

Chapter 1 at a Glance

- As the world continues to navigate the global pandemic, financial stability risks have been contained so far, reflecting ongoing monetary and fiscal policy support and the rebound of the global economy this year.** In recent months, however, investors have become increasingly concerned about the economic outlook amid rising virus infections and greater uncertainty about the strength of the recovery. After declining notably through the summer, global long-term yields have risen in late September, in some countries entirely reversing their earlier moves, on concerns that price pressures may be more persistent than initially anticipated. While investors still anticipate such pressures to moderate and gradually subside, risks to the inflation outlook appear to be skewed to the upside in many countries.
- Financial conditions in advanced economies have eased further, on net, since the April 2021 *Global Financial Stability Report*, buoyed by expectations that monetary policy will remain accommodative.** Notwithstanding some recent turbulence, equity prices have risen and credit spreads have continued to narrow, on balance, leading to stretched valuations in segments of financial markets. House prices have risen rapidly in many countries, boosted by policy support and shifting preferences.
- Despite some improvement during the recovery, financial vulnerabilities remain elevated in a number of sectors.** A sudden repricing of risk in markets, should investors reassess the economic and policy outlook, could interact with such vulnerabilities, leading to tighter financial conditions and putting growth at risk in the medium term.
- Financial conditions in emerging and frontier market economies are little changed, but the rapid spread of virus mutations and uneven access to vaccines pose a threat to the economic recovery.** Local currency yields remain elevated amid a significant increase in local currency issuance and inflation pressure in some countries. A sudden change in the monetary policy stance in advanced economies may result in high rates and a sharp tightening of financial conditions, adversely affecting capital flows and adding to debt sustainability concerns, especially for frontier markets.
- Credit conditions have improved in the corporate sector, albeit unevenly.** Corporate balance sheets have generally strengthened, and profitability has improved. Defaults and bankruptcies have declined, but differences persist across countries, firm sizes, and sectors. Solvency risks remain elevated in sectors hit hardest by the pandemic and for small firms. Tailored support to viable firms remains crucial. In China, credit conditions have tightened, particularly for firms with weak credit ratings and in provinces with weaker public finances, highlighting the urgency of comprehensive restructuring and reform efforts, including to gradually phase out implicit guarantees and to deal with financially weak state-owned entities.

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- **Banks have played a crucial role in supporting the flow of credit to the economy during the pandemic, but bank loan underwriting standards remain restrictive in many countries.** This posture is expected to persist, with loan officer surveys pointing to risks to the credit outlook as the main constraint to loan growth. This raises questions about the ability or willingness of banks to contribute to the recovery once financial and fiscal support measures are withdrawn. A slowdown in international bank credit flows would be particularly deleterious for emerging markets.
- **While monetary and fiscal policy support remains key to sustaining the ongoing economic recovery, it should be more targeted and tailored to country circumstances given the mixed pace of the recovery across countries.** Central banks should provide clear guidance about the future stance of monetary policy to avoid an unwarranted tightening of financial conditions. If price pressures turn out to be more persistent than anticipated, monetary authorities should act decisively to prevent an unmooring of inflation expectations. Fiscal support should shift toward more targeted measures and be tailored to country characteristics.
- **Policymakers should take early action and tighten selected macroprudential tools to target pockets of elevated vulnerabilities.** Given the possible need for prolonged policy support to ensure a sustainable recovery, policymakers should act to address potential unintended consequences of unprecedented measures while avoiding a tightening of financial conditions.
- **Emerging and frontier markets should rebuild buffers and implement structural reforms.** These countries remain exposed to the risk of a sudden tightening in external financial conditions. Rebuilding buffers and implementing long-standing reforms to boost structural growth prospects are key to cushioning the adverse impact of capital flow reversals and an abrupt increase in financing costs.

Navigating a World of Rising Uncertainties

The sense of optimism that had propelled markets in the first half of the year on the back of COVID-19 vaccine rollouts in advanced economies and the rebound in the global economy faded somewhat over the summer. Investors have become increasingly concerned about the global economic outlook amid greater uncertainty about the strength of the recovery. Uneven vaccine access has allowed further mutations of the virus, leading to a resurgence of infections and more divergent economic prospects across countries than anticipated earlier in the year (see the October 2021 *World Economic Outlook* [WEO]). The deterioration in market sentiment since the April 2021 *Global Financial Stability Report* (GFSR) resulted in a significant decline in global long-term nominal yields in the summer, driven by falling real rates. In late September, however, long-term nominal yields have moved higher on concerns that inflationary pressures may be more persistent than initially anticipated, in some countries entirely reversing their earlier moves.

Buoyed by expectations that central banks will maintain an accommodative policy stance for the

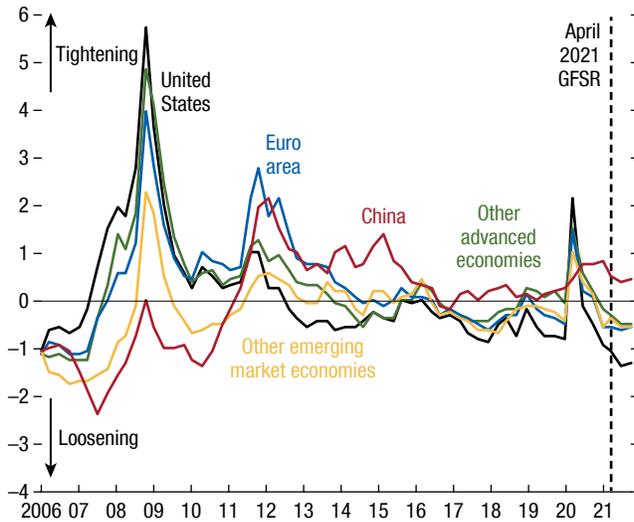
foreseeable future, financial conditions in advanced economies have eased further, on balance, since the April 2021 GFSR (Figure 1.1, panel 1). Despite recent market declines and increased volatility, equity prices have climbed, on net, supported by robust earnings. Credit spreads have remained tight, as investor concerns about pandemic-related defaults appear to be contained. House prices have risen rapidly in many countries, reflecting, among other factors, the improved economic outlook since the beginning of the pandemic, continued policy support, and shifting household preferences (Figure 1.1, panel 2). By contrast, financial conditions have changed little, on net, in emerging markets, as monetary policy tightening in several countries in response to domestic inflationary pressures has offset gains in risk asset prices.

Global financial stability risks have been contained so far, reflecting ongoing monetary and fiscal policy support and the anticipated economic recovery this year. Looking ahead, global GDP growth is forecast to decline in 2022, and the balance of risks to growth in 2022 is expected to remain skewed to the downside (Figure 1.2, panel 1). The probability of growth falling below zero next year is estimated at about 4 percent,

Figure 1.1. Financial Conditions

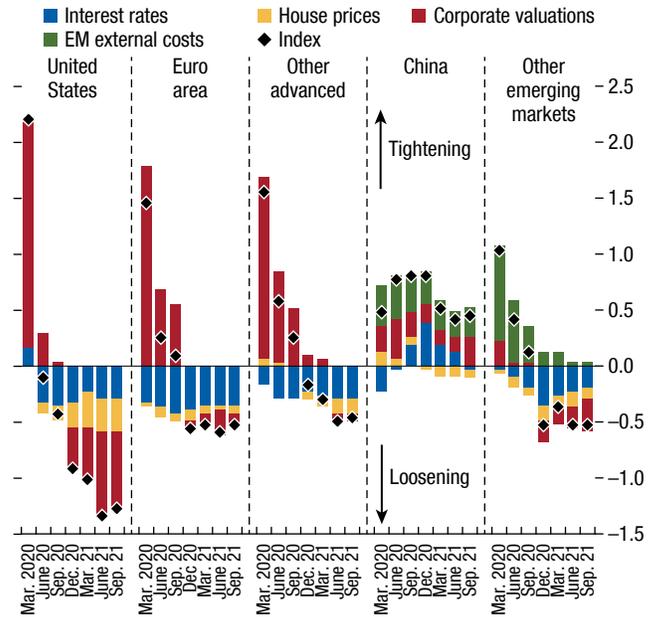
Global financial conditions have eased further, on net, since the April 2021 GFSR ...

1. Global Financial Conditions Indices (Standard deviations from the mean)



... driven by slightly lower interest rates and rising corporate valuations and housing prices, particularly in the United States.

2. Key Drivers of Financial Conditions Indices (Standard deviations from the mean)



Sources: Bloomberg Finance L.P.; Haver Analytics; national data sources; and IMF staff calculations. Note: EM = emerging market; GFSR = *Global Financial Stability Report*.

reflecting slightly elevated downside risks compared with historical norms (Figure 1.2, panel 2).¹

A year and a half into the COVID-19 pandemic, policymakers are confronted with a challenging trade-off: maintaining near-term support to the global economy while preventing unintended consequences and medium-term financial stability risks. A prolonged period of extremely easy financial conditions, while needed to sustain the economic recovery, may result in overly stretched asset valuations and could fuel financial vulnerabilities. Some warning signs—for example, increased financial risk-taking and rising fragilities in the nonbank financial institutions sector—point to a deterioration in underlying financial stability foundations. If left unchecked and not

¹The growth-at-risk framework employed here quantifies downside risks by gauging how the range of severely adverse growth outcomes (5th percentile of the growth distribution) shifts in response to changes in financial conditions and vulnerabilities (see Chapter 3 of the October 2017 GFSR for details). Assumptions pertaining to macroeconomic shocks and policy responses are captured in the growth-at-risk framework to the extent that they affect the current economic and financial conditions or the WEO baseline growth forecasts. Given the unprecedented nature of the current crisis, model-based growth-at-risk estimates are inevitably subject to larger-than-usual uncertainty bounds.

addressed, these vulnerabilities may evolve into structural legacy problems, putting medium-term growth at risk or testing the resilience of the global financial system.

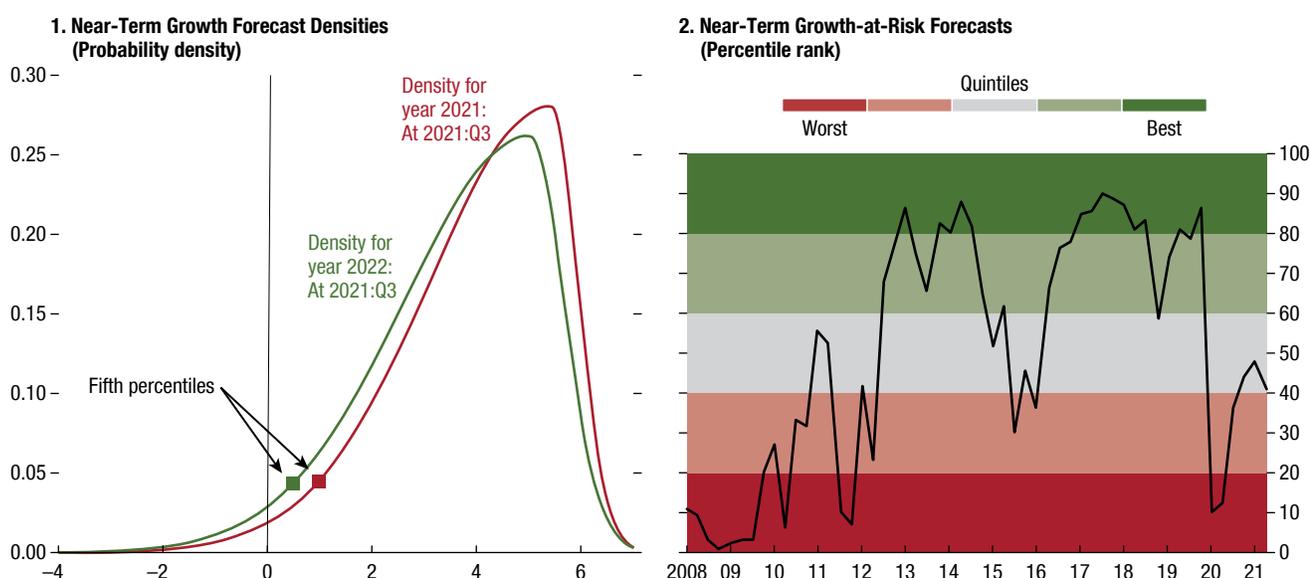
Despite some improvements, financial vulnerabilities continue to be elevated in a number of sectors, masked in part by massive policy stimulus (Box 1.1). While vulnerabilities have generally decreased in the financial system, the global banking sector and nonbank financial institutions continue to face challenges amid persistently low interest rates. Life insurance companies are still confronting significant asset-liability duration mismatches in many jurisdictions (Box 1.2). In the nonfinancial corporate sector, certain segments are burdened with debt overhang, and progress in strengthening firms’ balance sheets remains uneven. Near-term corporate solvency and liquidity risks are still elevated in sectors hit hardest by the pandemic as well as among small firms, both in advanced and emerging market economies.

The rebound in economic activity, supported by unprecedented policy measures, has provided an opportunity to invest in technologies expected to boost long-term growth potential—such as infrastructure, digitalization, and environmentally friendly renewable

Figure 1.2. Global Growth-at-Risk Forecasts

The decline in the global growth forecast for 2022 is accompanied by a modest increase in downside risks ...

... which are slightly elevated compared with historical norms.



Sources: Bank for International Settlements; Bloomberg Finance L.P.; Haver Analytics; IMF, International Financial Statistics database; and IMF staff calculations. Note: Forecast density estimates are centered around the October 2021 *World Economic Outlook* forecasts for 2021 and 2022, respectively. In panel 2, the black line traces the evolution of the 5th percentile threshold (the growth-at-risk metric) of near-term growth forecast densities. The color of the shading depicts the percentile rank for the growth-at-risk metric from 1991 onward. See the April 2018 *Global Financial Stability Report* for details.

energy—and to foster a more inclusive, greener global economy.² The difficulties in controlling the spread of the virus, however, appear to have dampened the initial enthusiasm among investors, as suggested by the sharp decline in forward real interest rates, signaling concerns about medium- to longer-term growth. While low long-term real interest rates support risk asset prices (for a given path of economic growth), a significant downgrade of economic prospects by investors could trigger a sharp decline in risk asset prices, tightening financial conditions. Such a scenario would be particularly difficult for a number of emerging markets, given their more limited monetary and fiscal policy space to cushion a slowdown.

Another risk to macro and financial stability comes from a reassessment of the inflation outlook. While price pressures continue to be viewed as largely driven by pandemic-related circumstances (such as supply disruptions, the surge in commodity prices, and shortages of key components and labor), concerns about inflation risks have intensified recently in financial markets.³

²See Chapter 3 of the October 2021 WEO.

³See the October 2021 WEO, Chapter 1 and Chapter 2.

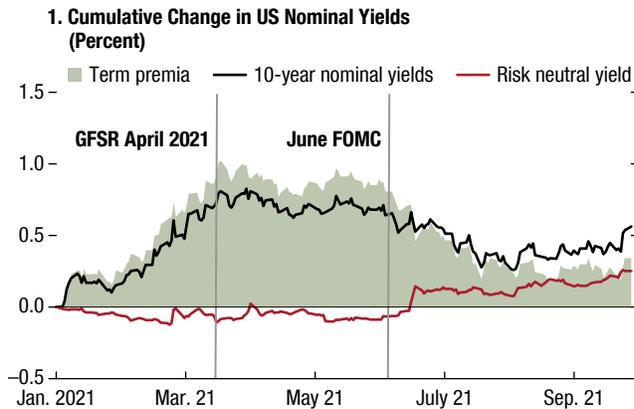
An abrupt, sustained increase in interest rates from low levels, particularly in the United States, could trigger a tightening of global financial conditions, interacting with existing financial vulnerabilities and resulting in a decompression of market volatility and a sharp fall in asset valuations. A pullback from risk-taking could spill over to emerging markets and adversely affect their ability to access global financial markets at a time when they face daunting financing needs to support the economy and when local currency yields have been on an upward trend.

Global Rates in Reverse: Understanding the Recent Moves in Nominal Yields

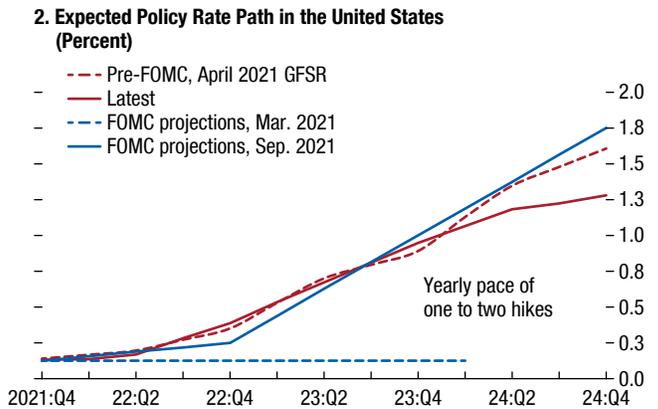
Global long-term nominal yields have been volatile, albeit little changed on net, since the April 2021 GFSR. After rising more than 80 basis points through the end of March, US 10-year nominal yields have dropped as much as 55 basis points in the summer on concerns about the strength of the recovery (Adrian and others 2021; Goel and Malik 2021). In late September, however, investor anxiety about inflationary pressures has pushed yields higher, with US 10-year yields only 27

Figure 1.3. US Bonds Pivoting to a Low-for-Long Scenario

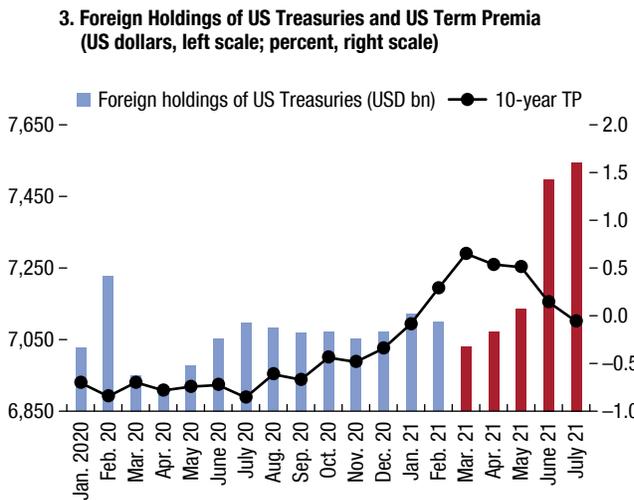
US nominal yields have declined sharply, despite a pickup in rate hike expectations.



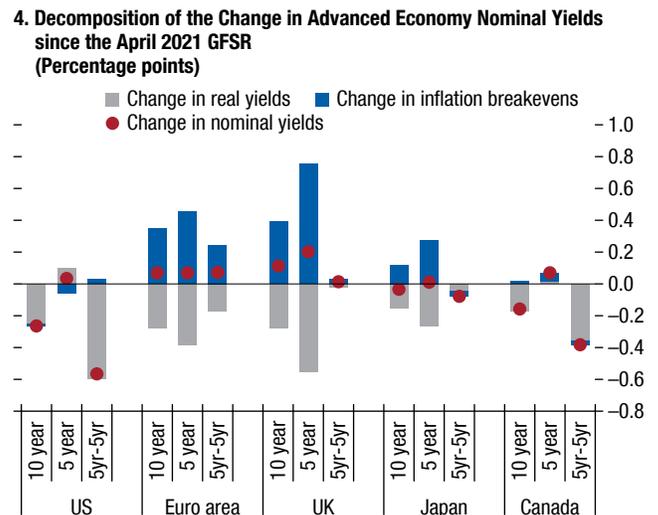
Markets expect a shallow policy rate path over the next few years.



The decline in term premia has coincided with a sharp rise in foreign demand for US Treasuries.



Real yields have declined significantly across most advanced economies.



Sources: Bloomberg Finance L.P.; Federal Reserve; and IMF staff. Note: bn = billion; FOMC = Federal Open Market Committee; GFSR = *Global Financial Stability Report*; TP = term premium; USD = US dollar.

basis points lower since the April 2021 GFSR. While term premia have fallen, on net, the expected path of monetary policy has moved up following the June Federal Open Market Committee (FOMC) meeting (Figure 1.3, panel 1).⁴ The Federal Reserve’s median projection of the policy rate has increased notably

since March, with the end-2023 projection of the federal funds rate at 1 percent. The market-implied policy rate path, however, is somewhat shallower (Figure 1.3, panel 2).

⁴Bond yields can be decomposed into the average expected short-term rates (or risk-neutral yields), and term premia—where the latter refers to the compensation required by investors for bearing risk of economic and policy uncertainty over the life of the bond. Term premia are, however, also affected by the relative supply of and demand for bonds. Decreased bond supply tends to deflate term premia; see Krishnamurthy and Vissing-Jorgensen (2012), Greenwood and Vayanos (2014), and Vayanos and Vila (2021).

The net downward trend in term premia seen since the April 2021 GFSR may be attributed, in part, to safe-haven flows into US Treasury securities. As investors’ concerns about the spread of the Delta variant have intensified, demand for safe, highly liquid US Treasury securities has increased, as can be seen in higher foreign holdings of these securities (Figure 1.3, panel 3) and greater flows into US nominal bond funds. These developments, in conjunction with a

possible reassessment of likely timing of the beginning of normalization in the United States after a recent weaker-than-expected data release, have likely put downward pressure on term premia. Through the end of September, debt ceiling negotiations in the United States have not left any material imprint on financial markets, notwithstanding some distortions in the US short-term Treasury market.

Real yields have declined significantly across most major advanced economies since the April 2021 GFSR (Figure 1.3, panel 4, gray bars).⁵ In the United States, the decline has occurred at the back end of the curve, with five-year–five-year forward real yields down 60 basis points, reflecting concerns about long-term-growth prospects.⁶ The decline in longer-term real yields is in line with the secular downward trend of real yields, associated with falling trend productivity growth. In other advanced economies, by contrast, the decline in real yields has been more evident at the five-year maturity. Inflation breakevens (a market-implied proxy of future inflation) have risen in some countries (for example, the euro area, Japan, and the United Kingdom) but remain at or below targets (Figure 1.3, panel 4, blue bars). Rising commodity, notably energy, prices have likely exerted some upward pressure on inflation (see Chapter 2 of the October 2021 WEO).

What Are Markets Telling Us about Risks to the Inflation Outlook?

After rising sharply from last year's lows, reflecting the ongoing economic recovery, five-year inflation breakevens in the United States and euro area have moved within a relatively tight range since the April 2021 GFSR (Figure 1.4, panel 1, solid lines, and panel 2; based on Goel and Malik 2021). A similar trend is evident for five-year linked securities, five-year forward inflation breakevens.

The increase in five-year forward inflation breakevens since the beginning of the pandemic has been considerably more contained, pointing to well-anchored long-term inflation expectations. Responses to surveys of inflation expectations at different horizons also suggest only limited pass-through to medium-term

⁵Nominal yields can also be decomposed into real interest rates and inflation breakevens.

⁶Five-year, five-year forward corresponds to a five-year period that begins five years from current date.

inflation expectations, in both the United States and Europe, even though expectations of near-term inflation have moved higher.

Price pressures are expected to moderate and then gradually subside, as evidenced by the downward sloping one-year forward inflation breakeven curve (Figure 1.4, panel 3). However, concerns about upside risks to the inflation outlook have intensified of late, especially in the United States. Investors have highlighted the possibility that supply chain disruptions and shortages of materials and labor may be more persistent than currently expected, possibly leading to an unmooring of inflation expectations (Adrian and others 2021). Market participants have also emphasized the risk that the recent surge in house prices (as is the case in many countries) may put upward pressure on inflation via rising housing rents.⁷ If inflation turns out to be more persistent than currently anticipated by investors and policymakers, inflation expectations could become unmoored. The reaction of monetary authorities would be closely scrutinized, especially for central banks that have recently introduced new frameworks, such as the Federal Reserve and the European Central Bank.

Likely reflecting these concerns, flows into inflation-protected securities have been relatively robust this year, notwithstanding a recent slowdown (Figure 1.4, panel 4).⁸ Pricing in options markets also suggests that investors are focused on inflation risks. The probability of inflation in the United States being greater than 2 percent (the central bank's target) over the next five years is more than 80 percent, increasing modestly since the April GFSR (Figure 1.4, panel 5). By contrast, investors appear to see inflation risks as more skewed to the downside in the euro area.

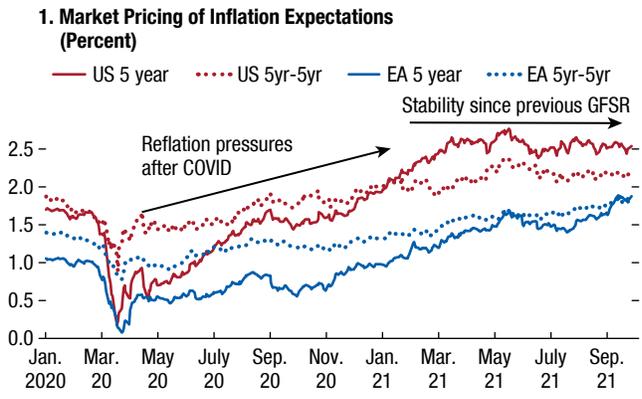
Price pressures are also evident in emerging markets. Inflation has risen about 1.5 percentage points above the median emerging market central bank

⁷As part of its strategy review, the Governing Council of the European Central Bank has decided to recommend a road map to include owner-occupied housing costs in its headline inflation measure—the Harmonized Index of Consumer Prices—to make it more representative. However, given the complexity of such a change, the road map foresees four stages that could be extended beyond 2026 before moving to a Harmonized Index of Consumer Prices including owner-occupied housing costs as the main index for monetary policy purposes (<https://www.ecb.europa.eu/home/search/review/html/inflation-measurement.en.html>).

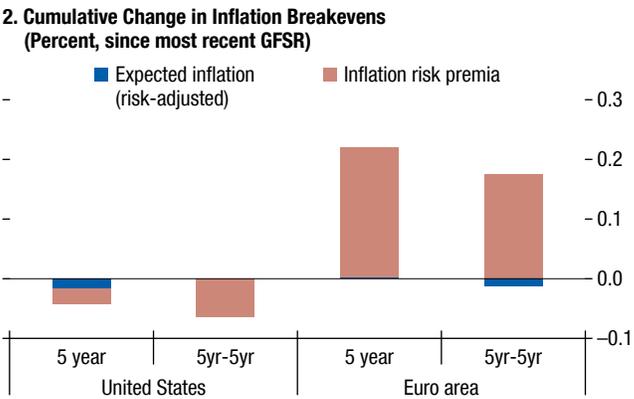
⁸See Chapters 1 and 2 of the October 2021 WEO.

Figure 1.4. What Markets Are Telling Us about Inflation

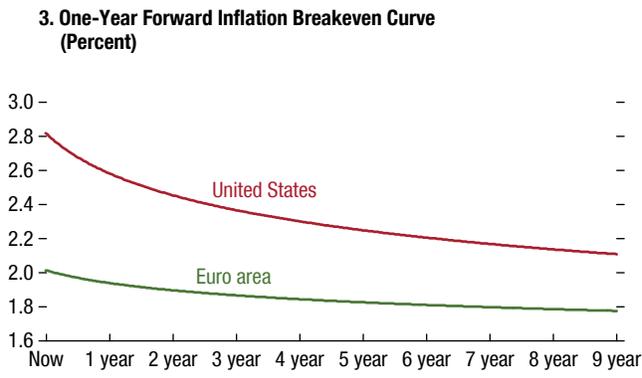
Five-year inflation breakevens for the US have moved within a relatively tight range since the April 2021 GFSR but increased significantly for the euro area.



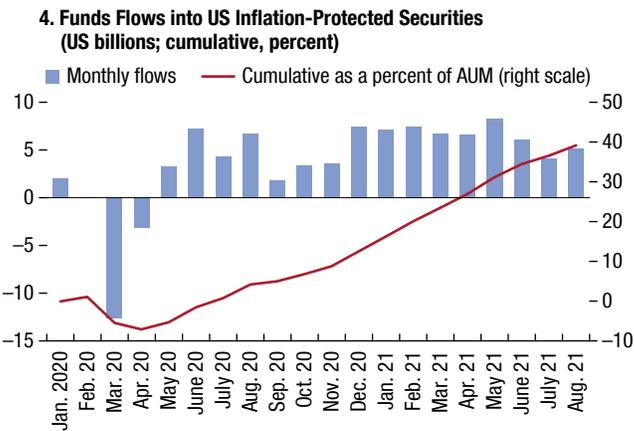
Estimates of expected inflation derived from breakevens have held fairly steady; however, risk premia have risen for the euro area.



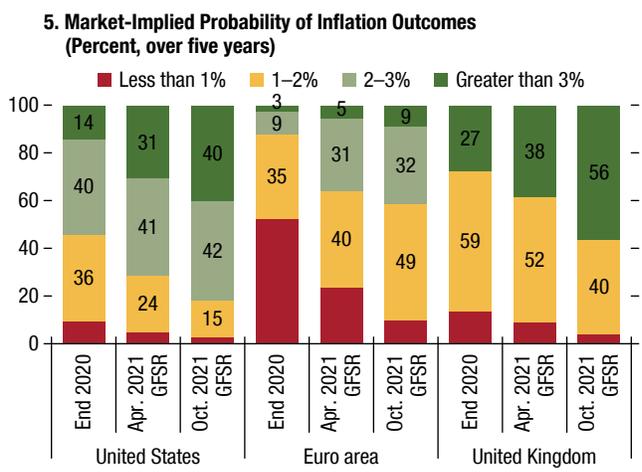
The forward inflation breakeven curve is inverted for both the US and euro area.



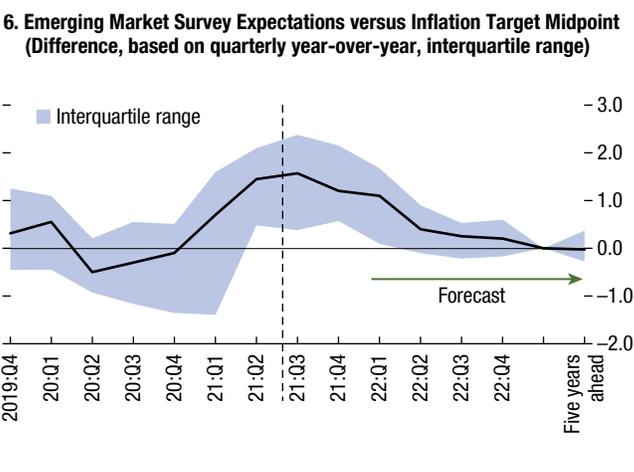
Concerns around US inflation are also reflected in robust flows into US inflation-protected securities.



Inflation options indicate that risks remain skewed to the upside for the United States and United Kingdom.



Emerging market inflation has risen above target, but forward-looking expectations remain well anchored.



Sources: Bloomberg Finance L.P.; Goel and Malik (forthcoming); Goel and others (2021); Haver Analytics; national authorities; and University of Michigan. Note: In Panel 1, the market pricing of inflation is derived using Treasury inflation protected securities for the US; and using inflation swaps for Euro Area. In Panel 5, the probabilities are derived using inflation caps and floors. In panel 6, the forecast is based on the survey consensus forecasts. AUM = assets under management; EA = euro area; GFSR = Global Financial Stability Report.

target (Figure 1.4, panel 6).⁹ However, forward survey estimates show that inflation is anticipated to start trending down soon and come within range over the next 6–12 months (for more details, see the “Emerging Market Local Assets Remain under Pressure” section). Survey responses, in fact, show that five-year-ahead expectations are well anchored for most emerging markets.

Emerging Market Local Assets Remain under Pressure

Local currency government bond yields for most emerging market economies have risen year to date and remain elevated despite the recent declines in US Treasury yields, reflecting the role played by domestic factors in local currency markets (Figure 1.5, panel 1).¹⁰ In the first quarter of this year the rise in bond yields for many emerging market economies was mostly because of higher term premia, but changes in long-term emerging market bond yields since the April 2021 GFSR have been driven primarily by an upward shift in policy expectations, reflecting tighter monetary policy in some countries (Figure 1.5, panel 2). An additional factor likely contributing to the upward pressure on yields and term premia is the significant increase in local currency issuance and broader fiscal risks for some countries amid weak nonresident flows (Figure 1.5, panel 3).¹¹ While overall stress in local currency bond markets has declined, conditions in some countries (mostly in Latin America) remain tense (Figure 1.5, panel 4).

By contrast, hard currency emerging market bond spreads have been relatively stable this year, after having recovered from their sell-off at the height of the COVID-19 pandemic. Spreads for frontier economies have changed little, on net (Figure 1.5, panel 1). Emerging market hard currency bond issuance has remained robust and is running at a record pace this year (surpassing the record in 2020). While sovereign

issuance is broadly in line with its pace in 2020, corporate issuance has been very strong, outperforming 2020 by almost 20 percent. A key exception is China, where corporate issuance has been weak, reflecting tighter credit conditions in certain segments (see the “Financial Vulnerabilities Remain Elevated in China” section). Robust global risk appetite has allowed many lower-rated frontier economies to access offshore markets since the April 2021 GFSR, including Cameroon, Pakistan, and Senegal, among others.

Managing a Gradual Withdrawal of Monetary Accommodation

Central bank balance sheets in advanced economies have grown considerably during the COVID-19 pandemic in an effort to ease financial conditions and maintain the flow of credit to households and firms. Monetary authorities have increased the assets held on their balance sheets to close to 60 percent of GDP, almost double the level prevailing before the pandemic (Figure 1.6, panel 1). Domestic monetary authorities and the foreign official sector now account for close to 40 percent of securities outstanding, even after accounting for the increase in the supply of government bonds to finance the fiscal response to the pandemic.

With the economy rebounding from the pandemic, investors anticipate that the Federal Reserve will commence the policy normalization process in the coming months, with other central banks in advanced economies having already started and more likely to follow suit this year or the next. During this process, a key financial stability challenge faced by the monetary authorities will be to avoid an unwarranted tightening of financial conditions that may hurt the recovery. At this point, there is significant uncertainty about the effect on asset prices, in particular bond term premia, given the larger role central banks play in sovereign bond markets, the anticipated increase in supply, and diverging monetary policy cycles across countries.

Historical precedents may not be a helpful guide, given the paucity of examples, the large size of central bank balance sheets, and the compressed level of term premia. On one hand, for example, a sudden reassessment of the outlook for monetary policy could trigger a spike in volatility and a sharp upward move in term premia, as witnessed during the 2013 “taper tantrum” episode (Figure 1.6, panel 2). On the other hand, the Federal Reserve’s 2014 previous tapering episode was

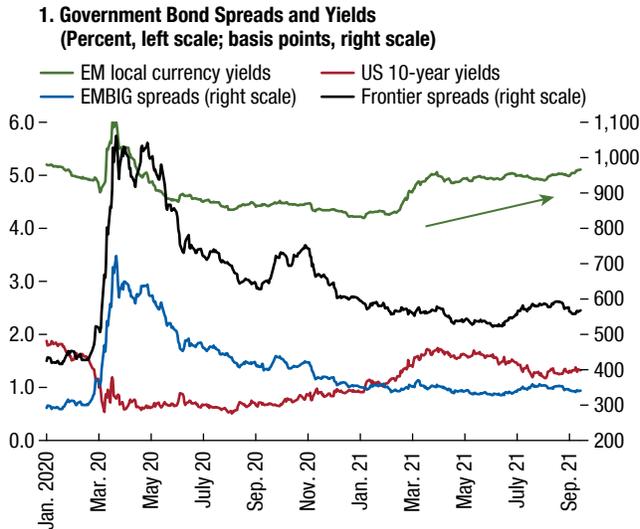
⁹Up to 2 percentage points for the upper end of the interquartile range. Inflation pressure is also quite broad-based, as inflation is above target for almost 60 percent of emerging markets.

¹⁰Analysis in Chapter 1 of the 2020 GFSR and Goel and Papageorgiou (forthcoming) indicate that local currency funding costs are more sensitive to domestic fundamentals and growth than hard currency spreads (which are found to be more sensitive to external risk sentiment).

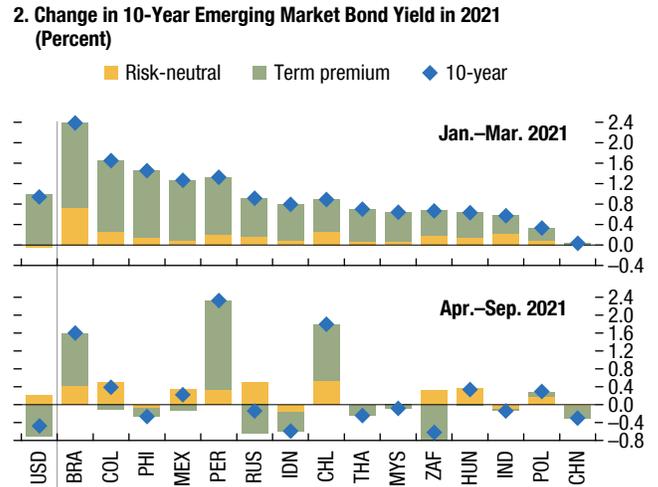
¹¹Fiscal risks include the size of the fiscal deficit and uncertainties about fiscal policies.

Figure 1.5. Local Currency Bond Market Developments

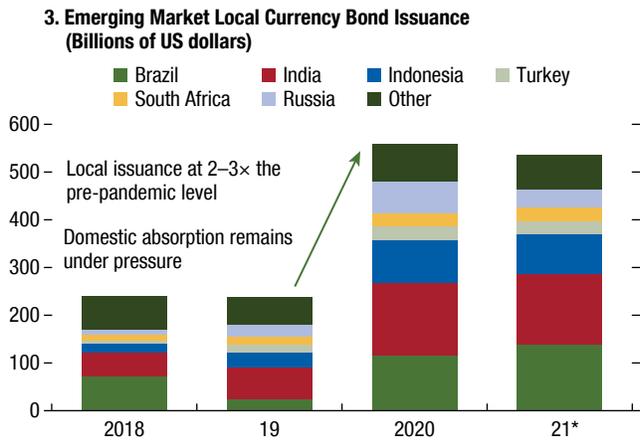
Local currency bond yields remain elevated despite the decline in US rates ...



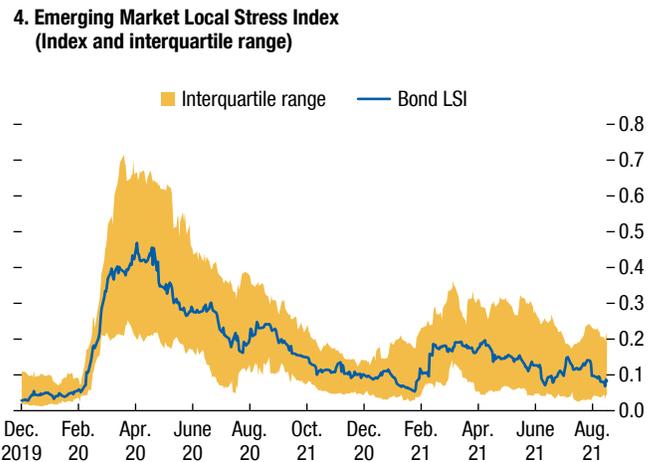
... mostly driven by policy rate expectations more recently, with some exceptions.



Local currency issuance has increased significantly, reflecting high fiscal needs.



Liquidity and stress conditions in bond markets have improved overall, but with some outliers.



Sources: Bloomberg Finance L.P.; JPMorgan Chase & Co.; national authorities; and IMF staff estimates.
 Note: In panel 4, the stress index captures the market stress for local currency bonds (the methodology is detailed in the October 2020 *Global Financial Stability Report*). In panel 3, 2021* is an issuance estimate for the whole year (based on market analysts' forecasts). Data labels use International Organization for Standardization (ISO) country codes. EM = emerging market; EMBIG = Emerging Market Bond Index Global; LSI = local stress index.

associated with a decline in term premia, although the macroeconomic backdrop was different.

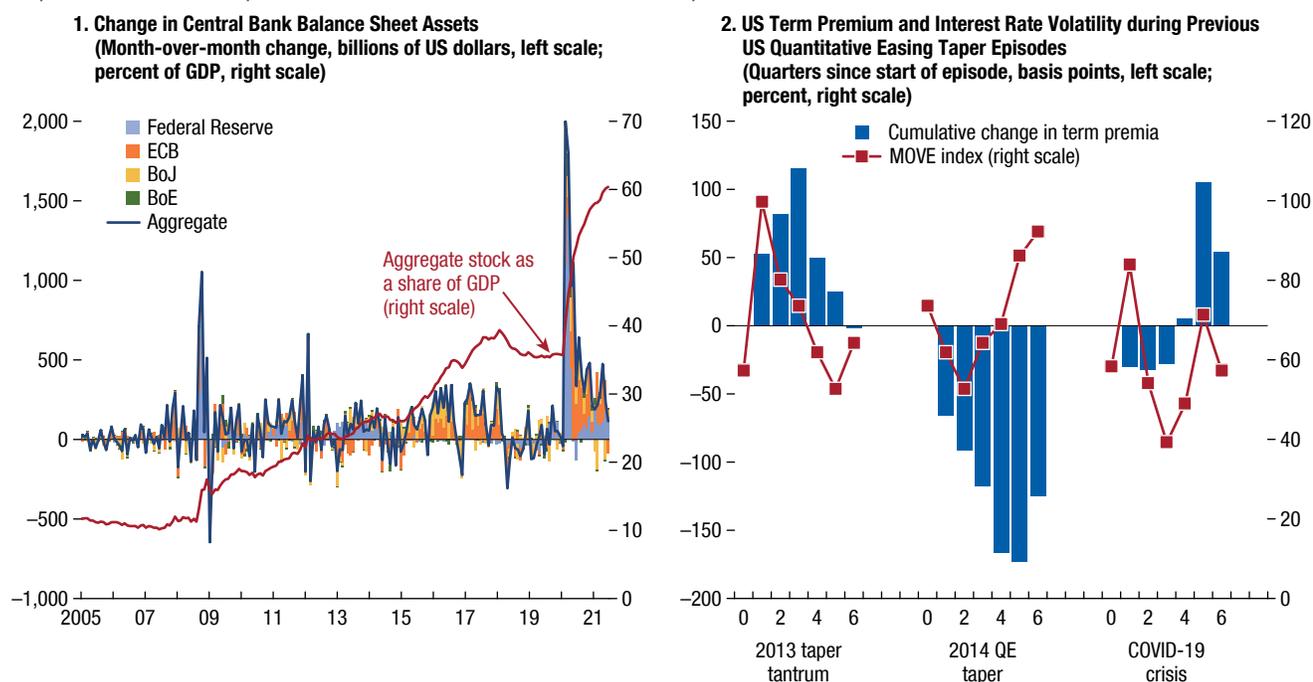
The unprecedented easing in global financial conditions during the pandemic has resulted in a collapse in volatility across asset classes, encouraging investors to take on more risk (Figure 1.7, panel 1). In global equity markets, notwithstanding recent market turbulence, equity prices have risen further on net since the April 2021 GFSR, boosted by extremely

low and declining real rates and strong earnings. However, equity price misalignments (relative to fundamentals-based values) have remained elevated in most markets (Figure 1.7, panel 2). Meanwhile, reflecting the varying impact of the recovery on different sectors of the economy, sectoral equity valuations have diverged since late March (Figure 1.7, panel 3). In the corporate bond market, credit spreads—a market-based measure of default risk—have remained tight, reflecting

Figure 1.6. Central Bank Balance Sheets, Monetary Policy Cycles, and Tapering Expectations

Central bank balance sheets have expanded to unprecedented levels in response to the COVID-19 pandemic.

Term premia and volatility have reacted differently during past episodes.



Sources: Bloomberg Finance L.P.; Haver Analytics; and IMF staff calculations.
 Note: In panel 2, the MOVE index is a yield-curve-weighted index of implied volatility on one-month Treasury options. BoE = Bank of England; BoJ = Bank of Japan; ECB = European Central Bank; QE = quantitative easing.

investors' benign view of the credit outlook amid ample liquidity and continued policy support.

Investors appear to have become somewhat more cautious, especially in recent weeks, demanding more protection against large declines in risk markets amid increased uncertainty about the economic outlook (Figure 1.7, panel 4). Elevated equity valuations and increased sensitivity of equity prices to government bond prices suggest that equity markets may reprice substantially in the event of a sudden reassessment of the economic outlook or unexpected policy changes, as evidenced in September.

A Tough Act for Monetary Policy in Emerging Markets

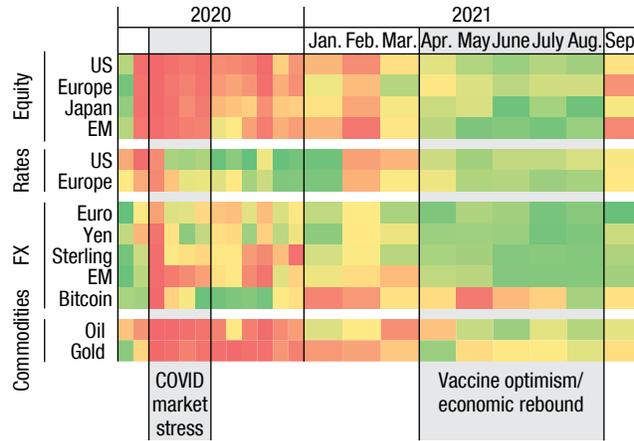
Price pressures are also evident in some emerging markets, reflecting a combination of factors, including higher commodity and food prices as well as weaker nominal exchange rates. As in advanced economies, the increase in inflation in emerging markets is

expected to be temporary, according to inflation surveys (Figure 1.8, panel 1, red line). Nevertheless, concerns about perceived as being behind the curve in addressing price pressures, the implications of possible domestic currency depreciation, and weak local currency portfolio flows have led some emerging market central banks to adopt a tighter monetary policy stance. Since the April 2021 GFSR, the central banks of Angola, Brazil, Chile, Colombia, Hungary, Mexico, Peru, and Russia, among others, have hiked policy rates, while others have left the door open for similar actions in coming months. Investors now appear to be pricing in a rapid and fairly sharp tightening cycle for many emerging markets, with the median two-year forward policy rate currently at 4.7 percent compared with 3.3 percent at the time of the April 2021 GFSR (Figure 1.8, panel 1, green line). The significantly steeper expected policy path for emerging markets compared with the United States reflects their sensitivity to monetary policy normalization in advanced economies, concerns over potential unanchoring of

Figure 1.7. Cross-Asset Volatility and Valuations of Risky Assets

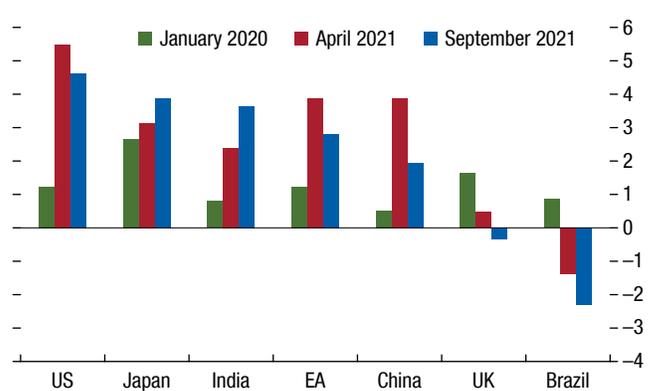
Cross-asset volatility declined before the recent market reversal.

1. Cross-Asset Implied Volatility (Percentile rank since 2003)



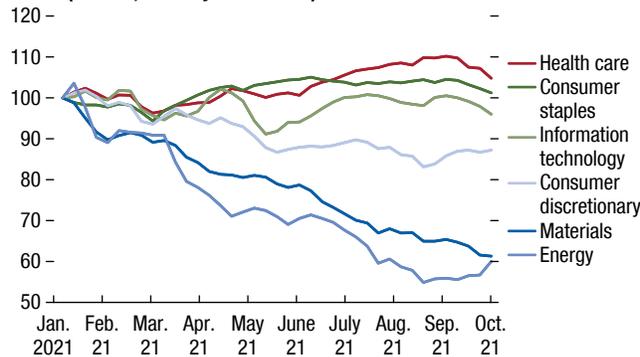
Price misalignments have remained broadly elevated in equity markets.

2. Global Equity Markets: Price Misalignments (Relative to fundamentals; standard deviations of monthly returns)



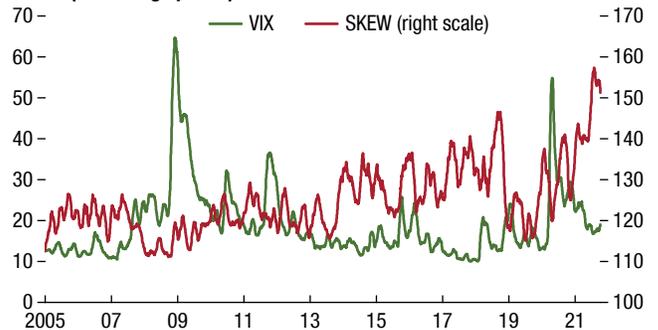
Sectoral valuation metrics have diverged on falling interest rates since March.

3. Global Equity Markets: Forward Price-to-Earnings Ratios by Sector (Indices; January 2021 = 100)



Investors have demanded more downside risk protection as risky assets remain at high levels.

4. US Stock Market Implied Volatility Measures (Percentage points)



Sources: Bloomberg Finance L.P.; Thomson Reuters Datastream IBES; and IMF staff calculations.

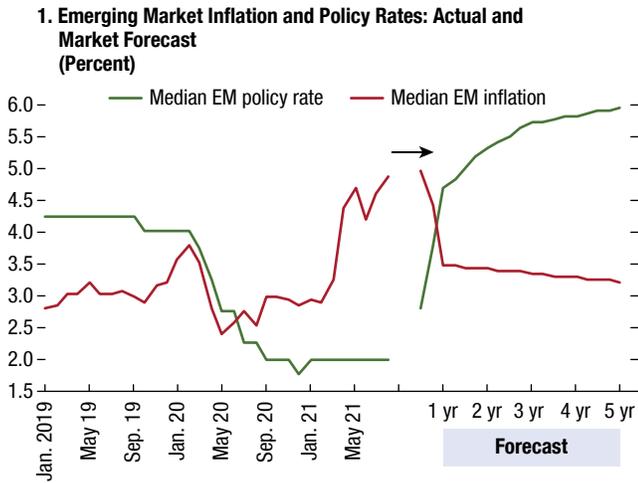
Note: In panel 1, Bitcoin is based on the percentile rank of 30-day realized volatility since 2011. In panel 2, fundamentals include the mean of analysts' forecasts of future earnings, the dispersion in analysts' forecasts of future earnings, and measures of interest rates. See Online Annex 1.1 of the October 2019 *Global Financial Stability Report* for details. Unit of risk is the standard deviation of monthly returns; values above 2 point to substantial overvaluation. In panel 4, SKEW measures the implied volatility of out-of-the-money options on the S&P 500, estimating the perceived "tail risk." Tail risk is associated with market price declines of more than two standard deviations below the mean. A SKEW value of 100 indicates a low probability of a large market decline. A higher level of SKEW implies higher tail risk. EA = euro area; EM = emerging market; FX = foreign exchange; VIX = Chicago Board Options Exchange Volatility Index.

inflation expectations, the strength of the US dollar, and fears of portfolio outflows from local currency bond markets if rate differentials narrow. Asset purchases by some central banks at the height of the pandemic to lessen stress in local currency bond markets pose an additional complication in managing normalization. Most asset purchase programs have now ended or are winding down, but central banks still hold a significant amount of assets on their balance sheets.

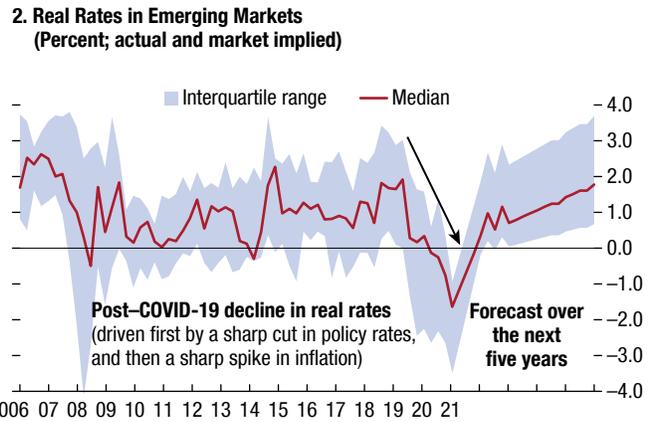
Looking ahead, the stance of monetary policy should continue to be informed by specific country circumstances—including the evolution of the pandemic and available policy space, the inflation and economic outlook, the risk of cross-border spillovers, and financial stability considerations. A preemptive tightening of monetary policy may help prevent a possible unanchoring of inflation expectations (as argued in Chapter 2 of the October 2021 WEO) and

Figure 1.8. Developments in Emerging Markets and Low-Income Countries

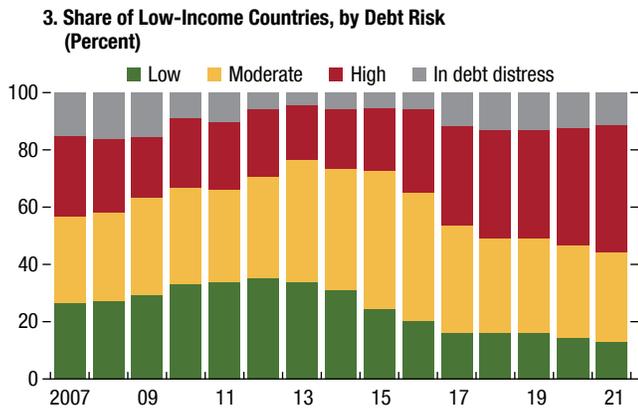
Many emerging market central banks have hiked policy rates.



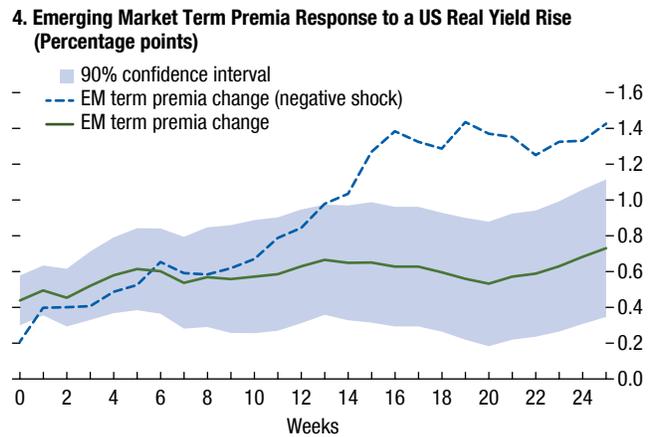
Market pricing of policy rates implies that real rates could rise significantly over the next few years.



Almost 60 percent of low-income countries are already in or near high debt distress.



A hawkish surprise in the United States can push emerging market term premia.



Source: IMF staff calculations.

Note: In panels 1 and 2, the forecast is based on the survey consensus forecasts. In panel 4, the emerging markets term premia spillover analysis is based on a sample of 16 economies (see also the April 2021 *Global Financial Stability Report*). EM = emerging market.

safeguard the credibility of the central bank. So far, despite the recent hikes, monetary conditions remain broadly stimulative, with real rates deeply negative and supportive of growth. There is a risk, though, that real rates may rise significantly in coming years. The combination of a very rapid policy tightening cycle (in line with market pricing) and declining inflation expectations (based on surveys) suggests that term real rates may return to their precession levels fairly quickly in some countries, and even rise to historic highs in some cases over the next few years (Figure 1.8, panel 2).

Given the considerable slack in some economies, with output gaps persisting through 2024 according to IMF staff estimates (see the October 2021 WEO), a rapid tightening of domestic financial conditions could adversely affect the nascent recovery (see the July 2021 WEO *Update*). In the absence of a strong recovery, higher bond yields could lead to notably higher debt servicing costs and raise debt sustainability concerns. This consideration is especially relevant for low-income countries, many of which are already in or near debt distress (Figure 1.8, panel 3).

The tightening in domestic monetary conditions could be amplified should the normalization process in advanced economies be accompanied by a sudden sharp rise in global rates, especially in the United States. IMF staff analysis shows that emerging market term premia could rise by almost 140 basis points over 16 weeks in the event of a 100 basis point rise in US 10-year real yields following a hawkish surprise—proxied by a dummy variable in which the S&P 500 equity index falls while real rates rise (Figure 1.8, panel 4).¹² In recent months emerging market bond yields have increased relative to the yield on equivalent maturity US Treasuries, primarily on the back of domestic developments (higher inflation and fiscal concerns). Now, the increase in US Treasury yields in late September has the potential to add to this pressure.

Lower Risks to Emerging Market Capital Flows Expected in the Near Term

Overall, the outlook for portfolio flows has improved, boosted by the ongoing economic recovery and robust global risk sentiment (Figure 1.9, panel 1; see Chapter 1 of the April 2020 GFSR for the methodology).¹³ But the tale of two emerging market capital flow trends continues (Figure 1.9, panel 2; Goel 2021). Hard currency issuance has rebounded strongly, with many lower-rated issuers (including Cameroon, Mongolia, and Pakistan) returning to capital markets since the April 2021 GFSR (Figure 1.9, panel 3). Local currency debt flows to China have continued to be strong, with cumulative flows of \$50 billion year to date. Emerging market equity flows have also recovered since late last year, albeit at a modest pace. By contrast, emerging market (excluding China) local currency debt flows have not recovered from the weakness in the first quarter and remain a weak spot. Cumulative local currency debt flows (excluding China) since January 2020 remain negative, down by more than \$20 billion, compared with the record \$250 billion cumulative hard currency issuance for emerging market sovereigns.

Behind the aggregate weakness of local currency debt flows, there is wide variation among countries.

¹²The specification here attempts to evaluate the impact on emerging market term premia from the increase in US real rates seen during the May 2013 taper tantrum.

¹³Capital flows at risk (5th percentile of the predicted distribution) have declined from 2.1 percent of GDP at the end of 2020 to 1.7 percent of GDP.

Colombia and Malaysia have seen strong inflows this year, while Mexico, Poland, and South Africa are notable laggards (Figure 1.9, panel 4). A concern among investors is that the local currency flows have not recovered despite robust global risk sentiment. Flows have not benefited from the rise in policy rate expectations and remain highly sensitive to the growth outlook over the next few years. This suggests that a divergent global recovery will likely continue to weigh on local currency debt flows.¹⁴

The growing role played by China in the emerging market flow landscape may continue to present a challenge to other emerging markets. China's inclusion in global benchmark indices (Chen, Drakopoulos, and Goel 2019) has led to significant inflows, estimated at \$180 billion since 2020. Furthermore, China's sovereign credit rating is significantly higher than that of other emerging markets and has remained stable throughout the pandemic, unlike other emerging markets that have seen record credit rating downgrades (led by the Latin American and sub-Saharan African regions). This puts benchmark-driven investors—key players for emerging markets (excluding China)—at risk.¹⁵ Other factors may support flows to China, even after adjusting for index-inclusion flows. China's earlier recovery compared with that of other emerging markets has resulted in a sharp divergence in domestic growth and fiscal pressures, despite concerns about the impact of recent virus mutations (Figure 1.9, panel 5).

The changing investor base in emerging markets poses risks but also presents an opportunity to strengthen domestic local capital markets¹⁶ and attract new investor types. Against a backdrop of elevated fiscal needs and weak nonresident flows, domestic investors have come to play an increasingly important role as marginal investors in the local currency bond markets. Domestic banks initially, and nonbank

¹⁴In line with analysis in Chapter 1 of the April 2020 GFSR and Goel and Papageorgiou (forthcoming), which finds local currency debt flows to be more sensitive to domestic fundamentals and growth than hard currency debt flows (which are more sensitive to external risk sentiment).

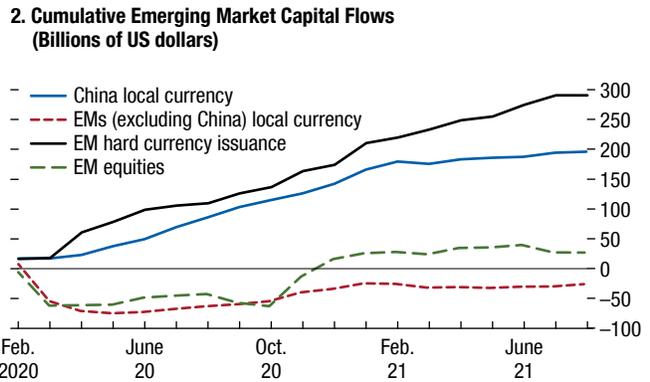
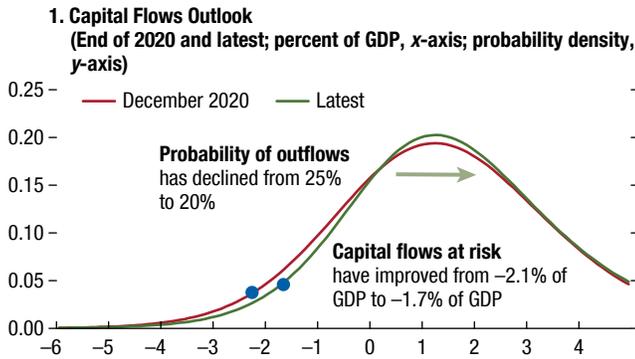
¹⁵Benchmark-driven investors may either (1) move out of countries seeing rating downgrades or (2) invest more in countries with better fundamentals and a better outlook. These types of investors are becoming very important for emerging markets, with more than \$900 billion in assets under management (Chapter 1 of the October 2019 GFSR; Arslanalp and others 2020).

¹⁶Development of domestic financial markets may reflect fiscal dominance concerns in some cases; thus, the opportunity is likely to be greater when the private sector also benefits from the flows.

Figure 1.9. Capital Flows

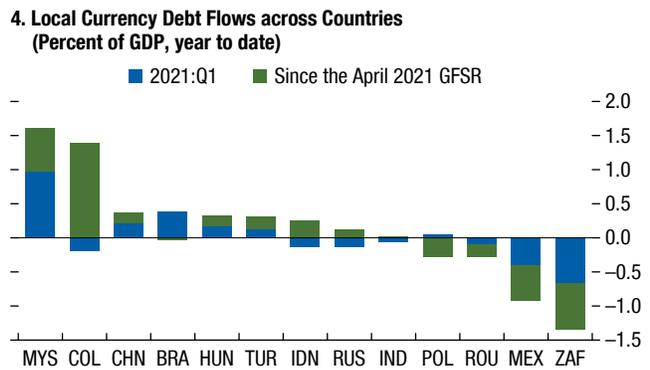
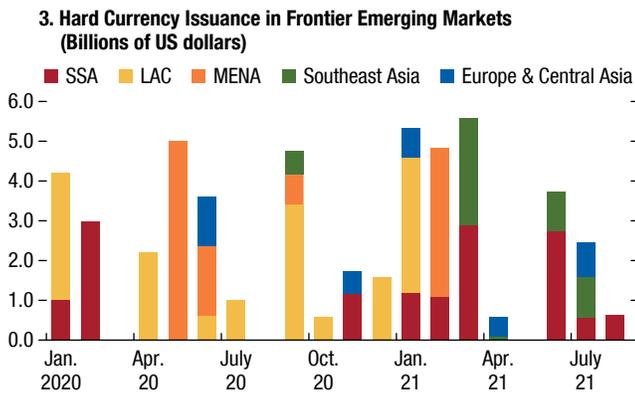
The capital flows outlook has improved, based on the benign risk sentiment and return of growth.

Emerging market (excluding China) local bond flows remain weak.



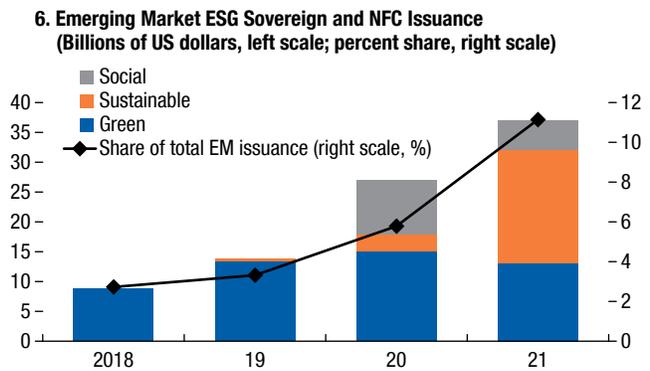
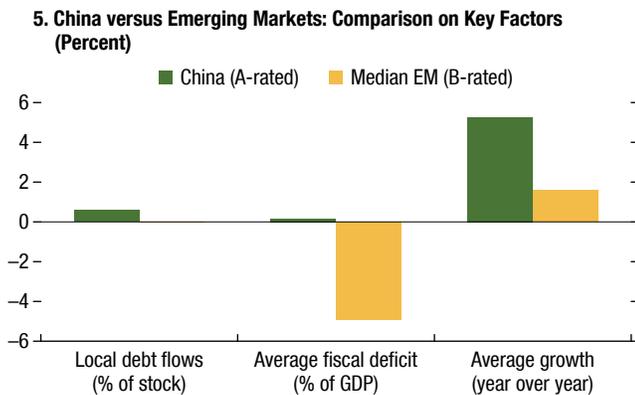
Hard currency bond issuance in frontier market economies continues.

Local currency debt flows vary significantly across countries ...



... particularly between China and other emerging markets.

Sustainable debt issuance has picked up sharply in emerging markets.



Sources: Bloomberg Finance L.P.; Bond Radar; Goel (2021); Institute of International Finance; and IMF staff calculations.

Note: In panel 1, the capital flows at risk estimate is based on the methodology discussed in the April 2020 *Global Financial Stability Report*, Chapter 3. For panel 4, 2021 is partial data through August. For panel 5, average fiscal deficit and average growth is averaged over the next three years. Data labels use International Organization for Standardization (ISO) country codes. EM = emerging market; ESG = environmental, social, and governance; GFSR = *Global Financial Stability Report*; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; NFC = nonfinancial corporations; SSA = sub-Saharan Africa.

financial institutions more recently, have absorbed an increasing portion of domestic debt across major emerging markets (see the April 2021 GFSR), highlighting the risk of the financial-sovereign nexus in some countries.¹⁷

Flows to emerging markets, driven by environmental, social, and governance factors, have grown significantly, even during the pandemic (Figure 1.9, panel 6), although they remain relatively small as a share of total flows (see Chapter 3). Recent proposals, including by the World Bank,¹⁸ suggest that the emphasis should be on the impact of investments, rather than on the environmental, social, and governance score of issuers (which are highly correlated with income levels). These considerations offer an opportunity for emerging markets to commit to investment oriented toward environmental, social, and governance factors to secure steady capital flows. Transition finance—for example, sustainability-linked debt focusing on environmental, social, and governance targets—could become a source of capital for issuers looking to fund long-term improvement strategies.

Credit Risks Have Abated, albeit Unevenly, in the Corporate Sector

In the corporate sector, conditions have generally improved in both advanced and large emerging market economies since the April 2021 GFSR. Corporate revenues have risen, supported by the global recovery and ongoing policy support, and profitability prospects have brightened, surpassing pre-pandemic levels in several economies (Figure 1.10, panel 1). The recovery, however, has been uneven. Near-term solvency and liquidity risks have remained elevated in sectors hit most by the pandemic, such as transportation and services in advanced economies (Figure 1.10, panel 2).¹⁹ By country and firm size, solvency risk has generally fallen since the worst period of the pandemic, but the improvement has been more evident for large firms, while solvency risk has risen in some advanced and emerging market economies, especially among small firms (Figure 1.10, panel 3).

Credit quality in the speculative-grade bond market has continued to strengthen, although with sectoral differentiation, while credit rating upgrades have exceeded downgrades this year. After a sharp decline, US speculative-grade default rates are anticipated to remain low (Figure 1.10, panel 4). As discussed in previous GFSRs, the sharp increase in corporate debt by high-yield bond issuers and by other weak firms remains a key vulnerability, especially if corporate earnings should weaken and effective interest costs rise.

A substantial pickup in bankruptcies has not materialized so far, thanks to targeted fiscal support and unprecedented monetary policy. In the United States, bankruptcies of large and medium-sized firms have declined, with notable sectoral differences (Figure 1.11, panel 1). Bankruptcies of small firms have also fallen (Figure 1.11, panel 2).²⁰ A similar trend decline in bankruptcies is evident in Japan, thanks to policy support. In contrast, bankruptcies have been rising in Europe—with notable differentiation across countries—despite the ongoing recovery in the region, likely reflecting in part the backlog as a result of court closures and a legal pause on insolvencies in some countries.

Progress in the corporate sector may stall or even reverse should the reopening of the economy be substantially delayed by new COVID-19 variants or if policy support proves to be inadequate or is withdrawn prematurely. Small firms are particularly vulnerable, given that they rely predominantly on bank lending (which could be cut in the event of a deterioration of the outlook) and are more dependent on both direct fiscal support to firms and on banking-sector-specific policy support, such as loan guarantees and deferred interest costs.

Robust merger and acquisition activity this year is expected to support consolidation among small and medium-sized firms (Figure 1.11, panel 3). In addition, private debt funds have continued to expand during the pandemic, accumulating close to \$400 billion in dry powder (funds ready to be deployed), and could potentially provide a funding source for distressed and smaller firms (Figure 1.11, panel 4).

¹⁷Chapter 1 of the April 2020 GFSR and Goel and Papageorgiou (forthcoming) show that when there is a higher proportion of foreign investors, local currency funding costs decrease.

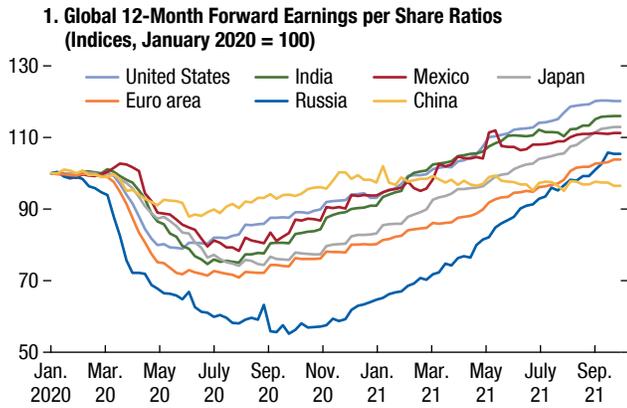
¹⁸See World Bank (2020).

¹⁹See the April 2021 GFSR for the methodology on the corporate solvency and liquidity risk analysis.

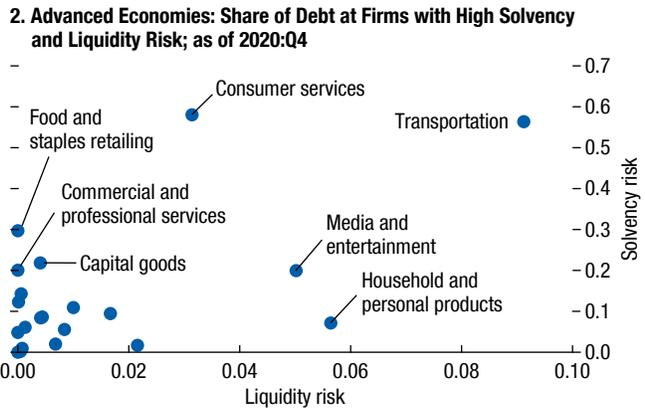
²⁰The number of general restructurings—which had expanded during the pandemic, often in lieu of liquidations—has dropped in recent months, while liquidations and partial restructurings of micro firms have remained below pre-pandemic levels.

Figure 1.10. Corporate Balance Sheets amid Concerns about Inflation and Higher Rates

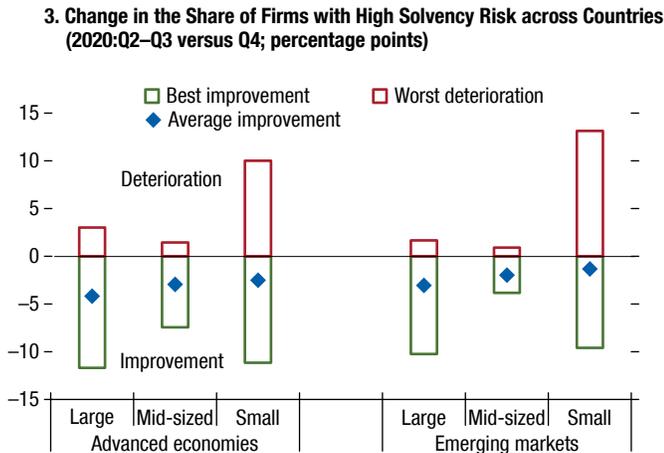
Corporate profitability prospects have improved, albeit at a different pace across economies ...



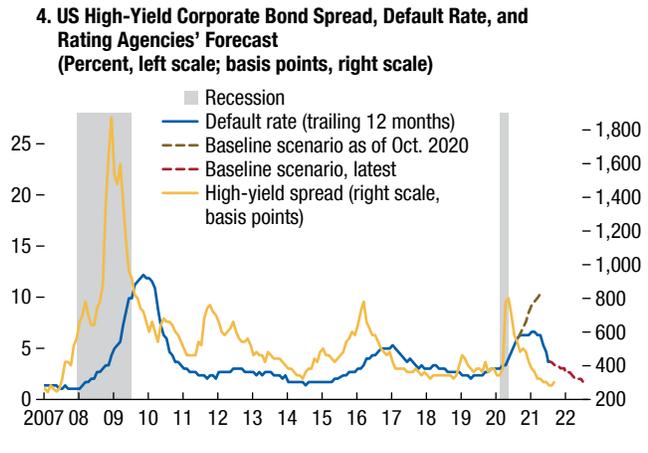
... and several sectors continue to face solvency and liquidity risks in the near term.



Solvency risk has declined since the height of the pandemic, but less so for small firms.



Default rates are set to remain low, based on rating agencies' projections and on credit spreads.



Sources: Bloomberg Finance L.P.; BofA Securities; Fitch Ratings; Haver Analytics; Moody's Investors Service; Morgan Stanley; S&P Capital IQ; S&P Global Ratings; Thomson Reuters Datastream IBES; and IMF staff calculations.

Note: In panels 2 and 3, solvency risk and liquidity risk are defined based on sets of balance-sheet and market-based indicators described in Online Annex 1.1 of the April 2021 *Global Financial Stability Report*. In panel 4, "Baseline scenario" is the average of default rate forecasts by three rating firms (Fitch, Moody's, and S&P), and each forecast is in line with the firms' macroeconomic forecasts.

Financial Vulnerabilities Remain Elevated in China

Financial vulnerabilities have risen further in China during the pandemic. As shown in Box 1.1, they remain elevated across various sectors, including nonfinancial firms, households, banks, and asset managers. Total social financing, excluding government bonds, had increased to about 230 percent of GDP as of June 2021, up 15 percentage points from the end of 2019. A few state-owned entities defaulted toward the end of 2020, leading investors to reevaluate the assumption of an all-encompassing implicit

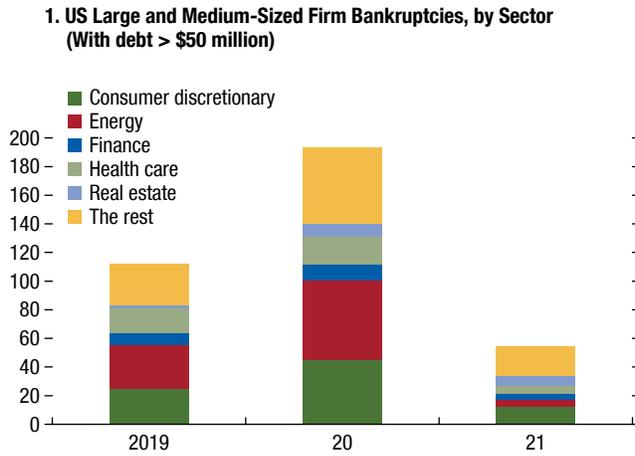
guarantee for such firms and prompting somewhat greater differentiation of expected state support at the regional level.²¹

Corporate credit conditions have tightened amid moderating overall credit growth. The tightening has been more pronounced for private and state-owned entities located in provinces with relatively high public debt and/or large fiscal deficits, or with recent local state-owned-enterprise bond defaults, partly

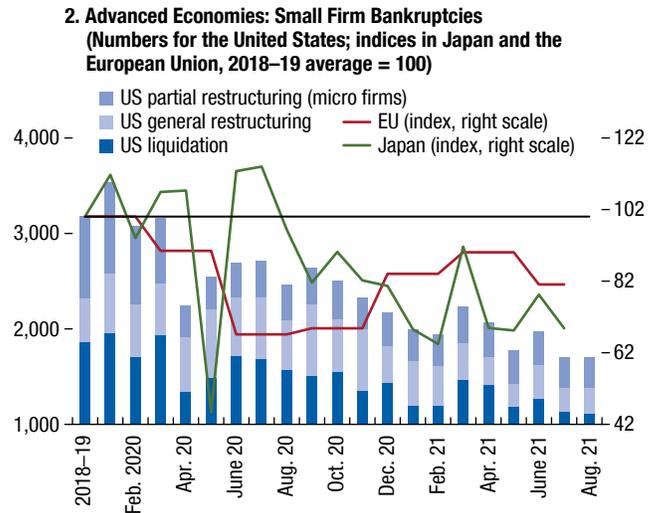
²¹State-owned entities accounted for about half of total onshore corporate bond defaults in 2020–21, up from about 10 percent in 2017–19, while the bond default rate is still very low at 0.7 percent.

Figure 1.11. Corporate Bankruptcies and Consolidation

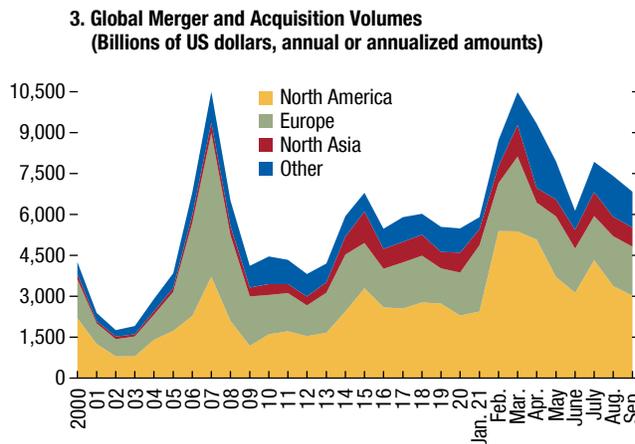
Bankruptcies of large and medium-sized firms in the United States have dropped substantially.



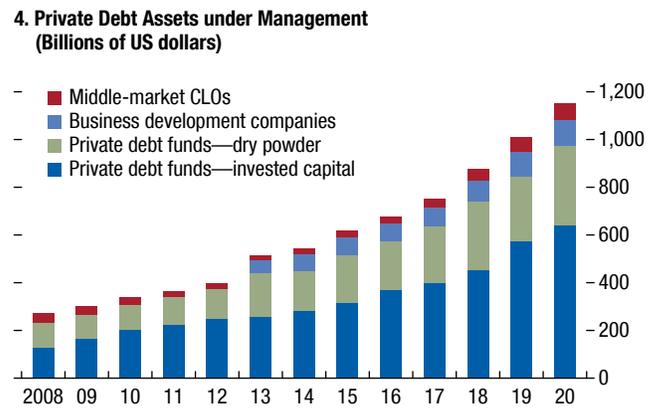
Bankruptcies of small firms have declined in the United States and Japan but have risen in Europe.



Robust merger and acquisition activity is expected to support the consolidation of small and medium-sized firms ...



... and private debt funds have expanded as a potential funding source.



Sources: Bloomberg Finance L.P.; Dealogic; Epiq AACER; Eurostat; Haver Analytics; Preqin; S&P Leveraged Commentary and Data; Tokyo Shoko Research; and IMF staff calculations.

Note: In panel 1, real estate includes both residential and commercial. In panel 2, liquidation, general restructuring, and partial restructuring (micro firms) refer to bankruptcies under Chapters 7, 11, and 13, respectively. In panel 3, 2021 data are annualized. CLO = collateralized loan obligation.

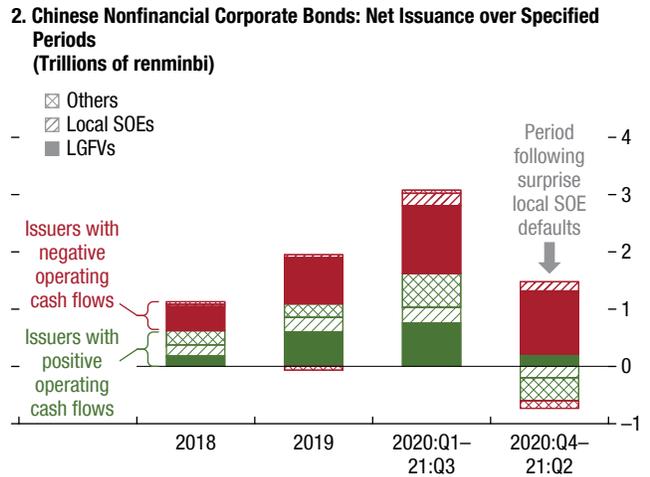
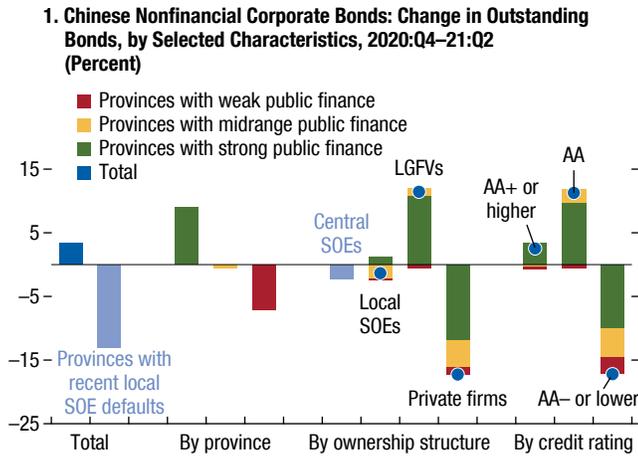
coinciding with the perceived weakening of expected state support (Figure 1.12, panel 1). At the same time, firms with lower credit ratings have faced widening credit spreads and a decline in outstanding bonds, which points to increased risk aversion among investors. Unless carefully managed, the planned transition to a low-carbon economy has the potential to contribute to tighter credit conditions over the medium term and increase financial stability risks (Box 1.4).

Despite the general tightening of credit conditions, financially weak state-owned entities in provinces with relatively strong public finances have retained access to additional bond financing, potentially exacerbating credit misallocation. Historically, local government-owned entities, which comprise local state-owned enterprises and local government financing vehicles, have been the main onshore bond issuers, as they need to borrow funds to finance investment spending and cover operating

Figure 1.12. China’s Credit Conditions and Financial Vulnerabilities

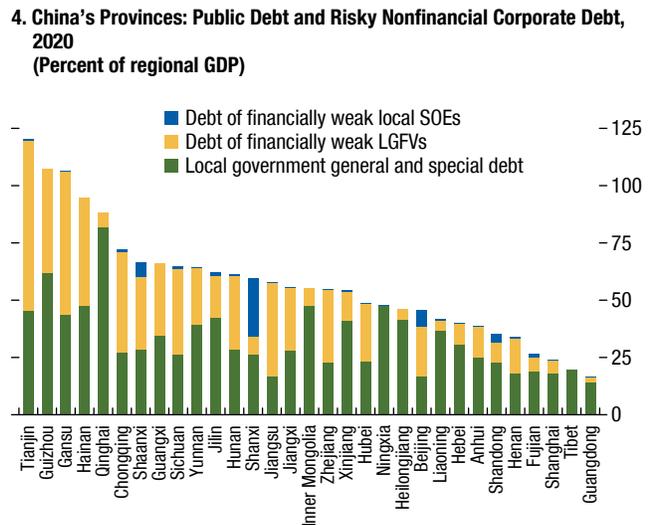
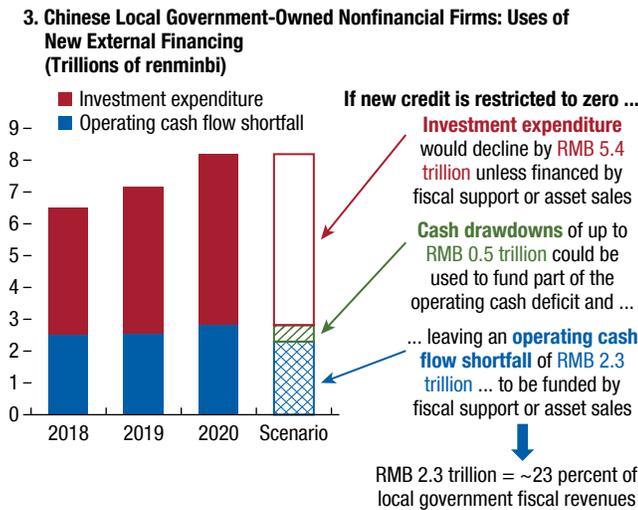
Credit conditions have become more challenging for firms in provinces with weaker public finances, private firms, and firms with lower credit ratings.

Selected local state-owned enterprises defaulted in 2020:Q4, but many of them with weak cash flows continued to enjoy access to bond markets.



Without restructuring and reform, restricting credit to local government-owned entities could adversely affect investment and local government balance sheets ...

... potentially creating destabilizing adverse macro-financial feedback loops, given substantial existing and contingent liabilities of local governments.



Sources: Bloomberg Finance L.P.; Capital IQ; CEIC; WIND; and IMF staff calculations.

Note: In panel 3, operating cash flow is adjusted to capture estimated interest expense reported as part of financing cash flow. In panel 4, financially weak firms have earnings before interest and taxes below net interest expense for three consecutive years. LGFV = local government financing vehicle; SOE = state-owned enterprise.

cash flow shortfalls.²² Since the state-owned-enterprise bond defaults in late 2020, nearly all of the net increase in bond issuance has occurred at firms with a history of negative operating cash flows, most of which are local government-owned entities. However, the fact that these firms are located mainly in provinces with relatively strong public finances may suggest that investors are still paying close attention to the perceived ability and willingness of local governments to provide support (Figure 1.12, panel 2).

Chinese authorities have increased their efforts to address financial vulnerabilities. They have continued the reform of wealth management products, imposed new restrictions to contain lending to the property sector, and limited local governments' ability to raise off-balance-sheet financing to backstop local government-owned entities^{23,24} (Box 1.5). And they have tightened regulatory and supervisory requirements for fintech companies to address regulatory arbitrage. Investors have been increasingly attuned to regulatory actions to address antitrust and data security concerns, including their implications for global risk asset valuations and capital flows.

Addressing the existing financial vulnerabilities while avoiding adverse macro-financial feedback loops in regions with weak public finances is critical. Should access to credit become significantly constrained in regions with weaker public finances, or more widely, local government-owned entities would have to scale back investment, thus hurting economic growth.²⁵ A drop in fiscal revenues resulting from a potential economic slowdown and any support provided to local government-owned entities to help finance operating cash flow deficits (estimated at up to RMB 2.3 trillion) would further strain local governments' fiscal resources (Figure 1.12, panel 3). This would in turn reduce their capacity to backstop local firms, further

tightening credit conditions and setting off a negative local feedback loop.

The potential for macro-financial feedback loops in an environment of slowing credit growth highlights the urgency of comprehensive restructuring and reform efforts. Given the objective of carrying out policy-oriented investment such as in infrastructure, many local government financing vehicles are unable to generate sufficient earnings to cover interest expense for an extended period. Debt of these financially weak local government financing vehicles is substantial in many provinces (Figure 1.12, panel 4), and some local governments may face significant balance sheet stress should some of such risky debt become contingent liabilities. To safeguard financial stability, Chinese authorities should continue to pursue coordinated efforts across agencies to contain leverage and phase out implicit guarantees. They should also accelerate restructuring of financially nonviable firms, improve governance of local governments' public finances, and enhance sharing of fiscal resources between financially weaker and stronger provinces (for example, through conditional central government transfers).

Pockets of Market Exuberance and Rising Financial Leverage Could Prompt Additional Volatility

While potentially beneficial in terms of restructuring and consolidation, merger and acquisition activity may also be a source of risk, as financial risk-taking, corporate releveraging, and use of financial leverage in deals could exacerbate existing vulnerabilities. Reflecting the continued search for yield amid low interest rates, capital allocation toward leveraged buyouts has become more aggressive alongside a rise in highly leveraged deals (Figure 1.13, panel 1). The growing pool of private debt financing has fueled an increase in sponsor-backed leveraged buyout volumes for smaller middle-market firms—deals accounting for close to two-thirds of all middle-market leveraged loan issuance. Easy financial conditions fueled a surge in initial public offerings in equity markets, including a boom in special-purpose acquisition companies in the first four months of this year, but such activity has since slowed, reflecting in part poor performance of some deals and increased regulatory scrutiny.

The failure of the family office Archegos and the subsequent decline in share prices of some affected

²²Local government financing vehicles are entities set up by local governments to raise off-budget financing to fund investment projects, mostly for infrastructure.

²³The asset management rules issued in 2018 are expected to be fully implemented by the end of 2022.

²⁴These measures include constraining borrowing by financially weak property developers based on their financial metrics, such as liabilities to assets, net debt to equity, and short-term debt to cash (also known as the “three red lines” policy), and limiting bank lending to property developers and for mortgages.

²⁵In 2020, of about 7 trillion renminbi in new external financing, about 4.9 trillion was used to fund investment expenditures; the remaining 2.1 trillion covered operating cash flow deficits.

Figure 1.13. Financial Risk-Taking, Releveraging, and Financial Leverage

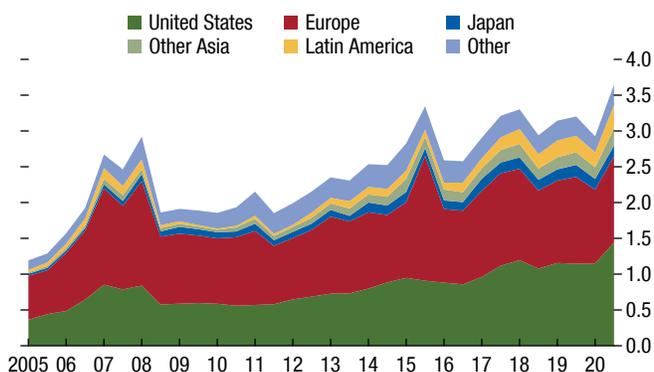
Releveraging reemerged through debt-funded leveraged buyouts.

1. Global Institutional Leveraged-Loan M&As and Leveraged Buyout Volumes
(Billions of US dollars, percent)



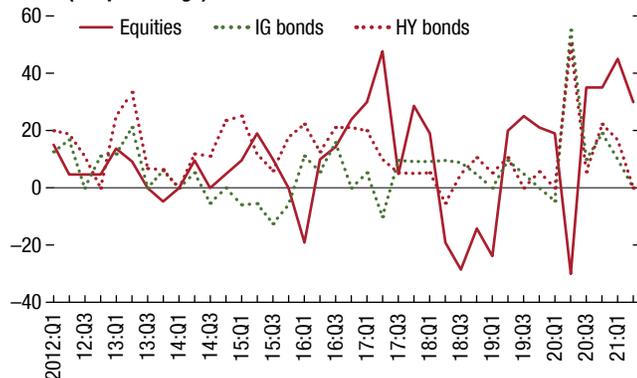
The growing use of equity-linked derivatives suggests a rising degree of financial leverage ...

2. Notional Amount of Over-the-Counter Equity-Linked Swaps and Forwards
(Trillions of US dollars)



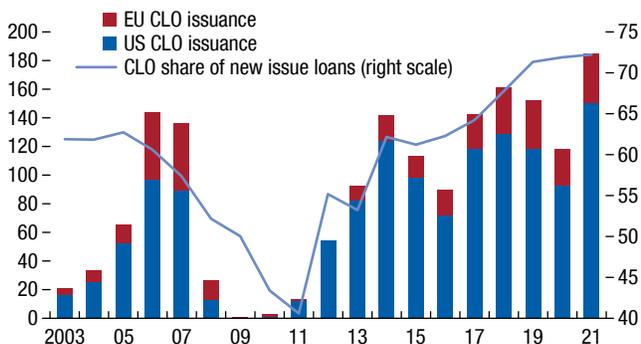
... while surveys point to elevated demand for borrowing to fund equity positions.

3. US Senior Credit Officer Opinion Survey: Respondents Reporting Increased Demand for Funding Assets
(Net percentage)



Collateralized loan obligation issuance has reached record highs.

4. Global Issuance of Collateralized Loan Obligations
(Billions of US dollars; percent of leveraged loan issuance)



Sources: Bank for International Settlements; Bloomberg Finance L.P.; Federal Reserve; Haver Analytics; S&P Leveraged Commentary and Data; and IMF staff calculations.

Note: For panels 1 and 4, 2021 data are annualized to estimate full-year issuance. In panel 1, the right scale shows the percentage of all leveraged buyouts (LBOs) for which the issuer of the leveraged loan has leverage greater than six times debt to EBITDA. CLO = collateralized loan obligation; EBITDA = earnings before interest, taxes, depreciation, and amortization; HY = high-yield; IG = investment-grade; M&A = merger and acquisition.

dealer banks have brought to the fore the financial vulnerabilities stemming from interconnectedness among financial institutions and hidden financial leverage, drawing increased attention on the part of regulators around the globe. For example, financial leverage used to boost returns appears to be increasingly employed in equity markets. While data limitations make it difficult to gain a full picture, available data suggest that the use of equity-linked derivatives has increased (Figure 1.13, panel 2), though the ratio to market capitalization has

declined (González Pedraz and van Rixtel 2021). In addition, in surveys, dealers continue to report elevated demand for securities financing to purchase equities (Figure 1.13, panel 3).

In advanced economy credit markets, issuance of collateralized loan obligations has been on a record-setting pace in 2021 (Figure 1.13, panel 4). Although current collateralized loan obligations have less “embedded” leverage than the structures that prevailed before the global financial crisis (that is, the

share accounted for by equity capital has increased), equity and mezzanine debt investors (many of which are new entrants in the asset class or were previously senior debt holders who have shifted to lower-rated tranches in a search for yield) may experience sizable credit losses in a severe market downturn (see the April 2020 GFSR).

While financial vulnerabilities have generally declined at nonbank financial intermediaries, in several advanced economies and China, nonbank financial intermediaries still feature elevated leverage, credit risk exposures, and/or liquidity mismatches, which prop up their vulnerabilities (Box 1.1). In addition, vulnerabilities have increased for life insurers; the sector owns about 20 percent of global bonds and 30 percent of credit investments. A stress scenario of a large and sudden increase in bond yields and corporate spreads could induce mark-to-market losses of 30 percent for insurers in some jurisdictions (Box 1.2). This could lead to the emergence of policy surrenders, forcing life insurers to liquidate investments, which, in the extreme, could reach \$1 trillion in the United States and Europe.

Surging House Prices Raise Concerns about a Sudden Reversal

The housing market has been exceptionally strong during the pandemic, buoyed by continued accommodative monetary policy, strong demand for single- and multifamily homes as a result of shifting household preferences for more space, and limited supply available to buyers. While house prices historically tend to drop during recessions, they have surged among major advanced and emerging market economies, while resales have reached all-time highs this year. In some countries (Luxembourg, New Zealand, Turkey) real house prices have risen more than 15 percent since the end of 2019 (Figure 1.14, panel 1). Rising house prices and house-price-to-rent ratios have been evident, even in countries that had witnessed strength before the pandemic (Figure 1.14, panel 2, top and middle tables).²⁶ Importantly, fiscal support and an improving economic outlook have boosted personal incomes, helping contain a rapid increase in

²⁶The analysis examines the dynamics in housing prices using recursive (right-tailed) unit root tests as described in Pavlidis and others (2016). These statistics detect and date periods characterized by a rapid price appreciation above estimated trends.

house-price-to-disposable-income ratios (Figure 1.14, panel 2, bottom table).

A potential imbalance between demand and supply can help explain recent housing market trends. The decline in interest rates during the pandemic to record lows and a rise in personal disposable income have improved housing affordability, thus boosting demand.²⁷ Meanwhile, supply has been slow to respond. Pandemic-related bottlenecks, such as shortages and rising costs of materials and labor, have prolonged construction times and delayed an increase in supply. In addition, structural challenges remain, such as limited building permits in metropolitan areas around the globe. Global housing starts per capita have begun to pick up, although they are still considerably below the levels of the early 2000s, with national measures masking significant differentiation between major metropolitan areas and other areas.

Sustained periods of rapid growth in house prices can create the expectation that such prices will continue to rise in the future, potentially leading to excessive risk-taking and rising vulnerabilities in housing markets (as seen during the global financial crisis). Downside risks to house prices appear to be significant. In a worst-case scenario, the house price decline over the next three years is estimated to be about 14 percent in advanced economies and 22 percent in emerging markets—somewhat higher than their pre-COVID-19 levels (Figure 1.14, panels 3 and 4).^{28,29} Across countries, the rise in downside risks to house prices generally reflects an increase in price misalignment (relative to fundamentals). In some emerging market

²⁷Housing affordability improves with higher personal income and lower mortgage rates, but declines with higher house prices. See, for example, the definition by the US National Association of Realtors at <https://www.nar.realtor/research-and-statistics/housing-statistics/housing-affordability-index/methodology>.

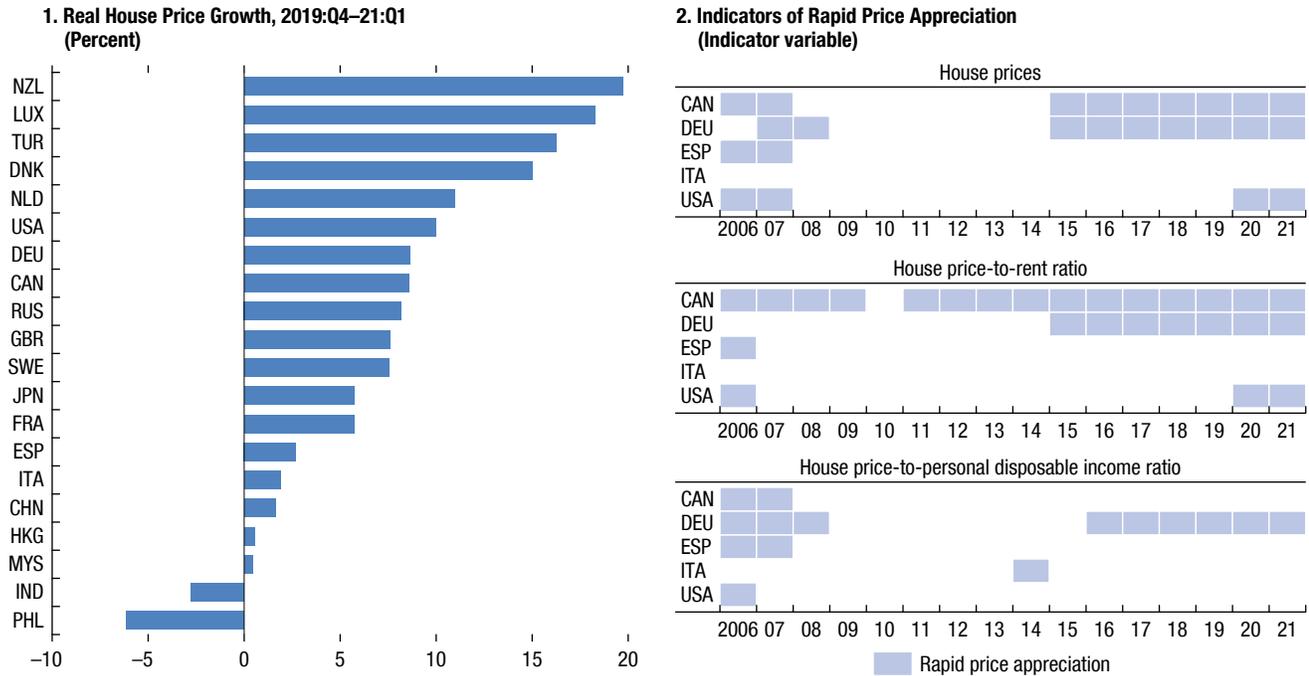
²⁸Formally, house prices at risk corresponds to downside risks to house prices, defined as the forecast house price growth at the 5th percentile of the house price distribution. The house-prices-at-risk model controls for past growth in house prices, financial conditions, real GDP growth, the presence of credit booms, and an overvaluation indicator capturing the degree of deviation of prices from fundamental valuation levels. For further details on the methodology, see Chapter 2 of the April 2019 GFSR.

²⁹The current distribution of predicted house price growth is qualitatively similar to the estimated distribution ahead of the global financial crisis. That said, the banking system is much more resilient today than it was in 2007–08, thanks to postcrisis regulatory reforms. Should a significant house price adjustment occur, stress in the financial system is likely to be more contained, even though financial vulnerabilities are elevated in a number of sectors, including among nonbank financial intermediaries.

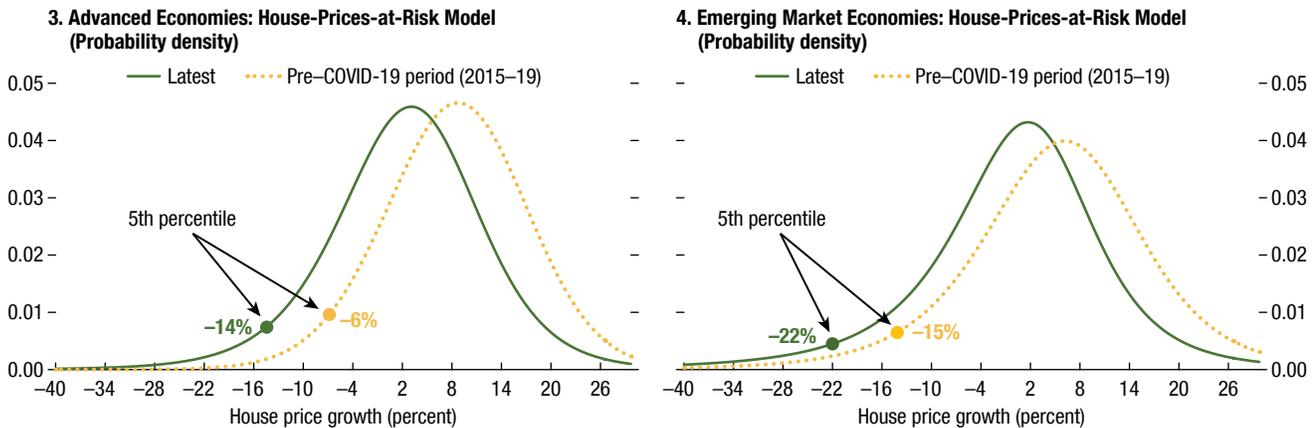
Figure 1.14. Global Housing Prices

House prices have surged in several countries ...

... with rising house prices already evident in some countries prior to the pandemic.



Downside risks have increased in advanced and emerging market economies.

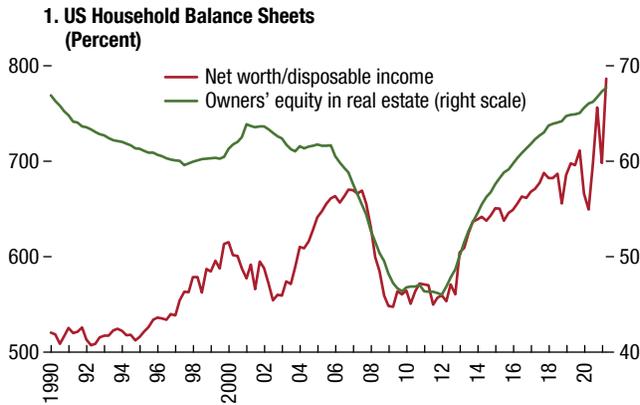


Sources: Bank for International Settlements; Bloomberg Finance L.P.; Haver Analytics; and IMF staff calculations.

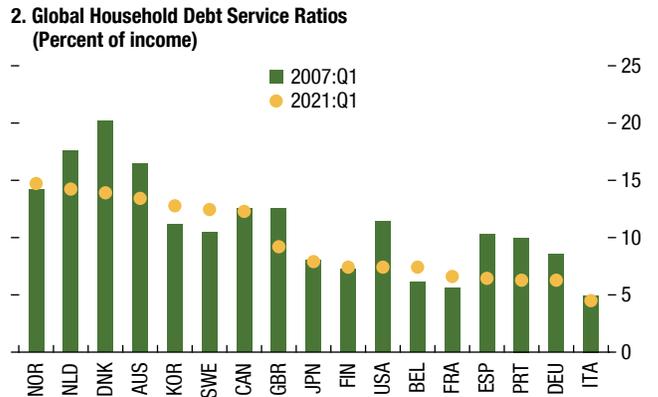
Note: In panel 1, nominal house prices are adjusted for inflation using the consumer price index. In panel 2, the indicators are based on recursive (right-tailed) unit root tests to detect periods with rapid price appreciations. Shaded areas correspond to periods during which the estimated backward sup augmented Dickey-Fuller statistics exceed the corresponding 95th percentile critical value from their limit distribution, implying that prices are overshooting their underlying trend. Panels 3 and 4 show the estimation results from a house-prices-at-risk model. The model allows prediction of house price growth in a worst-case scenario; that is, the range of outcomes in the lower tail of the future house price distribution. Probability densities are estimated for the three-year-ahead (cumulative) house price growth distribution across advanced economies (panel 3) and emerging market economies (panel 4). Filled circles indicate the worst-case price decline with a 5 percent probability (5th percentile). Data labels use International Organization for Standardization (ISO) country codes.

Figure 1.15. Household Balance Sheets and Mortgage Lending

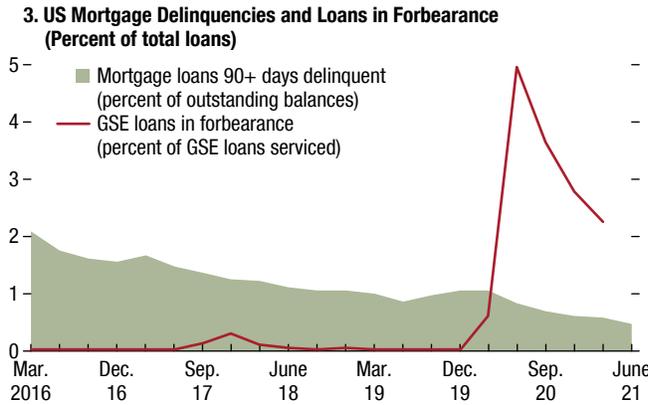
The financial position of households is stronger than before the global financial crisis.



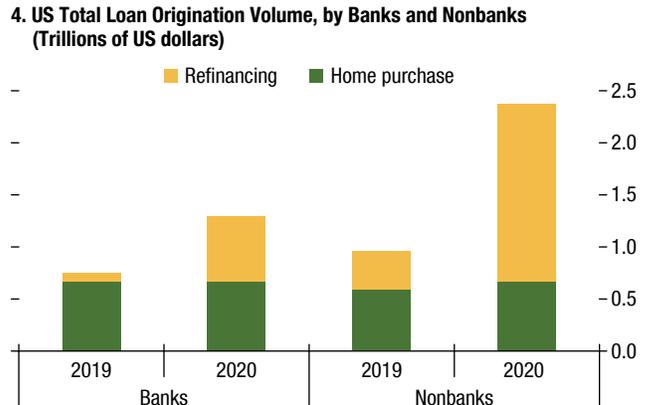
Households have benefited from low interest rates.



Mortgage delinquencies have remained low during the pandemic, largely due to forbearance.



Nonbank lenders have become predominant institutions in the mortgage origination market.



Sources: Bank for International Settlements; Bloomberg Finance L.P.; Federal Reserve; Haver Analytics; HousingWire; The Motley Fool; and IMF staff calculations. Note: Data labels use International Organization for Standardization (ISO) country codes. GSE = government-sponsored enterprise.

economies, such as China and Malaysia, a tightening in financial conditions also contributed to the buildup of vulnerabilities in housing markets.³⁰

New Risks Emerging in the Housing Market

Compared with conditions during the global financial crisis, household financial positions now appear to be stronger, based on household net worth and owners'

³⁰The overvaluation variable adopted in this analysis is a simple valuation metric for housing, which captures the degree of deviation from fundamental valuation levels. Specifically, the measure is constructed as the deviation of house prices to GDP per capita from an estimated trend.

real estate equity (Figure 1.15, panel 1). Households have generally benefited from lower interest rates and measures to support income and interest costs, including debt payment moratoria in some jurisdictions, with debt service ratios falling in many countries and thus reducing the risk of default on mortgage and other consumer debt (Figure 1.15, panel 2). However, there is a risk that the financial position of households may deteriorate should the unprecedented fiscal support be withdrawn prematurely.

In the run-up to the global financial crisis, loose underwriting standards and lending to households with low credit scores played an important role in the eventual bust of the housing sector. During the

pandemic episode, by contrast, banks have been more selective, limiting their credit risk exposure. Product risk is also less pronounced: there are fewer mortgages with variable interest rate payments, and standards for cash-out refinancings are more stringent. In addition, pandemic-related forbearance provisions have prevented a sharp rise in bank mortgage delinquencies (Figure 1.15, panel 3). Subsequently, loans in forbearance have started to diminish as households have brought their mortgage payments up to date.

Nevertheless, risks may be emerging elsewhere in the housing sector. Nonbank mortgage lenders have become more prominent in the US mortgage origination market, notably so during the pandemic in terms of refinancings (Figure 1.15, panel 4). These specialized mortgage lenders do not retain mortgages on their balance sheets and usually sell them to government-sponsored enterprises within one quarter and thus have limited credit risk exposure. However, they do not hold deposits and obtain liquidity from banks and fund themselves in the wholesale market, making their lending posture vulnerable to a sharp tightening in funding market conditions. In addition, there is a high degree of concentration among nonbank lenders, leaving the US mortgage origination market susceptible to exit risk by key lenders, potentially resulting in a decline in credit. Nonbank mortgage originators often also act as mortgage servicers, exposing themselves to credit risk from several months of missed payments.³¹

Will Banks Support the Economic Recovery?

With the exception of a weak tail of banks in some jurisdictions, the global banking sector has remained resilient through the pandemic, reflecting years of capital buildup following the global financial crisis reforms and continued unprecedented monetary and fiscal policy support (see the April 2021 GFSR for a detailed analysis). Consistent with the improving economic outlook, restrictions on capital distributions have been removed or relaxed in several jurisdictions.

³¹FSOC (2019) identifies the issue of “servicing advances.” Indeed, US mortgage lenders were subject to significant stress in March–April 2020, which resulted in a request for emergency liquidity support (see Scuffham 2020). In the United States, the Government National Mortgage Association, or Ginnie Mae, issued a request for input in July 2021 that proposed risk-based capital and other requirements for nonbank mortgage lenders (see Ginnie Mae 2021).

In some countries, notably the United States, banks have begun to bolster capital by writing back precautionary reserves.

Despite the ongoing economic recovery, banks’ loan underwriting standards (a proxy for “loan supply”) remain restrictive in most countries, with bank credit officers expecting that lending posture to persist (see the April 2021 GFSR). While the banking system has so far proved resilient—reflecting, importantly, post-global-financial-crisis reforms—a correction in risk asset prices combined with a deterioration in borrowers’ balance sheets could spill over to banks if the pandemic continues. These risk factors have raised concerns that tepid bank loan growth may constrain economic activity.

To assess this risk, this section looks at the relationship between economic growth and bank lending behavior, focusing on the credit intensity of growth and bank loan growth relative to total credit growth (Figure 1.16, panel 1).³² In each country, the credit intensity of growth was volatile from year to year but generally stable over 2010–19. While the credit intensity of growth varies widely across countries, its ratio has been greater than 1 in almost all countries over the past decade. Bank loan growth relative to total credit growth also affects the relationship between bank lending and economic growth. When the ratio is lower than 1 it points to a shift in the composition of total credit away from bank loans.

The assessment of whether bank lending growth may fall short of levels associated with expected economic growth depends importantly on assumptions regarding the relationship between bank lending and GDP growth. The following exercise assumes that the credit intensity of growth remains at the 2010–19 average over the next few years—a reasonable consideration, given that it has not changed meaningfully over the past 10 years. The analysis also assumes that bank loans will grow at the same pace as total credit over the next few years.

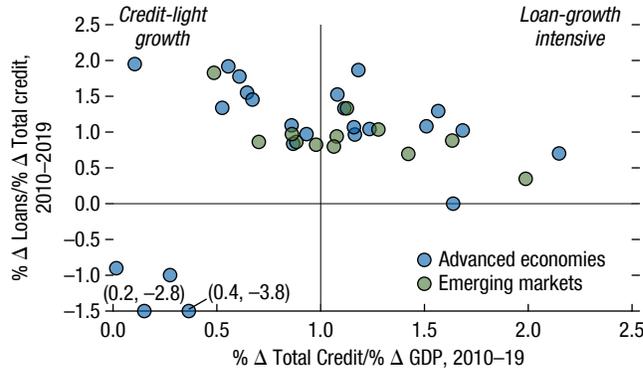
Using these assumptions, consensus estimates of loan growth (based on analyst forecasts for listed banks) are generally below loan growth consistent with the IMF 2022 GDP forecast (“GDP-consistent” loan growth) in most countries (Figure 1.16, panel 2). Barring a sudden change in the credit intensity of

³²Loan growth/GDP growth = (total credit growth/GDP growth) x (loan growth/total credit growth).

Figure 1.16. GDP Growth and Loan Growth: The Impact of Growth Shortfalls

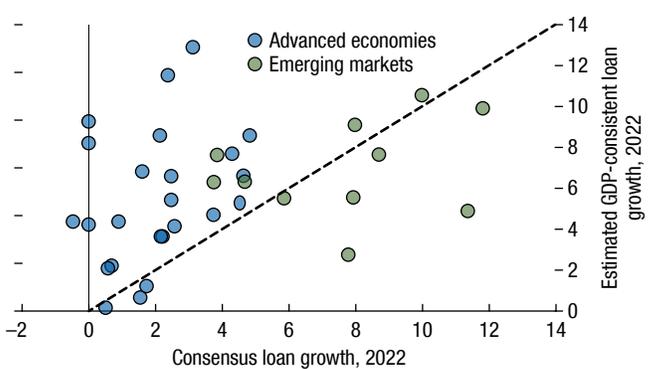
Countries vary in credit intensity of growth and bank loan growth relative to total credit growth.

1. Credit Intensity of Growth and Bank Loan Growth Relative to Total Credit Growth



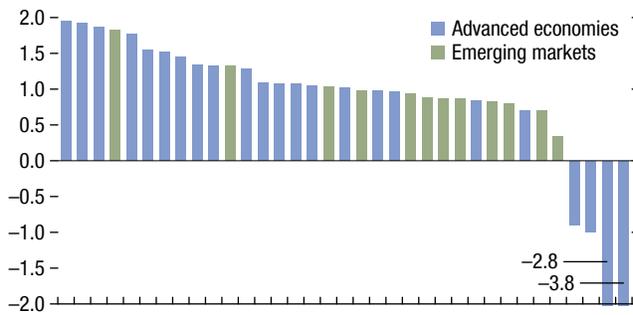
Loan growth associated with the GDP forecast falls short of market forecasts in many countries.

2. Consensus and “GDP-Consistent” 2022 Loan Growth (Percent)



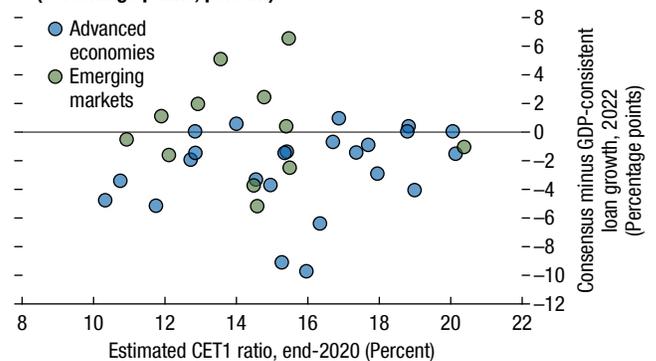
Bank loan growth has been slower than the growth of total credit in many countries.

3. Loan Growth Relative to Total Credit Growth, 2010–19 (Times)



The capital position of banks does not appear to explain the gap between consensus and GDP-consistent loan growth.

4. System CET1 Ratio and Consensus Minus GDP-Consistent Loan Growth in 2022 (Percentage points, percent)



Sources: Bank for International Settlements; Bloomberg Finance L.P.; CEIC; Haver Analytics; national authorities; and IMF staff calculations. Note: “GDP-consistent” loan growth in panel 2 assumes that the total credit intensity of GDP growth remains at the same level observed over the last 10 years and that the loan share of total credit remains at 2020 levels. Consensus estimates of loan growth are based on analyst forecasts for listed banks. Data labels use International Organization for Standardization (ISO) country codes. CET1 = common equity tier 1.

growth or a decline in the bank loan credit share relative to 2010–19, this finding points to potential downside risks to the IMF’s GDP forecasts.³³

The share of total credit accounted for by bank loans has evolved in structurally significant ways. In most countries, bank loans have grown at a slower pace than total credit (Figure 1.16, panel 3). While in some countries these dynamics have been driven by deleveraging in the banking sector, in many others, this points to a rise in the share of credit extension

outside of the banking sector, reflecting the confluence of market structure changes (development and deepening of capital markets), regulatory changes after the global financial crisis, and technology advances. It is significant that economic growth appears to be more closely related to overall credit growth than to the growth of bank loans, which suggests that capital markets may play an important role in supporting the recovery.

There may be important trade-offs to consider between incentivizing credit extension to support economic growth and possible risks to financial stability. Nonbank lenders may have a different appetite

³³Other factors may support a recovery even with moderate credit dynamics, since high precautionary savings may be used to repay loans.

for risk and a greater capacity to absorb losses, given the longer time horizon of some investors, thus limiting the transmission of shocks to the broader financial system relative to banks. But there are also risks, including limited visibility into the nonbank financial institution sector, use of opaque financial leverage, often weaker underwriting standards, and the possibility of poorly understood linkages with banks. Policymakers should consider whether available tools allow for careful monitoring and assessment of risks in the nonbank financial institution sector, whether additional tools may be needed, and whether the regulatory perimeter should be broader to include some of these corners of the financial system (Box 1.3 discusses related issues for fintech nonbanks).

One important corollary of the analysis is that bank capital ratios do not appear to be related to the gap between consensus loan growth and GDP-consistent bank loan growth (Figure 1.16, panel 4). According to loan officer opinion surveys, bankers see the uncertainties around the economic and credit risk outlook rather than their own internal risk factors as their main constraints on loan growth. Such constraints are likely to persist until the virus is brought firmly under control and there is more clarity regarding possible credit losses once guarantees, moratoria, and other support measures are phased out. Expiration and runoff of these support policies could drive defaults higher and require banks to increase provisions (see the April 2021 GFSR for the estimated impact on bank capital ratios).³⁴ This suggests that, at least at this stage, lending appetite may be more sensitive to policies that improve the credit quality environment, such as support for borrower solvency and policies to improve credit information and bad debt recoveries, than solely to considerations related to capital positions.

International Bank Credit: An Additional Risk for Emerging Markets

A slowdown in international bank credit extension could be a source of a credit shortfall in emerging markets. International bank credit flows have played a key role in promoting both economic growth and financial

deepening in emerging markets. However, greater reliance on foreign lending makes countries more vulnerable to credit reversals during periods of domestic stress (pull factors) or in the context of sudden changes in external conditions (push factors).

Banks have cut back international lending to emerging markets in recent years (Figure 1.17, panel 1). Increased regulation, such as higher capital requirements, has contributed to a general retrenchment from capital-intensive activities in emerging markets. Global banks based in advanced economies have cut back most forcefully, motivated in part by the decline in the profitability of foreign operations relative to domestic banking operations since the early 2000s (Caparusso and others 2019).

Emerging market banks have partially offset this trend, substantially increasing their footprint in international lending. Although emerging market banks still account for a relatively small fraction of aggregate global banking volumes, their market share in global cross-border lending tripled (to 15 percent) between 2008 and 2018 (Figure 1.17, panel 2). In addition, cross-border interlinkages between emerging markets are substantial and growing rapidly, particularly in Asia, Africa, and eastern Europe. Close to 40 percent of cross-border lending to emerging markets is from banks based in other emerging markets (Figure 1.17, panel 2) (see BIS 2018). However, lending by emerging market banks appears to be more volatile compared with advanced economy banks, raising the potential vulnerability of recipient countries to credit withdrawals in times of stress (Figure 1.17, panel 1, green lines).

Foreign banking operations have played an increasing role in many jurisdictions (Figure 1.17, panel 3). Financial centers (such as New York, London, and Hong Kong SAR) have a substantial foreign bank presence; banks in those financial centers are supervised mostly by their home countries and have much better flexibility to move liquidity across borders. In several emerging markets, the majority of the banking system is in fact foreign-owned, and foreign banks generally operate as subsidiaries that are supervised by the host country and held to the same capital and liquidity standards as local banks.

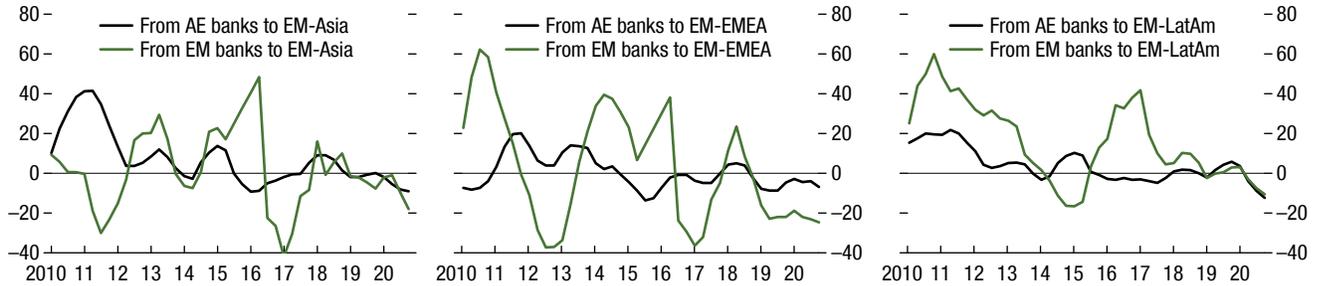
The stability of international bank credit differs based on provision channels. Pure cross-border lending, where the lender has no presence in the borrower country, is the least stable form and the most

³⁴Most banks would remain resilient after the phaseout of public guarantees and moratoria (April 2021 GFSR), although in some cases the negative impact on capital could exceed 100 basis points of CET1 ratios. Close monitoring of the phaseout of these borrower support measures remains essential.

Figure 1.17. International Claims and Foreign Bank Participation

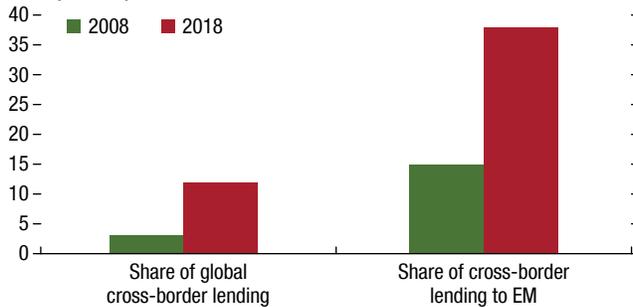
International banks have cut back lending to emerging markets.

1. International Claims on Emerging Markets, by Lender Group (Percent, year over year)



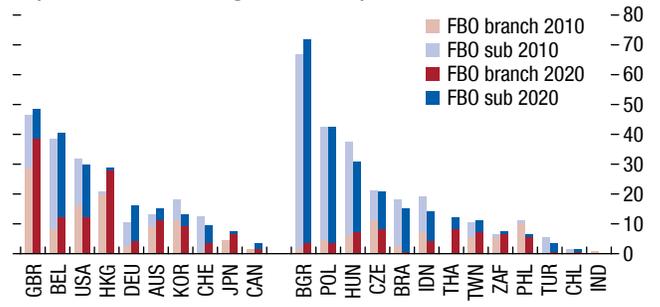
There are growing emerging-market-to-emerging-market interlinkages.

2. Share of Emerging Market Lenders in Cross-Border Lending (Percent)



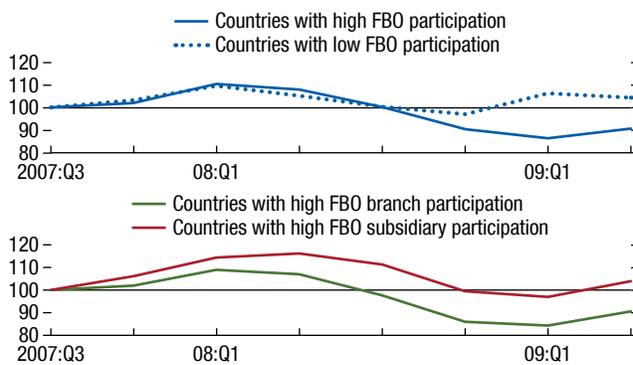
High foreign bank participation is a potential amplifier to credit withdrawals.

3. Foreign Bank Participation (Percent of total banking sector assets)



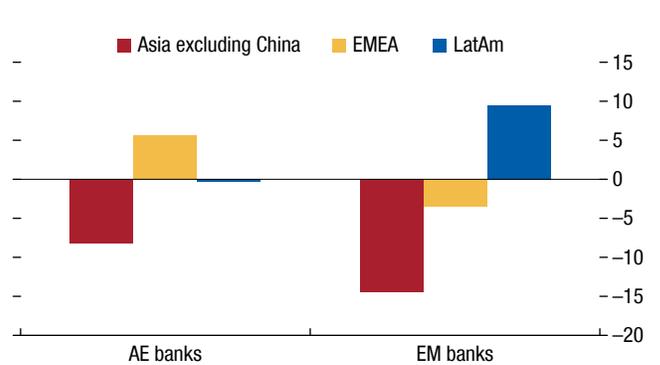
Countries with higher foreign bank participation experienced larger and faster outflows under stress.

4. Changes in International Claims during the Global Financial Crisis (Index to 2007:Q3)



Risks of continued weak international lending remain.

5. Estimated Changes in International Claims under Shock (Percent, with one-standard-deviation shock)



Sources: Bank for International Settlements (BIS); IMF, World Economic Outlook database; national central banks; and IMF staff calculations. Note: Panels 1, 4, and 5 are based on international claims from BIS Consolidated Banking Statistics. Panel 2 is based on cross-border claims from BIS Locational Banking Statistics. Panel 3 is sourced from Caparusso and Chen (forthcoming). In panel 4, high (low) participation is defined as the top (bottom) quartile within the sample countries in panel 3. Data labels use International Organization for Standardization (ISO) country codes. AE = advanced economy; EM = emerging market; EMEA = Europe, Middle East, and Africa; FBO = foreign banking organization; LatAm = Latin America.

sensitive to events of stress in either the lender or the borrower country. International lending through foreign bank branches, which relies mainly on wholesale and intragroup funding, is also relatively prone to outflows during periods of stress. Lending by foreign bank subsidiaries (incorporated, capitalized, and mainly funded locally) is the most stable. During stress, high foreign bank participation, especially the presence of foreign bank branches, could amplify the risk of credit withdrawals. Indeed, in past stress episodes (the global financial crisis, euro area crisis, COVID-19 pandemic), countries with higher foreign bank participation experienced larger and faster outflows, with particular weakness in countries with higher foreign bank branch participation (Figure 1.17, panel 4).

Looking ahead, there are several risk factors that could lead to tightening financial conditions or weaker fundamentals in emerging markets, including policy normalization in advanced economies, inflation pressures leading emerging market central banks to tighten monetary policy, or a reimposition of lockdowns in the event of virus mutations and uneven access to vaccines. Significant emerging-market-to-emerging-market interlinkages and rising foreign bank participation could amplify these risks. In a simulation exercise, the historical growth rates of bilateral international claims were decomposed into lenders' financial conditions and borrowers' macro and financial conditions, largely following Shim and Shin (2018). A one standard deviation shock to both lender and borrower factors could drive a 5 percent decline in international lending. Emerging market Asia (excluding China), where the COVID-19 Delta variant is spreading rapidly, is particularly vulnerable (Figure 1.17, panel 5). Emerging market banks are expected to cut back more than advanced economy banks.

Policy Recommendations to Secure a Sustainable Recovery and Limit Financial Stability Risks

While monetary and fiscal policy support continues to be crucial to sustaining the ongoing recovery, it should be tailored to country-specific circumstances given the uneven pace of the economic recovery across countries. Against a backdrop of new virus mutations and greater uncertainty about global economic prospects, policymakers should remain vigilant, helping maintain the flow of credit to households and firms to secure the recovery

while mitigating financial stability risks. The eventual normalization and removal of unprecedented policy support will have to be well telegraphed, gradual, tailored to country-specific circumstances, and recalibrated along the way as dictated by the evolution of the recovery.

Central banks should provide clear guidance about the future stance of monetary policy. Against a backdrop of rising inflation and heightened economic uncertainty, central banks face challenges to meet their mandates. With price pressures anticipated to moderate and then gradually subside, monetary authorities in advanced economies have indicated that they will look through such pressures until the underlying price dynamics become clearer to avoid an unwarranted tightening of financial conditions that could imperil the recovery. However, inflation may ultimately be more persistent than currently expected; indeed, investors appear to judge risks to the inflation outlook as tilted to the upside, especially in the United States, where they are still gauging the implications of the Federal Reserve's new monetary policy framework. It is therefore crucial that central banks provide clear guidance about the future stance of policy, including progress toward the policy normalization process, to avoid unnecessary volatility in financial markets and an unwarranted tightening in financial conditions. If, in the end, price pressures turn out to be more persistent than anticipated, monetary authorities should act decisively to avoid an unmooring of inflation expectations. With a number of emerging market central banks already tightening policy amid an increasingly asynchronous global recovery, an abrupt and rapid increase in US rates could lead to significant spillovers to emerging and frontier markets, further widening the recovery gap. For emerging market central banks that have implemented asset purchase programs during the pandemic, transparency and clear communication with respect to their objectives are crucial to avoid damaging their credibility. In most cases, asset purchase programs should be limited in time and scale and be linked to clear objectives (see also Chapter 2 of the October 2020 GFSR). Where risks to the inflation outlook call for policy normalization, exit strategy plans should be communicated early on and guided by clear parameters to minimize the risk of market volatility.

Policymakers should act preemptively to address vulnerabilities and avoid a buildup of legacy problems. In light of the possible need for prolonged policy support to ensure a sustainable and inclusive recovery,

policymakers should act decisively to address the potential unintended consequences of unprecedented measures taken during the pandemic. Risk asset valuations continue to be stretched in some segments of the financial system, supported by ample liquidity and robust risk appetite globally. Financial vulnerabilities remain elevated in the nonbank financial intermediary sector, while small nonfinancial firms continue to face liquidity and solvency risks. Policymakers should tighten selected macroprudential tools to tackle pockets of elevated vulnerabilities while avoiding a broad tightening of financial conditions. Due to possible lags between the activation and impact of such tools, they should take early action. If such tools are not available—for example, in the nonbank financial intermediary sector—policymakers should urgently develop them. Given the challenges to designing and operationalizing macroprudential tools within existing frameworks, policymakers should also consider building buffers elsewhere to protect the financial system.

*Authorities should tailor the type and size of fiscal support to the stage of the economic recovery and to country-specific characteristics and needs.*³⁵ Fiscal policy has played a crucial role alongside monetary policy in supporting the economic rebound and should continue to foster a sustainable and inclusive recovery. However, given limited fiscal space in some countries, it is essential to give priority to the most vulnerable households and businesses, particularly where financing conditions are tight and access to market funding is limited. As the recovery takes hold, targeted support should increasingly be concentrated on borrowers deemed temporarily distressed but likely viable.³⁶ Policy measures aimed at raising growth potential and fostering a greener economy will play a crucial role in the path toward a more sustainable global economy.

Policy Recommendations to Address Specific Financial Stability Risks

Authorities should rebuild buffers and implement structural reforms in emerging and frontier markets. Against the backdrop of volatile global risk appetite and high economic uncertainty, emerging and frontier markets remain exposed to the risk of a sudden tightening in external financial conditions. In such an environment,

emerging and frontier markets need to rebuild buffers and implement long-standing reforms to boost structural growth prospects to insulate themselves from the adverse impact of capital flow reversals and an abrupt increase in financing costs. To that end, the recent allocation of special drawing rights by the IMF for all countries (IMF 2021a) will provide liquidity relief and help ease policy space constraints. Selected macroprudential policies and prudent macro-financial risk management should be employed where financial vulnerabilities are building. This targeted approach may help tackle pockets of elevated vulnerability while avoiding a broad tightening of financial conditions.

Policymakers should promote the depth of emerging market local currency markets and foster a stable and diversified investor base. Local currency markets continue to be a key funding channel for emerging markets. Measures should strive to (1) establish a sound legal and regulatory framework for securities, (2) develop efficient money markets, (3) enhance transparency of both primary and secondary markets as well as the predictability of issuance, (4) bolster market liquidity, and (5) develop a robust market infrastructure.

Tailored support measures to viable firms in the non-financial corporate sector is crucial. While corporate balance sheets have strengthened thanks to unprecedented policy support, there is still a significant divergence across firms and regions. Solvency risk has in fact deteriorated for small firms in some countries. In countries with developed financial markets, firms benefiting from market access should be encouraged to take advantage of favorable financial conditions and seek private funding. It is crucial that policymakers undertake structural measures, such as strengthening insolvency frameworks via a fast-track process to facilitate an orderly exit of nonviable firms to address solvency risk and ensure orderly debt restructuring.

Policymakers should activate appropriate macroprudential policy measures to lean against the surge in house prices. To mitigate possible unintended consequences of policy support, authorities should carefully monitor developments in the housing markets. As house prices surge in some countries, households may be taking on larger loans, becoming overexposed to potentially rising debt service once monetary conditions normalize and mortgage loans reprice. Rapidly increasing house prices could also lead to a buildup of vulnerabilities among lenders in the real estate sector, including nonbank

³⁵See Chapter 1 of the October 2021 *Fiscal Monitor*.

³⁶See Chapter 1 of the April 2021 *Fiscal Monitor*.

financial institutions. While the global financial system is more resilient than at the time of the global financial crisis, reflecting to a large degree postcrisis regulatory reforms, significant house price declines may still have financial stability implications. National authorities should deploy stringent stress tests to estimate the potential impact of a sharp fall in house prices on household balance sheets and ultimately on financial institutions. On the macroprudential policy front, policymakers should review whether existing tools (such as stressed debt service and loan-to-value ratios) require tightening to keep vulnerabilities in check.

Financial regulators and supervisors should gradually normalize financial policies where appropriate. Against a backdrop of continued economic recovery, previous global stress test results suggest that a gradual withdrawal of monetary and fiscal support, along with the normalization of financial policy measures enacted during the pandemic, is unlikely to threaten financial stability. Nonetheless, for a weak tail of banks and nonbank credit providers solvency may be affected. While financial policy normalization is increasingly appropriate, it should continue to reflect uncertainties surrounding the outlook and be calibrated to the pace of each country's recovery, balancing the benefits of continued support against the future cost of higher defaults resulting from extending borrower support.³⁷

Policymakers should urgently address vulnerabilities in nonbank financial intermediaries unmasked by the

³⁷See Kongsamut, Monaghan, and Riedweg (2021) for further guidance regarding the choice of pace and strategy of financial sector policy normalization.

*pandemic through enhanced prudential supervision and regulation.*³⁸ Investment funds can be subject to fire sale externalities, illiquidity spirals, and run risk. The incentives of investors to “front-run” others when adverse shocks occur can be best addressed by increasing the value of waiting to sell fund shares. In addition, the risks inherent in investment funds' liquidity and maturity transformation can be reduced through a combination of liquidity management tools of increasing intensity to be deployed sequentially. In terms of liquidity backstops, market-based solutions should be the first line of defense, buttressed in the event of tail episodes by central bank emergency liquidity support. Critically, the global nature of the investment fund business and the fungibility of financial flows makes it imperative that further reform be achieved on an internationally coordinated basis.³⁹ In addition, policymakers should monitor risks in the life insurance sector that emerge from the sector's need to meet high-return targets in a low-yield environment. Authorities should conduct stress tests to assess the impact of a sudden increase in yields on the solvency of insurers and encourage greater reporting transparency, including more homogenous disclosure standards.

³⁸For a detailed discussion of the policy proposals and how to address them, see IMF (2021b).

³⁹Given the growing importance of exchange-traded bond funds, participants must be able and willing to arbitrage in response to fund price dislocations if these funds are to function properly. To this end, policies targeting authorized participant leverage are more effective in strengthening authorized participants' arbitrage than existing regulatory capital requirements.

Box 1.1. How Vulnerabilities Shape Up across Sectors: Indicator-Based Framework Update

With the recovery gaining traction, global financial vulnerabilities have declined somewhat on balance across most sectors (Figure 1.1.1, panel 1).¹ In advanced economies, vulnerabilities have lessened, in particular among nonfinancial firms, but they remain elevated in some sectors, such as sovereigns and insurers. In emerging markets, the improvement has been less evident, and vulnerabilities are still high in a number of sectors (Figure 1.1.1, panel 2).

Looking across sectors, *sovereigns* have seen debt levels rise further—and at a faster pace in advanced economies relative to emerging markets—as many governments have used fiscal policy aggressively during the pandemic and need to finance the fiscal response. Accommodative financial conditions have helped many emerging markets meet external financing needs, but domestic concerns around inflation, COVID-19, and vaccine availability have weakened nonresident capital flows and kept external vulnerabilities elevated.

Balance sheet fundamentals at *nonfinancial firms* have continued to improve as strong earnings have so far outpaced debt growth. Leverage (measured as debt to earnings) has declined across most advanced and emerging market economies, reflecting the rebound in earnings associated with the rebound of the economy. While corporate liquidity buffers have dipped since firms increased dividends, started to invest again, and

used cash to fund mergers and acquisitions, liquidity ratios remain well above historical averages and near record highs in some regions.

In the *household* sector, the net financial asset position has improved, particularly in the euro area and the United States. The household debt-to-GDP ratio has edged higher in the United States but remains close to the lows reached after the global financial crisis, and debt servicing capacity remains resilient. Debt levels have continued to rise in a number of major economies, where liquid assets held by households have also declined, increasing liquidity mismatches. In emerging markets, household vulnerabilities have stayed elevated.

In the *financial* sector, the global banking system has continued to recover from the initial pandemic shock, with more than half of bank assets in systemically important economies now in low-risk categories. Leverage and capital measures have continued to improve across advanced economies, while better liquidity measures driven by ample deposit inflows have reduced vulnerabilities in some emerging markets.

Among *nonbank financial institutions*, vulnerabilities in the insurance sector have intensified in many jurisdictions (particularly the United States and the euro area), driven by a deterioration in credit and leverage indicators. Outside this sector, however, vulnerabilities have generally decreased. Among asset managers, a decline in leverage and credit exposures has led to marginal improvements in most advanced and other emerging market economies. By contrast, vulnerabilities remain elevated at Chinese entities due to rising maturity mismatches and financial interconnectedness with banks. Recent market reverberations around the property developer Evergrande highlighted such vulnerabilities. The euro area saw improvements at other financial institutions due to lower interconnectedness risks and reduced liquidity and maturity mismatches.

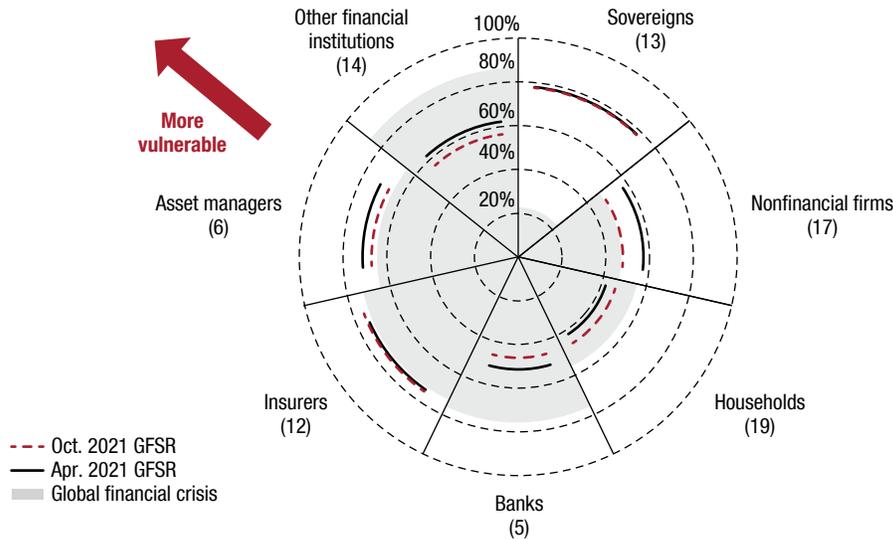
The authors of this box are Sergei Antoshin, Yingyuan Chen, Fabio Cortes, Rohit Goel, Frank Hespeler, and Tom Piontek.

¹The focus of the framework is restricted to on-balance-sheet vulnerabilities, given the absence of available data for off-balance-sheet vulnerabilities for a cross-section of countries. Due to the nature of the data and their reporting frequency, most of the current data points are through the fourth quarter of 2020. For further details on the methodology employed in the framework, see Online Annex 1.1 of the April 2019 *Global Financial Stability Report*.

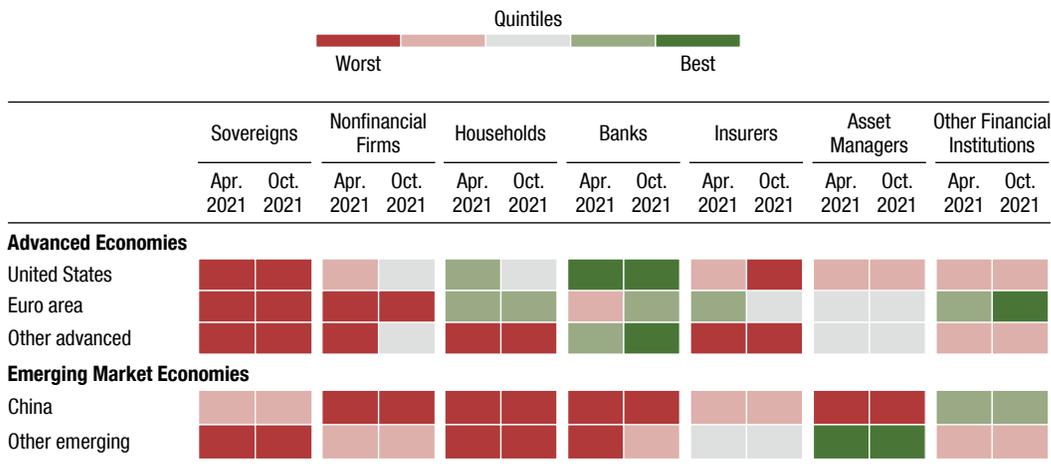
Box 1.1 (continued)

Figure 1.1.1. Global Financial Vulnerabilities

1. Proportion of Systemically Important Economies with Elevated Vulnerabilities, by Sector
 (Percent of countries with high and medium-high vulnerabilities, by GDP [assets of banks, asset managers, other financial institutions, and insurers]; number of vulnerable countries in parentheses)



2. Financial Vulnerabilities, by Sector and Region



Sources: Banco de Mexico; Bank for International Settlements; Bank of Japan; Bloomberg Finance L.P.; China Insurance Regulatory Commission; European Central Bank; Haver Analytics; IMF, Financial Soundness Indicators database; IMF, World Economic Outlook database; Reserve Bank of India; S&P Global Market Intelligence; S&P Leveraged Commentary and Data; Securities and Exchange Commission of Brazil; Securities and Exchange Board of India; WIND Information Co.; and IMF staff calculations.
 Note: In panel 1, global financial crisis reflects the maximum vulnerability value during 2007–08. In panel 2, dark red shading indicates a value in the top 20 percent of pooled samples (advanced and emerging market economies pooled separately) for each sector during 2000–21 (or longest sample available), and dark green shading indicates values in the bottom 20 percent. In panels 1 and 2, for households, the debt service ratio for emerging market economies is based on all private nonfinancial corporations and households. In panel 2, the vulnerability value for euro area asset managers in 2020:Q4 is just below the threshold for the third quintile but has been overruled by expert judgment based on data availability. Euro area asset managers hence remain in the third vulnerability quintile in 2020:Q4. Other systemically important advanced economies are Australia, Canada, Denmark, Hong Kong SAR, Japan, Korea, Norway, Singapore, Sweden, Switzerland, and the United Kingdom. Other systemically important emerging market economies are Brazil, India, Mexico, Poland, Russia, and Turkey. GFSR = *Global Financial Stability Report*.

Box 1.2. Walking a Tightrope: Challenges for Life Insurers

The insurance industry is at the center of fixed-income markets, holding about 20 percent and 30 percent, respectively, of outstanding global bonds and corporate bonds. Given their long-dated liabilities, life insurers represent a critical source of demand for bonds with long maturities.¹ This box looks at the challenges they face in a low-for-long yield environment and assesses the impact of different scenarios for bond yields on their assets.

While a gradual yield increase would help mitigate life insurers' long-term challenges—by reducing asset-liability duration mismatches and the negative spread of investment yields to guaranteed policy rates—a stress scenario with a large, sudden increase in bond yields and widening of corporate spreads could hurt them significantly. Importantly, if a large increase in policy surrenders were to occur in such a scenario, life insurers might be forced to liquidate investments—a procyclical response that would amplify the initial shock.

Life insurers are still facing elevated asset-liability-duration mismatches, particularly in some jurisdictions (Figure 1.2.1, panel 1). At the same time, although life insurers have made inroads in reducing average guaranteed policy returns in recent years, the spreads of investment yields to such guaranteed returns remain negative, at historically wide levels (Figure 1.2.1, panel 2). Seeking to improve their return on investments, US and European life insurers have increased their share of lower-quality bond investments; in Japan, the life insurers' portion of higher-yielding foreign investments has risen (Figure 1.2.1, panel 3).

A scenario of a rapid and disorderly increase in bond yields—triggered, for example, by inflation fears—could pose challenges to life insurers, particularly if coupled with wider corporate bond spreads.²

The authors of this box are Fabio Cortes and Deepali Gautam.
¹Life insurers account for almost half of global insurance premiums.

²Sample: Austria, Belgium, France, Germany, Italy, Japan, The Netherlands, Norway, Portugal, Spain, Sweden, United Kingdom, United States. These countries represent over two-thirds of insurance premiums globally. The stress scenarios are described in the note to Figure 1.2.1.

Panel 4 of Figure 1.2.1 shows that life insurers with longer durations and a greater share of riskier corporate bonds in their portfolios would be hit the hardest by a sudden increase in yields. US and UK life insurers are particularly sensitive to a worst-case yield increase and wider corporate spread scenario, with estimated losses exceeding 30 percent of their assets compared with less than 10 percent in the more modest yield increase scenario (see details in the note to Figure 1.2.1 for a description of the three scenarios).

A severe scenario of a sudden spike in yields could also lead to policy surrenders. Most life insurance policies have a series of protections against the risk that policyholders lapse their policies, including exit penalties, accumulated bonuses embedded in guarantees, and tax disincentives. Therefore, it is unlikely that life insurers would face a sharp increase in surrenders in most scenarios. However, a scenario of bond yields increasing 200 basis points or more—similar to the worst-case yield increase and wider corporate stress scenario—could be associated with a significant increase in lapse rates as policyholders may surrender their policies for new policies or other financial products offering higher yields.³ In its most stressed scenario, the European Insurance and Occupational Pensions Authority (EIOPA 2020) estimates that surrender volumes could increase to €372 billion in Europe.⁴ This would generate a shortfall of about €340 billion, which could be covered through asset sales. Assuming that US life insurance companies faced similar lapse rates, surrenders could amount to over \$550 billion in the United States, about \$1 trillion in combined surrenders. While this is less than 2 percent of the total market value of US and European fixed-income markets, its impact could be significant if it coincides with selling pressure from other investors in a stressed scenario.

³Moody's (2021) estimates that \$500 billion (31 percent of US life insurance policies) is surrenderable with low penalty; ESRB (2015) calculates that 90 percent of contracts can be surrendered with a penalty lower than 15 percent of the policy value.

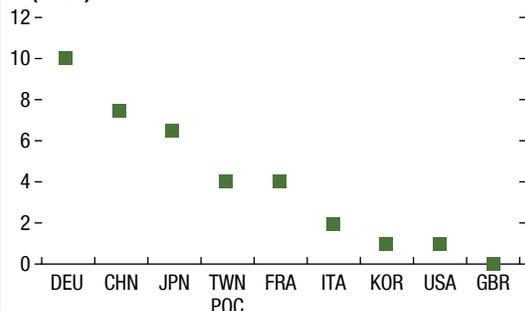
⁴EIOPA (2020) estimates surrender volumes of €372 billion after assuming a lapse rate of 25 percent for traditional life contracts with surrender penalties and a lapse rate of 75 percent for traditional life contracts without surrender penalties.

Box 1.2 (continued)

Figure 1.2.1. Challenges of Life Insurers: Assessing the Impact of a Sudden Spike in Yields

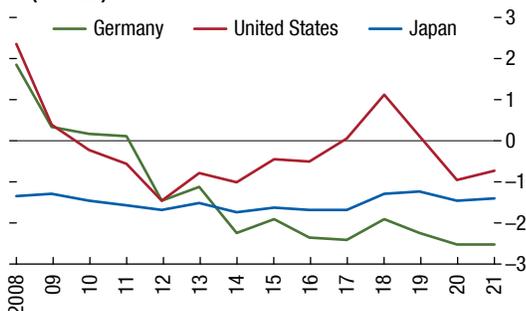
The asset-liability mismatches of some life insurers remain large ...

1. Average Asset-Liability Duration Mismatches (Years)



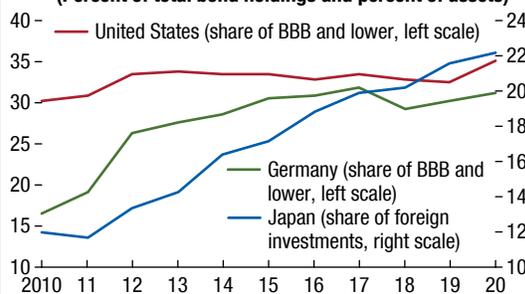
... with spreads of investment yields to guaranteed returns negative and close to record lows.

2. Spread of Investment Yields to Average Guaranteed Returns (Percent)



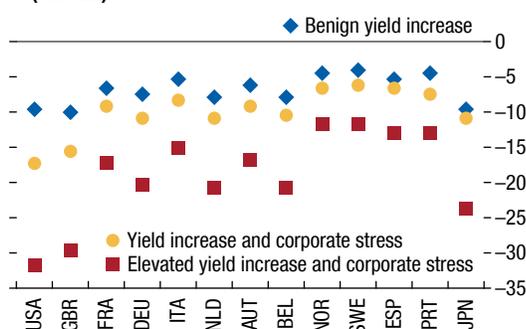
Life insurers' risk-taking is elevated as a result ...

3. Share of BBB-Rated and Lower-Rated Bonds in Fixed Income Portfolios, and Share of Foreign Investments (Percent of total bond holdings and percent of assets)



... making them particularly sensitive to a sudden yield spike and wider credit spreads.

4. Simulated Mark-to-Market Shock to Assets (Percent)



Sources: Bloomberg Financial L.P.; European Insurance and Occupational Pensions Authority; General Insurance Association of Japan; Moody's; National Association of Insurance Commissioners; SNL Financial; and IMF staff calculations.

Note: The investment yields in panel 2 are estimated as the average yield on the fixed-income portfolios of life insurers in each jurisdiction, and may underestimate actual investment yields as they exclude any yield from investments in other asset classes, equities and real estate in particular. Bloomberg Barclays domestic bond indices are used as proxies, with the calculations assuming all of the Japanese foreign exposure is invested in an equally weighted mix of US corporate and 10-year Treasury bonds. Moody's is the source for the average guaranteed returns in each jurisdiction. The calculations in panel 3 include investments in both corporate and sovereign bonds and aggregate data for individual life insurance companies in each jurisdiction. Shocks in the sensitivity scenarios in panel 4 are applied to aggregate sector balance sheets of life insurers as of December 2020 (Europe and United States) and February 2021 (Japan). The data include detailed asset class exposure by rating as well as duration. Derivative positions and loss absorption by policyholders and by taxes and regulatory adjustments are not taken into account. This implies that results should be considered an upper-bound impact. Panel 4 runs three yield increase scenarios: benign yield increase (sovereign bond yield increases but no corporate stress), yield increase and corporate stress (greater sovereign bond yield increases at lower ratings and wider corporate spreads), and elevated yield increase and corporate stress (much greater sovereign bond yield increases across all ratings and wider corporate spreads; larger losses in equity and real estate markets). The following shocks are applied in the benign yield increase scenario: equity (-5 percent), real estate (-2 percent), and all sovereign and corporate bond yields up +100 basis points regardless of credit rating. The shocks for the yield increase and corporate stress scenario are equity (-10 percent); real estate (-6 percent); sovereign bond yields AAA-A (+100 basis points), BBB (+150 basis points), and <BBB (+200 basis points); and corporate bond yields AAA-A (+150 basis points), BBB (+250 basis points), and <BBB (+300 basis points). The shocks for the elevated yield increase and corporate stress scenario are equity (-20 percent); real estate (-10 percent); sovereign bond yields AAA-A (+200 basis points), BBB (+250 basis points), and <BBB (+300 basis points); and corporate bond yields AAA-A (+250 basis points), BBB (+350 basis points), and <BBB (+400 basis points). To put the magnitude of these shocks in context, the European Insurance and Occupational Pensions Authority (EIOPA) ran a yield curve up scenario in 2018 where the shocks applied to the balance sheets of life insurers were close to the elevated yield increase and corporate stress scenario. For example, EIOPA's stress test assumed a +175 basis point increase in 10-year US Treasury yields, a +222 basis point increase in 10-year Spanish government bond yields, a 40 percent drop in equities, and a +235 basis point and +256 basis point increase in US AA-rated nonfinancial and financial corporate bonds, respectively. See EIOPA (2018) for further details. Data labels use International Organization for Standardization (ISO) country codes.

Box 1.3. Fintech Lending: Lessons Learned from the COVID-19 Crisis

Financial technology (fintech) lending is considered to promote financial inclusion and support credit provision to households and firms that may not have access to traditional lenders. Fintech banks compete with traditional banks to provide online and mobile banking services, such as account opening, transfers, and loans, while nonbanks provide payment platforms as well as secured and unsecured small loans to consumers and small and medium-sized enterprises. As fintech lending is a relatively new phenomenon, little is known about the ability of such lenders to withstand economic shocks. This box analyzes the performance of fintech lenders in 20 economies during the pandemic to draw early lessons.¹

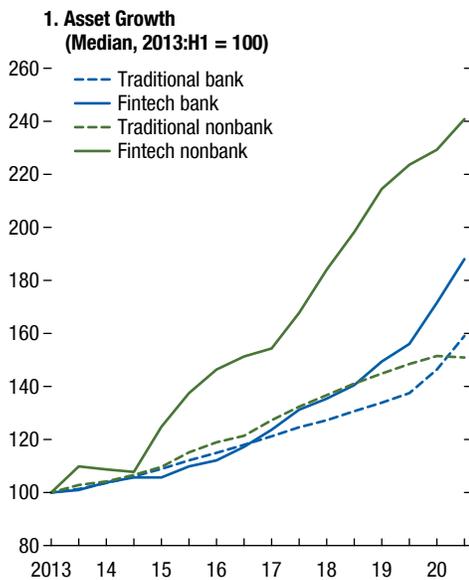
The authors of this box are Junghwan Mok and Tomohiro Tsuruga.

¹In this exercise, four categories of lenders are considered: traditional banks, traditional nonbanks (for example, credit

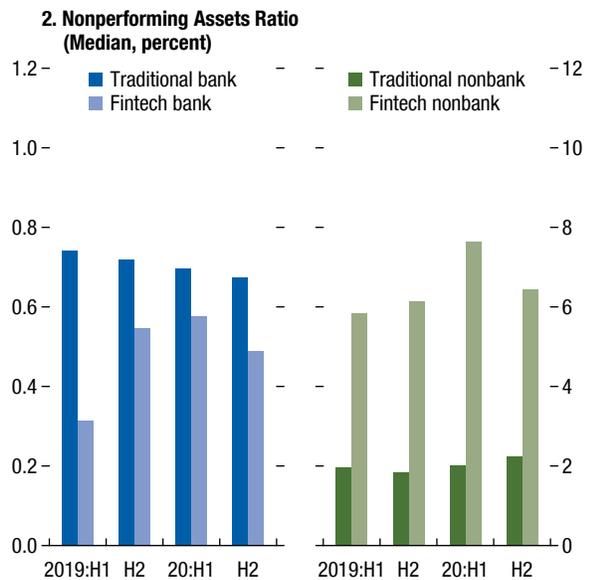
card issuers, sales finance companies), fintech banks (for example, internet banks), and fintech nonbanks (for example, online consumer lending platforms). The sample covers 2013:Q1–2021:Q1. The regression controls for macroeconomic conditions and lender characteristics and includes the ratio of COVID-19 infection cases to population, lagged GDP growth, total capital ratio, log of total assets, quarter dummies, and fintech dummies.

Figure 1.3.1. Performance of Fintech Lenders during the COVID-19 Crisis

Fintech lenders have grown steadily over the years, and the trend continued in 2020.



However, the nonperforming assets ratios also picked up during the COVID-19 crisis.



Sources: S&P Capital IQ; S&P Global Market Intelligence; and IMF staff calculations.

Note: Sample comprises 13 advanced economies (CAN, DEU, ESP, FRA, GBR, HKG, ITA, JPN, KOR, NZL, SGP, SWE, USA), and seven emerging market economies (ARG, BRA, CHN, IDN, MEX, RUS, ZAF) where the three-digit codes are International Organization for Standardization (ISO) codes. Banks and nonbanks are classified as fintech if (1) they are labeled by S&P Capital IQ as a technology-related service (for example, “data processing and outsourced services,” “consumer digital lending,” “commercial digital lending,” and so on), (2) their corporate description contains technology-related words (for example, “digital,” “online,” and so on), (3) there are fewer than three branches, and (4) they were established after 1995. Entities with subsidiaries, parents, alliances, and suppliers that meet (1)–(3) are also classified as fintech.

Box 1.3 (continued)

The COVID-19 crisis does not appear to have had much negative impact on the asset growth of fintech lenders. Assets for fintech banks and nonbanks increased by 18 percent and 7 percent, respectively, over 2019–20, outpacing asset growth of traditional lenders. However, the nonperforming asset rate of fintech lenders also increased during the pandemic, while that of traditional lenders stayed broadly constant.

What might explain these observations? Containment measures implemented in response to the pandemic are likely to have prompted a shift in economic activities from physical to digital, increasing the demand for fintech credit. Moreover, the severe economic downturn accompanying the pandemic hit retail borrowers and small and medium-sized enterprises particularly hard, which may have impacted

their ability to access credit from traditional banks, inducing them to shift to fintech lenders. This would explain both the expansion in fintech credit and the deterioration in fintech asset quality. Indeed, a simple regression analysis shows that an increase in COVID-19 infection cases (a proxy for the stringency of containment measures) is associated with higher asset growth of fintech nonbanks and a decline in their return on assets.

These findings suggest that, while fintech lending may be a useful resource to reach a broader range of borrowers, it could also undermine financial system stability, as the borrower base of such creditors could be weak. National authorities should therefore closely monitor the activity and risk management practices of fintech lenders to strike the right balance between financial inclusiveness and stability.

Box 1.4. Climate Change and Financial Vulnerabilities in China

The prospect of more restricted access to credit for weak borrowers in China may have financial stability implications during the planned transition to carbon neutrality by 2060 if not managed carefully. In carbon-intensive sectors, many firms face liquidity risk, as their combined interest expense and short-term debt are greater than their combined earnings and liquid assets. With credit extended to firms with liquidity risk totaling about 10 percent of GDP, policy

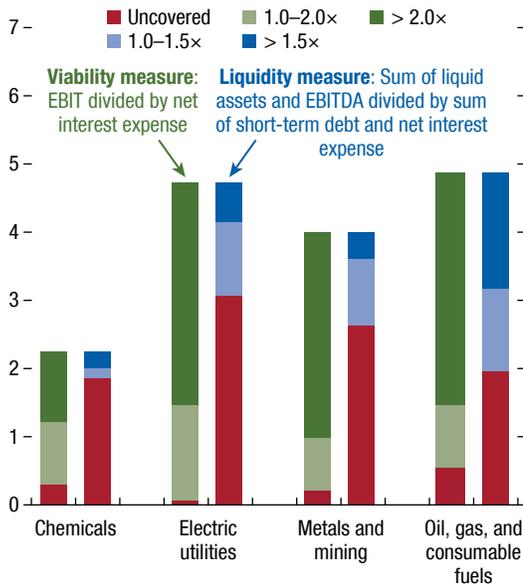
coordination among Chinese agencies is essential to ensure an orderly transition (Figure 1.4.1, panel 1). Net bond issuance of firms in carbon-intensive sectors (chemicals, coal operations, metal and mining, and oil and gas) moderated after the carbon-neutrality commitment announced in September 2020 and then turned negative after local state-owned-enterprise bond defaults in late 2020 (Figure 1.4.1, panel 2). This partially reflects concerns about more limited state support for such industries. Relative to their GDP size, provinces with weaker public finances also tend to be exposed to larger corporate debt from these sectors.

The authors of this box are Henry Hoyle, Phakawa Jeasakul, and Hong Xiao.

Figure 1.4.1. China: Credit Conditions and Financial Vulnerabilities

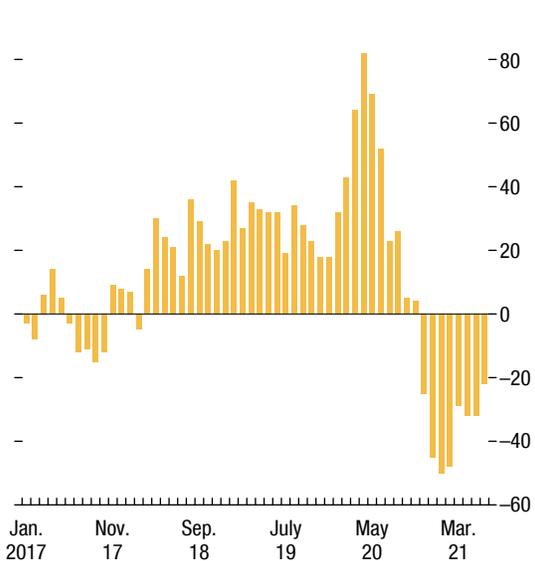
Climate-related financial risks could rise, with many carbon-intensive firms facing weak profitability and/or liquidity vulnerabilities.

1. Chinese Nonfinancial Firms: Debt in Selected Sectors, by Borrower Characteristics, 2020 (Percent of GDP)



New decarbonization policies could put additional market pressure on borrowers in carbon-intensive sectors whose net bond issuance has recently already been negative.

2. Chinese Nonfinancial Corporate Bonds: Net Issuance by Carbon-Intensive Sectors (Billions of renminbi; three-month moving average)



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

Note: In panel 1, the electric utilities sector excludes renewable energy firms. In panel 2, the carbon-intensive sectors include coal operations, chemicals, metals and mining, and oil and gas. EBIT = earnings before interest and taxes; EBITDA = earnings before interest, taxes, depreciation, and amortization.

Box 1.5. Recent Developments at Evergrande

Against the backdrop of a regulatory campaign to rein in the large and highly leveraged real estate sector, market participants have become increasingly concerned about a possible default by Evergrande, one of China’s largest property developers. Evergrande, with about \$304 billion in total liabilities, including some in offshore markets, has recently seen its bond prices reach distressed levels and its share price fall more than 70 percent since mid-2021 (Figure 1.5.1, panel 1). Contagion so far has been limited to other financially weak property developers and lower-rated firms. However, while the authorities have the tools to step in if the situation were to escalate, there is a risk that broader financial stress may emerge, with implications for both the Chinese economy and financial sector as well as global capital markets at the extreme.

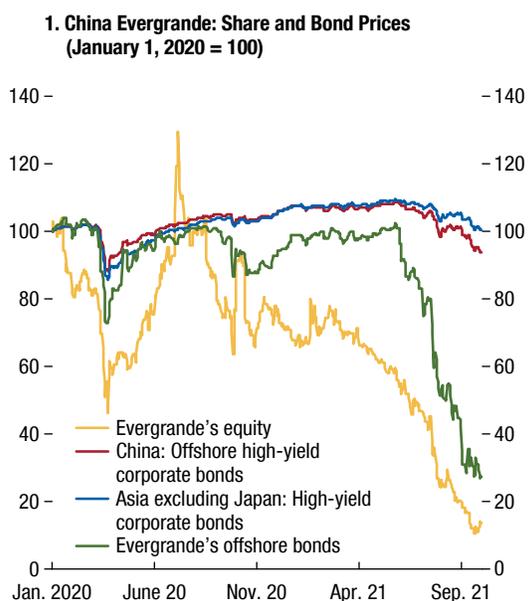
There are a number of macro-financial channels through which strains could be transmitted.

The authors of this box are Fabio Natalucci and Helge Berger.

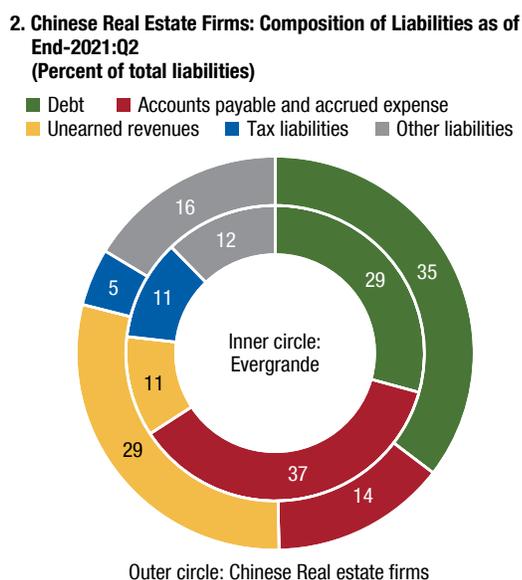
- In terms of potential domestic financial effects, aggregate direct exposures of Chinese banks to Evergrande appear to be limited, although smaller banking institutions with weaker capital positions may face challenges. However, should stress spread widely to the broader property development sector, the exposures of the financial system would be meaningfully larger. A number of financial institutions are involved (including banks, trust companies, and other shadow banking entities), directly through loans, bonds, and other credit instruments, as well as indirectly via guarantees and contingent liabilities, often through opaque and difficult-to-quantify channels that create a high degree of interconnectedness within the financial system. In addition, with property developers accounting for a notable share of borrowing in offshore markets, these markets could come under stress and create funding challenges also for other issuers.

Figure 1.5.1. China: Evergrande and Property Developers under Pressure

Contagion so far has been limited ...



... but Chinese real estate firms have sizable non-debt liabilities.



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

Note: In panel 1, Evergrande’s bond prices are a weighted average by issuance amounts. In panel 2, Evergrande’s total liabilities amounted to \$304 billion, and the real estate sector’s total liabilities amounted to \$4.84 trillion.

Box 1.5 (continued)

- Macroeconomic repercussions could greatly magnify the impact of financial stress, with a feedback loop back to financial conditions. Knock-on effects on real estate firms could adversely impact growth given sizable liabilities to various counterparts (Figure 1.5.1, panel 2). A sustained fall in house prices could weigh on consumer confidence and spending. Local government land sale revenues could fall, forcing local governments to reduce public investment and reinforcing investor concerns about state support for local government-owned entities, especially in provinces with weak public finances.
- Finally, a slowdown in economic growth and a tightening in financial conditions in China could bring spillovers to the rest of the world—for example, through direct exposures of international investors to Chinese financial assets (which has been growing as a result of the inclusion of China in global benchmark indices), a deterioration in global risk appetite at a time when asset valuations are

stretched, and a tightening in financial conditions in emerging markets.

What are Chinese policymakers to do? Longer term, corporate restructuring and insolvency frameworks need to be strengthened to facilitate market-based exit of nonviable firms. In the short term, the tools are available to contain and manage potential financial stress and lessen any adverse impact on the economy. But there are challenging trade-offs in terms of the extent of support to affected financial entities and sectors and the timing of the intervention. The broader the support measures, especially if accompanied by an actual or perceived relaxation of the broader effort to delever the financial system over time, the greater the risk of financial fragilities reemerging in the future. Similarly, earlier and clearly communicated intervention would likely minimize the risk of contagion, although at the cost of reinforcing a perception of individual firms being too big to fail. Postponing support to the financial system to instill market discipline may, however, require broader measures to manage financial stress.

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