally, households are currently holding a larger share of financial assets in equities.

1. Share of Stocks in Household Financial Assets across Countries, 2019 versus 2023
(Percent)



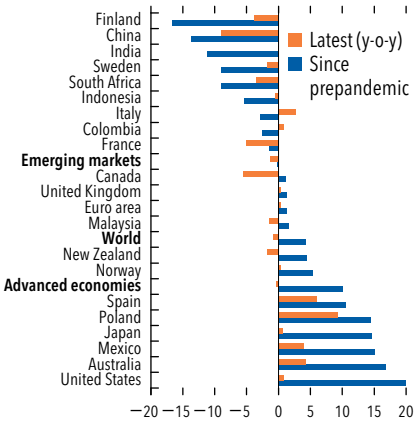
In the United States, equities as a share of total household assets have increased to a record high.

2. US Households' Asset Allocations
(Percent)



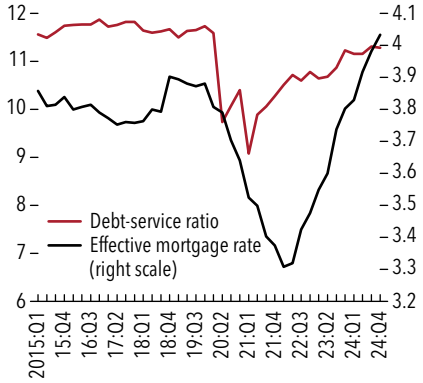
Housing markets have cooled modestly but average real home prices remain elevated relative to prepandemic levels.

3. Changes in Global Real Estate Index
(Percent)



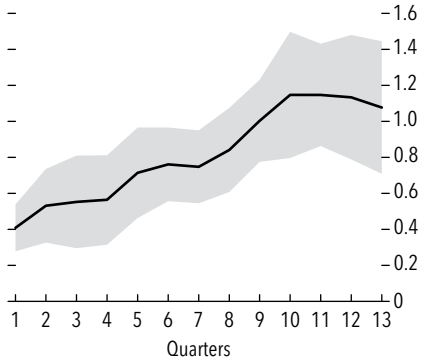
US household debt-service ratios have increased amid higher mortgage rates.

4. US Debt-Service Ratios and Effective Mortgage Rates
(Percent)



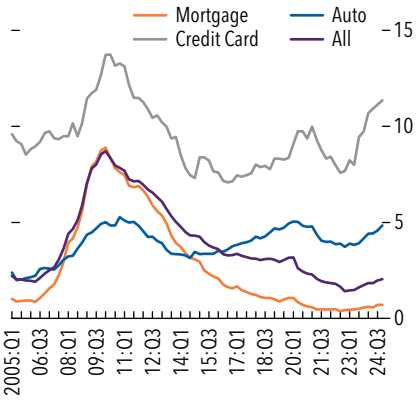
The rise in debt-service ratio is associated with higher delinquency rates.

5. Impulse Response of US Household Delinquency to a 1 Percentage Point Increase in Debt-Service Ratio
(Percent)



Credit card and auto loan delinquency rate have increased.

6. Rates of Delinquency for 90 Days or Longer: Percent of Balance by Loan Type
(Percent)



Sources: Bank for International Settlements; Federal Reserve Board, Financial Accounts of the United States (Z.1); Haver Analytics; Federal Reserve Bank of New York, New York Fed Consumer Credit Panel/Equifax, Household Debt and Credit data; and IMF staff estimates.

Note: In panel 2, equities and investment fund shares, debt securities, deposits, and real estate are at market value and include indirect and direct holdings of households and nonprofit institutions according to US financial accounts. Investment fund shares include mutual fund and money market fund shares. Deposits include currency. In panel 4, the household debt-service ratio is the ratio of debt-service payments to disposable personal income. Debt-service payments include both mortgage and consumer debt payments. Panel 5 uses the local-projections method to estimate the impulse responses of delinquency rates, with right-hand side variables including current and lagged-four debt-service ratios and lagged-three delinquency rates. The delinquency rate is calculated as the share of balances with payments late by at least 30 days. The shaded area shows Newey-West 90 percent confidence bands. Panel 6 data are taken from the Federal Reserve Bank of New York's Household Debt and Credit report (2025) and do not depict all credit types.

prolonged decline in stock prices; indeed, the recent tariff-related stock market correction could directly reduce household wealth.[17] Financial turbulence may also exacerbate market sell-offs if households, sometimes known as retail investors, reduce exposures to assets or redeem their investment vehicles, such as mutual funds.

Similarly, fluctuations in home prices can also challenge household balance sheets, given households' high levels of exposure to the housing market. Household wealth in the United States, particularly housing prices, may have been the most significant driver of consumption in recent years, meaning that a sharp repricing in housing and stock holdings could pose significant headwinds to aggregate consumption and overall economic activity (see Dao, Jirasavetakul, and Zhou 2024; and IMF 2024).

So far, global real home prices have been declining gradually and only to a modest degree (Figure 1.25, panel 3) from their pandemic period highs, in part because of recent rate-cutting cycles among global central banks. Paces of price changes have varied, however, and US home prices have notably remained elevated.[18] That said, despite higher aggregate levels of home equity due to elevated home prices, a longer period of higher interest rates—if inflation proves more persistent than currently expected—may adversely affect households' debt servicing capacity to service their debt and erode the value of their real estate assets. This has already been felt in countries with predominantly variable-rate mortgages, which have seen higher debt-service ratios, though there appears to be some moderation or plateauing as interest rates decline. Households in countries with predominantly fixed-rate mortgages have seen debt-service ratios remain relatively low, though their capacity to service their debt may strain as outstanding debt gradually shifts to higher rates.[19]

Some evidence would suggest this is already playing out to some degree in the United States, as higher interest rates have modestly increased the household debt-service ratio (Figure 1.25, panel 4). IMF staff estimates suggest that a 1 percentage point increase in the debt-service ratio is associated with a gradual rise in household delinquency rates in subsequent quarters (Figure 1.25, panel 5). Furthermore, lower-income households appear more vulnerable to higher interest rates, given their higher levels of exposure to variable-rate debt. Although delinquency rates for fixed-rate mortgages remain low (Figure 1.25, panel 6), they have increased notably for variable-rate auto loans and credit card debt over the past couple of years. Stress on households may reaccelerate if the economy slows down or if inflation remains high (Federal Reserve 2025).

Sentiment in Commercial Real Estate Has Shown Signs of Stabilization, but Headwinds Remain

Global prices and transaction volumes for commercial real estate (CRE) have continued to stabilize since the October *Global Financial Stability Report*. Total CRE returns were 1.3 percent in the fourth quarter of 2024, and volume climbed to positive territory for the first time after bottoming out in the third quarter of 2023 (Figure 1.26, panel 1). While the latest data may not yet fully account for the recent market turmoil, evidence of stabilization of CRE returns and transaction volumes could be driven by the ongoing easing of monetary policy, with both occupier and investment markets showing some positive headline balances.[20]

Recovery remains uneven across regions and property types. Notably, in North America, office sector values have declined significantly (12.3 percent) year

[17]Some market observers associate household equity ownership with equity market cycle peaks on the belief that households may have a bias toward investments based on past performance. Research also suggests that consumer spending is sensitive to stock market movements, as indicated by credit card spending (see also Farrell and Eckerd 2021 and Brown and Wright 2023).

[18]This contrasts with countries with a higher percentage of variable-rate mortgages, like Norway, but also with developments in other, similar advanced economies with a high percentage of fixed-rate mortgages, like Canada and France, where home prices have declined significantly (see the April 2024 *World Economic Outlook*). Elevated home prices in the United States continue to be supported by the lack of single-family housing supply, as well as the so-called lock-in effect, which discourages homeowners from selling their house at the cost of a higher mortgage rate.

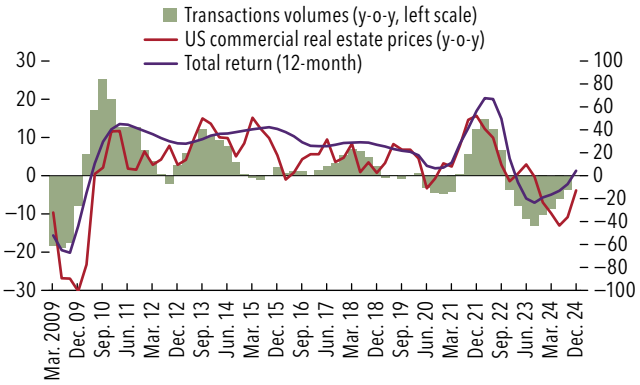
[19]Despite the lock-in effect, the share of homeowners with higher mortgage rates has gradually increased in the United States as a growing percentage of buyers come to accept the higher rates. According to the latest data from the US Federal Housing Finance Agency's National Mortgage Database (https://www.fhfa.gov/data/dashboard/nmdb-outstanding-residential-mortgage-statistics), 83 percent of US mortgage holders have an interest rate below 6 percent, a decrease from the mid-2022 peak of about 93 percent.

[20]"Occupier" and "investment" markets refer to the commercial real estate landscape, whereby businesses (occupiers) lease properties for their operations (for example, office space, retail stores, and industrial facilities), as opposed to those who purchase properties as an investment to generate income through rent, capital appreciation, or both.

Figure 1.26. Developments in Commercial Real Estate

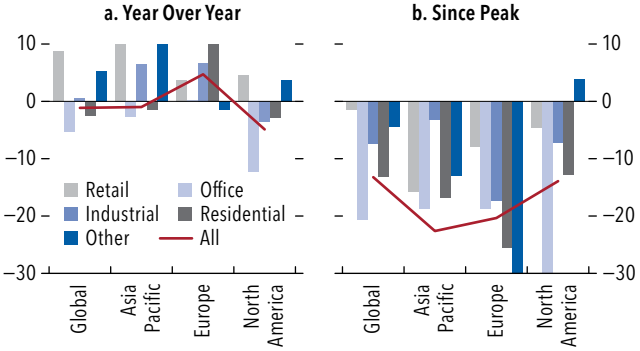
Transaction volumes and prices for commercial real estate have reached their nadirs.

1. Global Total Returns, Deal Volumes and US Prices
(Percent, left axis; percent change, right axis)



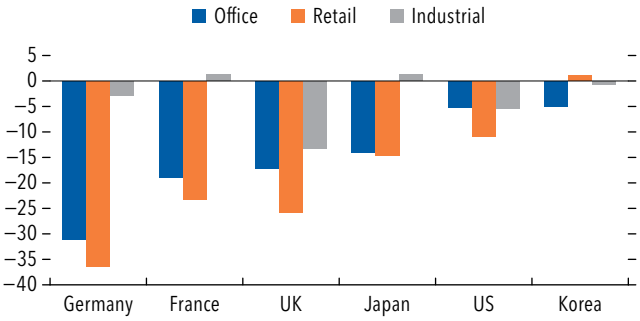
Falling policy rates have brought some relief to commercial real estate, but office and ...

2. Year-over-Year Change in Quarterly Property Index and Change Relative to Peak
(Percent)



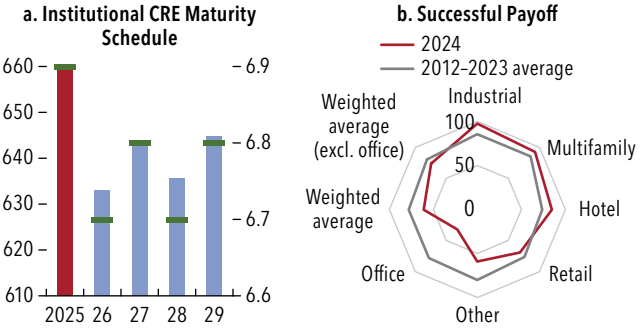
... retail sectors continue to struggle due to structural factors.

3. Gap between Buyers and Sellers in Price Expectations, Selected Countries
(Percent)



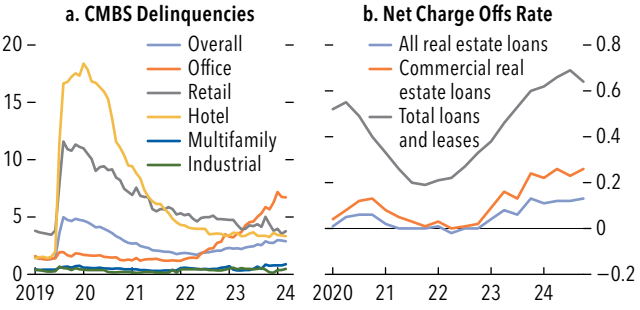
In the US, large amounts of commercial real estate debt are coming due ...

4. Annual CRE Debt Maturity Schedule and CMBS Refinancing Rate
(Billions of dollars, bars, left axis of subpanel a; percent of total assets, green marker, right axis of subpanel a; percent of successful payoff, subpanel b)



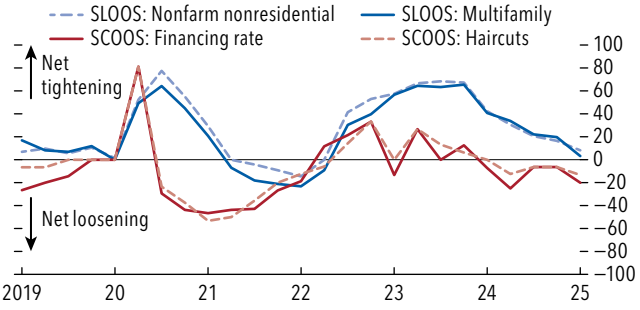
... which could drive delinquencies higher.

5. Delinquency Rate by Property Type and Banks Net Rate of Charge-Offs
(Percent)



Banks appear to have stopped tightening lending standards for commercial real estate.

6. Surveys on CRE Loans and CMBS Financing Conditions
(Percent)



Sources: BofA Global Research; Federal Reserve (2024, 2025); Fitch Ratings; Mortgage Bankers Association; MSCI World Real Estate Index; and IMF staff calculations.

Note: In panel 1, the MSCI Global Quarterly Property Index is relative to peak values of each corresponding property type/region; last observation is 2024:Q4. In panel 3, the gap in price expectations measures the degree of difference in buyer and seller views regarding pricing as computed by MSCI as of the end of 2023. Panel 4 shows the percentage of conduit loans maturing in 2024. In panel 5, net charge-offs are the value of loans and leases removed from books and charged against loss reserves; values are annualized and net of recoveries. In panel 6, the Senior Credit Officer Opinion Survey on Dealer Financing Terms (SCOOS) reports the percentage of respondents to question 70, "Over the past three months, how have the terms under which CMBS are funded changed?" that reported an "unchanged" financing rate for commercial mortgage-backed securities (CMBSs). For both SCOOS and SLOOS, the latest survey observation is 2025:Q1. CRE = commercial real estate; SLOOS = Senior Loan Officer Opinion Survey on Bank Lending Practices; y-o-y = year over year.

over year, with values of industrial and retail properties remaining steady overall. Offices in Asia and the Pacific and Europe have registered smaller declines (Figure 1.26, panel 2). Relative to their post-pandemic peak, private real estate values globally have decreased 13.2 percent, declining most for offices (20.6 percent), as the sector continues to face a structural shift to less in-office work. Such declines echo the market's estimates for the so-called price gap—the degree of difference in buyers' and sellers' views on pricing—in respect to office and retail properties. For offices, the price gap ranges between 5 percent (Korea) and 30 percent (Germany). Industrial property prices have seen some more modest buyer-seller divergence: –5.2 percent in the United States and 1.5 percent in Japan (Figure 1.26, panel 3).

The pressure to refinance legacy loans persists. Estimates suggest that $660 billion in commercial and multifamily real estate mortgages in the United States is due for payoff in 2025, with about $3.2 trillion in CRE debt maturing between 2025 and 2029, accounting for more than half of the $6.1 trillion in outstanding debt. Some loans that originated during periods of low interest rates and high property valuations may now be subject to negative equity. This corresponds to nearly 30 percent of office loans maturing in 2025 (about $30 billion) and $19 billion of loans on apartment properties (10 percent of maturing loans). On the commercial mortgage-backed securities (CMBSs) front, just 61 percent of US loans that matured in 2024 were actually paid off, compared with 78 percent over the previous decade, highlighting cash flow difficulties among CRE borrowers. Refinance success rates continue to vary by property type. Only 32 percent of conduit loans collateralized by office properties were able to be refinanced in 2024, compared with about 85 percent of industrial, multifamily, and retail conduit loans that expired last year (Figure 1.26, panel 4). Although the ongoing monetary policy easing and pent-up demand have helped increase origination of CRE debt, current levels remain below those before 2019 across all property types on account of increased lender caution and regulatory scrutiny (down by 41 percent for all segments and 54 percent for office real estate).

Consequently, CRE delinquencies have continued to pick up. In the fourth quarter of 2024, the overall CRE loan default rate in the United States reached its highest level since 2014 (about 1.57 percent). At the segment level, office-secured loans remain the primary cause for concern, and delinquency rates for other property types have leveled off (Figure 1.26, panel 5). At the same time, US banks' net charge-offs on CRE loans—though still low by historical standards—rose in 2024 to 0.26 percent at the end of 2024, with the increase mainly reflecting the financial strain on owners of office property. Banks appear to have stopped tightening credit standards for CRE loans across all categories. In securitized markets, a vast majority of primary dealers recently reported that the rates offered, and haircuts required, to finance CMBSs have stabilized (Figure 1.26, panel 6; Federal Reserve 2024). Liquidity challenges remain, however, being most pronounced in the office sector, in which credit availability is the tightest and concerns over future demand among occupiers persist.[21]

Overall, there appear to be upside and downside risks for the CRE market going forward. Across major advanced economies, effects of trade uncertainty and potential disruptions to global supply chains could result in a weaker-than-expected recovery in CRE through lower transaction volumes and higher cap rates, depressing property values, and make refinancing more difficult. Higher interest rate term premiums could challenge the repayment ability of developers and borrowers. At the same time, the CRE sector generally outperforms the broader equity market during easing periods, hence the current Federal Reserve cutting cycle has the potential to support recovery in prices and valuations, everything else equal. In parallel, office conversions are becoming increasingly attractive to developers, with conversion rates having surged recently, albeit for just a small part of the market (in the United States, 71 million square feet or 1.7 percent of total office space, as of the third quarter of 2024). Owners of office property have been forced to sell buildings at a discount owing to high rates of office vacancy (based on market estimates, between 17 and 20 percent in the United States), which has encouraged price discovery and a reorientation of investors toward emergent property types.

[21]In the fourth quarter of 2024, CRE lenders and lessors had higher delinquency rates than the previous year. While bank exposure to CRE through providing credit lines to real estate investment trusts remains relatively low, recent evidence suggests that indirect exposure through real estate investment trusts could amplify systemic risks during periods of market stress (see also Acharya and others 2025 and Crosignani and Prazad 2024).

Policy Recommendations

The possibilities of further correction of asset prices, potential strains impacting highly leveraged financial institutions, and turbulence in core sovereign bond markets elevate financial stability risks. This section recommends policies to limit vulnerabilities and increase financial sector resilience. The policy toolkit for mitigating financial stability risks includes policies for market infrastructures that ensure market functioning, the prudential supervision and regulation of financial institutions, and emergency liquidity and crisis resolution tools. Mitigating financial vulnerabilities and preparedness for crisis management are key to containing the potential adverse impact of financial sector developments on macroeconomic outcomes. History has shown time and time again that financial crises entail significant and persistent macro downside costs.

Amid heightened economic and trade policy uncertainty and turbulent financial markets, authorities should prepare to deal with financial instability. They should ensure that financial institutions are prepared to access central bank liquidity facilities and be prepared to intervene early to address severe liquidity or market functioning stress, especially in core bond and funding markets. Liquidity can be provided to nonbanks with appropriate guardrails (see Chapter 2 of the April 2023 Global Financial Stability Report). Financial institutions should be required to test their access to central bank instruments periodically. Implementation of recovery and resolution frameworks is critical for addressing weak or failing financial institutions without undermining financial stability or risking public funds.

Inflation surprises could trigger further sell-offs in financial markets. Central banks should gauge price movements carefully. Where growth and inflation momentum are set to continue slowing, central banks should gradually ease monetary policy toward a more neutral stance. Where inflation remains stubbornly above targets, central banks should maintain a restrictive monetary stance and affirm their commitment to bring inflation back to their targets to ameliorate upside risks to inflation.

Although major emerging markets have proven remarkably resilient to the recent market turbulence, further abrupt asset price corrections in global markets could tighten emerging markets' financial conditions and raise currency volatility. Appropriate policy responses recommended by the IMF's Integrated Policy Framework depend on country-specific circumstances. For countries with deep foreign exchange markets and low foreign currency debt, relying on monetary policy and exchange rate flexibility is appropriate. On the other hand, if foreign exchange markets are shallow or countries face large foreign currency debts, it may be appropriate to conduct foreign exchange interventions temporarily or loosen inflow capital flow management measures if conditions allow, provided such interventions do not impair the credibility of macroeconomic policies or replace necessary adjustments. The strength and independence of institutions at the foundation of monetary and financial sector policies must be continuously increased to boost longer-term resilience in emerging market economies.

High leverage of NBFIs and increased interconnectedness between NBFIs and banks mean that strains at weaker institutions may have financial stability consequences for the broader system. Sufficient levels of capital and liquidity in the banking sector remain the anchor of global financial stability. Evidence of unwarranted divergence of average risk weights across banks highlights the need for full, timely, and consistent implementation of Basel III and other international standards. Better-resourced, independent, intensive, and conclusive supervision also remains paramount to financial stability. Supervisors should continue to stress-test banks' exposures, especially those from sectors facing challenges, such as commercial real estate. The deepening nexus between banks and NBFIs also calls for supervisors to enhance the risk assessment of their linkages.

It is crucial to strengthen policies that mitigate vulnerabilities and mechanisms of shock amplification stemming from nonbank leverage. It is also paramount to enhance reporting requirements for NBFIs so that supervisors can distinguish poorly governed and excessive risk-taking institutions from others that contribute more positively to financial intermediation. Given the potential significant externalities from NBFIs, the relevant authorities need to coordinate more closely to ensure that they have sound governance structures, mechanisms, and processes in place for monitoring NBFIs from systemwide and cross-sectoral perspectives. The strong growth of NBFIs in financial intermediation can generate alternative sources of financing for firms, better capital allocation, and greater market efficiency through activity in capital markets. However,

reaping these benefits requires policy steps to contain risks to financial stability.

Elevated economic uncertainty and financial market volatility underscore the need to strengthen the prudential policy frameworks, including micro and macroprudential approaches. In countries with insufficient buffers, policymakers should tighten macroprudential tools to increase resilience against a range of shocks while avoiding a broad tightening of financial conditions. Where a downturn in activity is leading to financial stress, macroprudential buffers could be released to help banks absorb losses and support the provision of credit to the economy, thereby reducing the financial amplification of the downturn.

With gross sovereign financing needs forecasted to remain above prepandemic averages in most countries, fiscal adjustments should primarily focus on credible and growth-friendly rebuilding buffers to keep amounts of debt issuance and costs of external financing affordable, as both of these are imperative to prevent escalation of investors' concerns and an abrupt tightening of financial conditions. Where opportunities arise, countries should proactively explore liability management operations to manage refinancing risks and reduce or smooth debt servicing profiles. For countries where debt is at risk of becoming unsustainable, early contact with creditors to coordinate an orderly and efficient debt treatment that restores debt sustainability could help avert costly defaults and prolonged loss of market access.

To address risks from potential wide adoption of crypto assets, jurisdictions should safeguard monetary sovereignty and strengthen monetary policy frameworks, guard against excessive volatility in capital flows, and adopt unambiguous tax treatment of crypto assets. The IMF and Financial Stability Board have set out a road map for building institutional capacity. Consistent, comprehensive, and coordinated implementation of this road map and other relevant international standards and recommendations is paramount for addressing financial stability and integrity risks stemming from crypto assets while supporting macroeconomic policies. Some crypto projects, including certain tokenization developments, may fall under existing banking or securities regulations, and authorities should monitor and supervise those activities to address vulnerabilities based on them.

The growing interconnectedness across jurisdictions means that stress emanating from specific jurisdictions can have a global impact, calling for other regions to be prepared. Enhancing multilateral surveillance should enable policymakers to monitor and prepare for global shocks, cross-country contagion, and economic and financial spillovers from other jurisdictions. Strengthening the global financial safety net is crucial to swift and effective mitigation of financial risks.

Box 1.1. DeepSeek and the AI Revolution

On January 27, 2025, a Chinese company, DeepSeek, announced a potentially lower-cost artificial intelligence (AI) large language model (LLM), shifting investor sentiment concerning the sustainability of the recent equity rally led by the technology sector and driven in large part by optimism about investment in AI-enabling computational resources (for example, infrastructures). This shift led to a correction in equity prices that day, centered on equities in the information technology (IT) sector, especially those in advanced economies (see Figure 1.1.1, panel 1). For example, the S&P 500 IT sector fell by more than 5 percent, dragging the overall index down 1.5 percent. Spillovers to other sectors and regions were limited and mainly involved energy sectors.

As highlighted in the October 2024 *Global Financial Stability Report*, equity valuations had become highly dependent on continued growth in earnings. The launch of DeepSeek's model triggered concerns over current earnings forecasts for key US stocks, especially those in the semiconductor space. Price-to-earnings ratios (P/E) in the S&P 500 IT sector have fallen by close to 2 percentage points since the launch but remain significantly above historical norms (See Figure 1.1.1, panel 2). Although Chinese stock markets were closed on the day of the announcement, investor reaction was positive, with technology sectors from the Chinese mainland and Hong Kong SAR having gained 10 and 30 percent, respectively, over the month following.

Since the announcement, major players in AI have reaffirmed their commitments to investing in the field, with capital expenditures for the Magnificent 7 (Alphabet, Amazon, Apple, Meta Platforms, Microsoft, NVIDIA, and Tesla) still showing strong growth (see Figure 1.1.1, panel 3). Investment from several of these companies, along with other AI developers, remains a major driver of growth in earnings for companies producing AI infrastructure or supplying energy to AI-related facilities. From a financial stability perspective, the existence of a cost-efficient open-source LLM could mean earnings for this subsector do not grow as expected, prompting a reassessment of current valuations and possibly a stock market correction. If a broader perspective is taken, on the other hand, competition among LLM models could drive down costs, increase take-up, and broaden the returns on AI. This could represent a quicker move to a second phase of the AI revolution as markets continue shifting focus from AI infrastructure to AI software and usage.

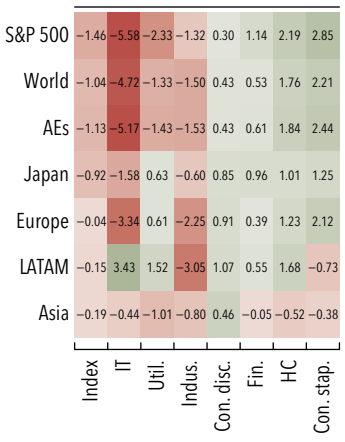
This box was prepared by Gonzalo Fernandez Dionis and Harrison S. Kraus.

Box 1.1 *(continued)*

Figure 1.1.1. Asset Prices: Divergence of Global Equity Markets as Corporate Bond Spreads Tightened

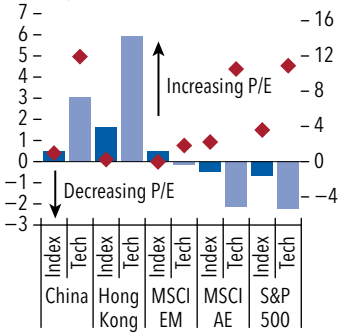
The stock price reaction has been centered in the technology sector, especially in AEs.

1. Equity Performance on January 27, 2025
(Percent)



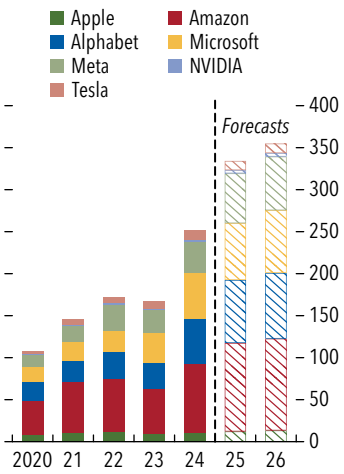
The impact on valuation in Chinese technology firms appears to have been mostly positive.

2. Changes in Forward P/E Ratios across Major Indices following the DeepSeek Announcement
(Changes in 2025 P/E ratios over the period January 27 to February 27, 2025, left scale; 12-month trailing P/E ratio's deviation from 10-year average, right scale)



Analysts forecast capital expenditures in the Magnificent 7 in 2025 will double levels seen in 2023.

3. Magnificent 7 Capital Expenditures
(Billions of dollars)



Sources: Bloomberg Finance L.P.; and IMF staff calculations.

Note: In panel 2, red diamonds show the current 12-month trailing deviation of the price-to-earnings (P/E) ratio from the 10-year average P/E ratio, plotted on the right scale. Blue bars represent percentage point change in P/E ratio using expected year-end 2025 EPS, plotted on the left scale. Analysis in this panel focuses on the one-month period following the DeepSeek announcement. It should be noted that stocks in Chinese mainland and Hong Kong SAR were experiencing a rally prior to the DeepSeek event, with the CSI Index, CSI Technology, Hang Seng Index, and Hang Seng Technology increasing 20, 45, 16, and 27 percent, respectively, between September 10, 2024, and January 24, 2025. Panel 3 depicts total capital expenditures for the Magnificent 7 companies. AE = advanced economy; Con. disc. = consumer discretionary; Con. stap. = consumer staples; EM = emerging market; Fin. = financials; HC = health care; Indus. = industrials; IT = information technology; LATAM = Latin America; Magnificent 7 = Alphabet, Amazon, Apple, Meta Platforms, Microsoft, NVIDIA, and Tesla; Tech = technology; Util. = utilities.

Box 1.2. Lower Bond Yields Are Exerting Pressure on Chinese Insurers

Yields on Chinese life insurers' investments are declining, impacting their solvency and valuations (Figure 1.2.1, panel 1). Bonds account for more than half of these investments. Monetary policy easing amid heightened deflationary pressures is driving the yield on domestic bond holdings lower (see the subsection "China: Rising Risks to Falling Prices"). This movement is exerting pressure on the returns from bond investments, which account for a share of the insurers' earnings (Fitch Ratings 2024). Consequently, Chinese insurance firms have significantly underperformed the valuation of other insurance companies globally, reflecting these pressures (Figure 1.2.1, panel 2).

Lower valuations may also reflect the decline in China's broad domestic equity index, which has also weighed on insurers' investment returns, because equities account for 17 percent of insurers' portfolios.[1] The relationship between insurers' investment returns and changes in domestic equity prices may strengthen, given a recent directive that encourages insurers to invest a portion of their incremental premiums in the domestic stock market.[2] Although greater equity exposure helps Chinese insurers diversify away from concentrated holdings of bonds, it may also increase the volatility of their earnings (S&P Global Ratings 2025).

Lower investment yields and returns are also exerting pressure on the solvency ratios of Chinese insurers, which although remain adequate, have deteriorated substantially in recent years (Figure 1.2.1, panel 3).[3] Chinese insurers are large investors in Chinese domestic markets and therefore their solvency matters for financial stability. This includes the property sector, where further downside pressure will continue to challenge insurers' solvency and profitability. In particular, analysts are concerned that insurers' current loss provisions may not sufficiently cover potential losses from the property sector because of limited data regarding fair market valuations and public defaults in the sector (Moody's Investors Service 2024b). On the other hand, the share of alternative and illiquid assets in insurance portfolios, of which property is a significant component, has decreased in recent years (Figure 1.2.1, panel 4).[4] A stricter "look-through" analysis to identify underlying assets and an increase in required capital charges for concentrated property investments could help mitigate vulnerabilities. To address the impact from the decline in investment yields on asset-liability mismatches, Chinese authorities should consider encouraging life insurers to reduce guaranteed rates and increase the share of floating-return policies. Overall, recent regulatory reforms are contributing to the strengthening of operational practices for Chinese insurers, and regulation and supervision have been enhanced, with greater emphasis on capital, risk management, and governance. Finalizing the implementation of new prudential standards is key (IMF 2025).

This box was prepared by Fabio Cortes.

[1]This exposure has increased over the past decade and is calculated from a sample that comprises the six listed life insurers or insurance groups in China: China Life Insurance Company, China Pacific Insurance Group, China Taiping Insurance Holdings Company, New China Life Insurance Company, Ping An Insurance (Group) Company of China, and The People's Insurance Company (Group) of China.

[2]China's six government agencies hosted a press conference on January 23, 2025, to explain their plan to encourage long-term capital participation in the equities market. The China Securities Regulatory Commission Chief gave insurers and mutual funds quantitative targets for investment in equities. The authorities expect major state-owned insurers to invest 30 percent of newly added insurance premiums into yuan-denominated A shares.

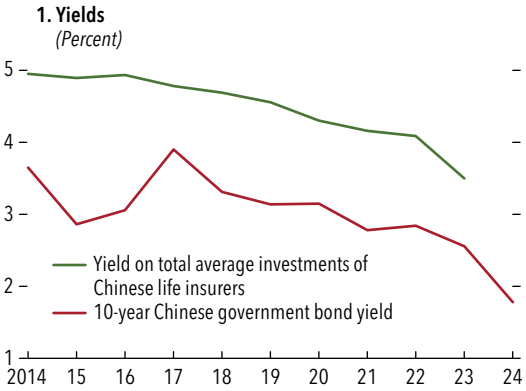
[3]Some of the decline in solvency ratios, and the core solvency ratio in particular, could also be related to the implementation of stricter domestic regulations regarding solvency. The introduction of the China Risk-Oriented Solvency System (C-ROSS) Phase II in December 2021 may partly explain the decline in the core solvency ratio in 2022. For example, Phase II limits the amounts of unearned profits recognized as core capital to increase the quality of available capital.

[4]This reduction may reflect insurers having taken account of losses in property investments in the valuation of their portfolios, rather than outright sales of these exposures.

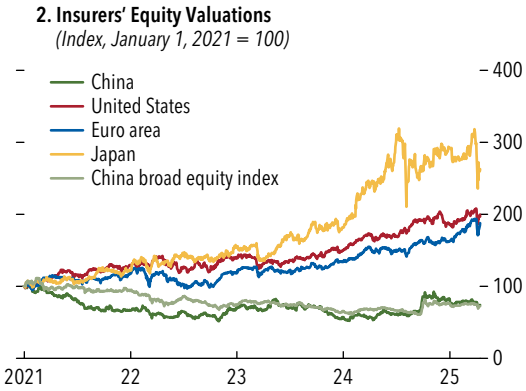
Box 1.2 *(continued)*

Figure 1.2.1. Challenges Facing Chinese Life Insurers

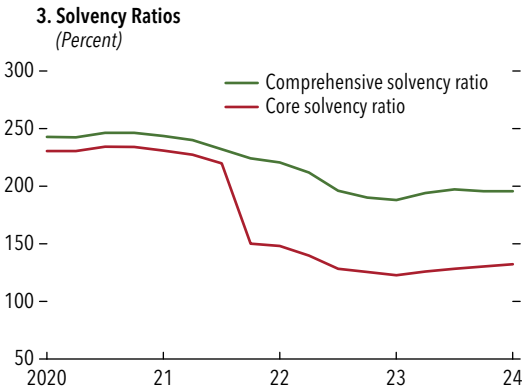
Chinese life insurers are under pressure from lower yields on their investments ...



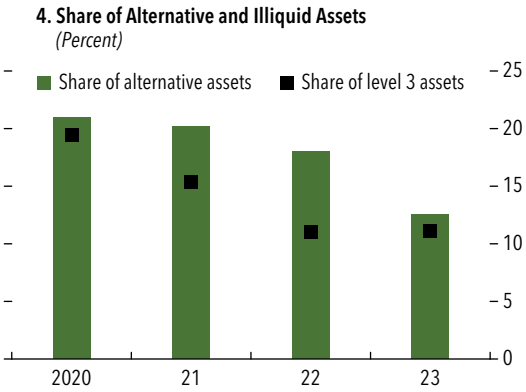
... as reflected in their valuations when compared with those of insurers in other major jurisdictions.



Their solvency ratios have deteriorated ...



... but liquidity has improved as they have reduced the share of alternative and illiquid investments in their portfolios.



Sources: Bloomberg Finance L.P.; China National Financial Regulatory Administration; Moody's Investors Service; S&P Capital IQ Pro; and IMF staff calculations.

Note: The calculations for the yield on total average investments of Chinese life insurers in panel 1, as well as all calculations in panel 4, are based on a sample that comprises the six listed life insurers or insurance groups in China: China Life Insurance Company, China Pacific Insurance Group, China Taiping Insurance Holdings Company, New China Life Insurance Company, Ping An Insurance (Group) Company of China, and The People's Insurance Company (Group) of China. The insurers' equity valuations in panel 2 reflect equity prices.

Box 1.3. Declining Enthusiasm for Green Investments Is Widening the Climate Financing Gap

Global issuance of sustainable debt has been decelerating over the past three years and remains below its annual peak in 2021 (Figure 1.3.1, panel 1). This deceleration has coincided with a decrease in media mentions of sustainable investments and suggests a deterioration in favorable sentiment toward green investments. Narrower differentials in the yields of conventional bonds and those of green debt also reflect this deterioration, although this "greenium" has rebounded in recent months (Figure 1.3.1, panel 2). Sustainable equities have performed worse, as outflows from equity-focused environmental, social, and governance (ESG) funds have driven overall subpar flows to the ESG asset class, and the number of funds has also plateaued as a share of total funds (Figure 1.3.1, panel 3). Correspondingly, ESG-equities' relative outperformance against broad equity indices observed in 2020–22 has completely vanished (Figure 1.3.1, panel 4).

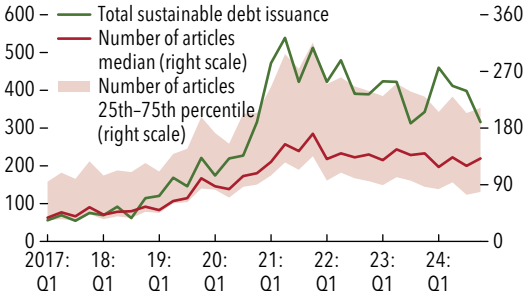
While these trends can be seen as a correction from peak levels around 2021, the slowdown in issuance of sustainable debt has left a widening financing gap. The Climate Policy Initiative (2024) estimates that $7.2 trillion is required annually through 2030 for mitigation and $0.2 trillion for adaptation.

This box was prepared by Deepali Gautam and Esti Kemp.

Figure 1.3.1. Climate Finance Developments

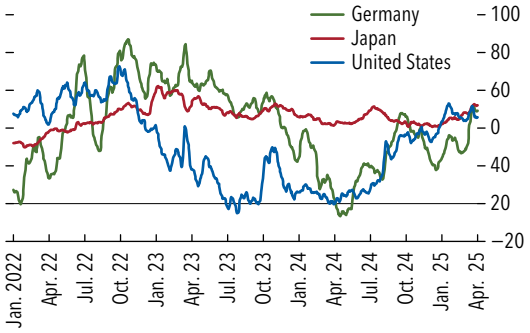
Global sustainable debt issuance has trended downward.

1. Number of Media Articles Focused on Climate Finance versus Quarterly Global Issuance
(Billions of dollars, left scale; index January 2020 = 100, right scale)



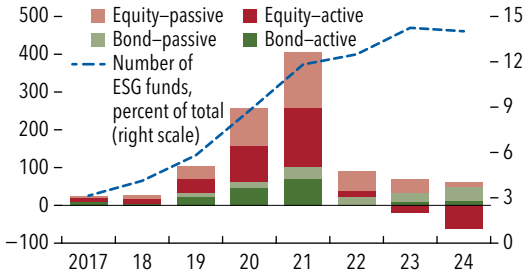
Differentials between the yields of regular bonds and those of green bonds remain below the levels in 2022.

2. Yield Differentials in Secondary Markets, Advanced Economies
(Basis points)



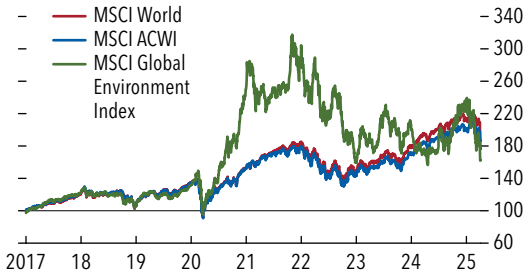
Net flows into ESG-related funds turned negative in 2024, as outflows from active-equity funds accelerated.

3. ESG-Related Fund Flows and Number of Funds as Percent of Total
(Billions of US dollars, left scale; percent, right scale)



Sustainable equities gave back all outperformances.

4. Relative Performance of Sustainable Equities
(Index, 1st Jan 2017 = 100)



Sources: Bloomberg Finance L.P.; EPFR; Haver Analytics; and IMF staff calculations.

Note: In panel 1, sustainable loans include green, social, sustainability, and sustainability-linked loans. The shaded area depicts the 25th through 75th percentiles of the number of media articles that include terms related to sustainable debt such as "climate finance," "green bonds," and "ESG." The number of sites in media articles are aggregated up to monthly values and then normalized such that January 2020 = 100. ACWI = All Country World Index, ESG = environmental, social, and governance.

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