GLOBAL MARKETS ANALYSIS
Monetary and Capital Markets

China Monitor

THURSDAY, MAY 5, 2022

CHINA MONITOR

The Monitor aims to provide a regular update on the policy setting, credit conditions and market trends in China. It also includes analytical features which offer more in-depth analyses of selected macrofinancial issues related to China.

KEY HIGHLIGHTS

Market trends. ***Chinese equities have declined sharply*** amid growing concerns of the economic impact of China's lockdowns to contain COVID-19 outbreaks against the backdrop of less forthcoming policy support. Chinese tech stocks remain underperforming following a series of regulatory tightening. ***Short-term government bond yields declined*** in April on the back of lower interbank repo rates. Meanwhile, longer-end yields have been little changed, potentially anchored by the rise in U.S. interest rates. ***RMB depreciated sharply*** in late April amid concerns of China's growth slowdown and foreign fund outflows. Markets are closely watching policy signals for authorities' preferred RMB path. ***Equities and bonds of distressed property developers remain under significant market pressure***. A large portion of offshore bonds issued by real estate firms are currently traded at significant discounts, indicating a high probability of future debt restructurings.

Policy setting. ***China's economic growth is projected to slow sharply*** to 4.4 percent in 2022 from 8.1 percent in 2021, with growth being downgraded (April WEO) to reflect the economic impact of the Russia-Ukraine war and pandemic-related lockdowns in China. The April Politburo meeting reiterated the zero COVID policy and maintained the growth target (at 5.5 percent), following President Xi's call for an "all-out" infrastructure push. The fiscal stimulus, especially infrastructure investment, is expected to take a lead in supporting the economy. Meanwhile, the People's Bank of China (PBC)'s delivery of monetary policy easing has fallen short of market expectations, dampening market sentiment in April. While not lowering policy rates, the PBC expanded its re-lending scheme and pledged to maintain adequate liquidity.

Credit conditions. ***Growth of total credit excluding government bond credit has been stable*** at around 9.1 percent during 2021Q4-2022Q1. Growth of total social financing has picked up recently on the back of front-loaded government bond issuance and growing bill financing, while growth of longer-term bank lending remains relatively weak. ***Bond defaults have increased sharply in 2021***, driven by property developers.

Analytical features. ***This monitor analyzes the deepening financial stress in the property sector.*** Property developers are increasingly facing liquidity stress amid reduced bank and nonbank financing and falling housing sale receipts. The weakening of homebuyers' confidence in property developers has decreased pre-sale transactions, an increasingly important funding source for property developers in recent years. As a result, property developers' liquidity situation has further deteriorated, making it more difficult to complete unfinished construction. The deepening financial stress in the property sector will dampen real estate investment and household consumption, increase financing pressures for local governments, and heighten financial stability risks. ***This monitor also reviews recent housing market developments.*** As financial stress in the property sector deepens, real estate investment and house prices have fallen. Housing market conditions vary across regions in terms of the extent of overly stretched house price valuation, the stock of unfinished construction of pre-sold housing, and the prevailing local credit conditions, which are increasingly influenced by the strength of local governments' public finances.

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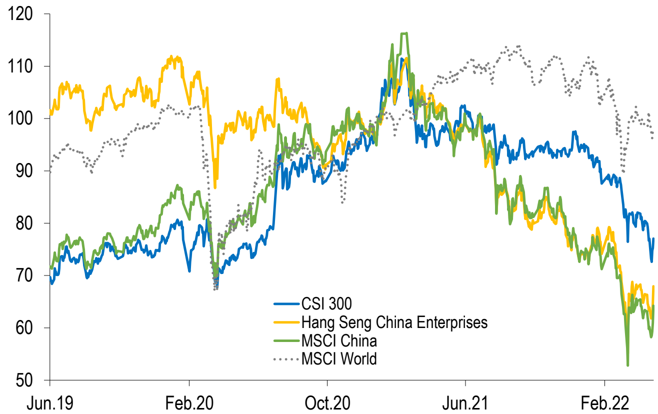
Chinese Equities Have Declined Sharply Amid Growing Concerns about the Economic Impact of Lockdowns to Contain COVID-19 Outbreaks

In April 2022, Chinese equities have declined sharply ...

1. Equity Prices

(End-2019 = 100; Based on prices in RMB)



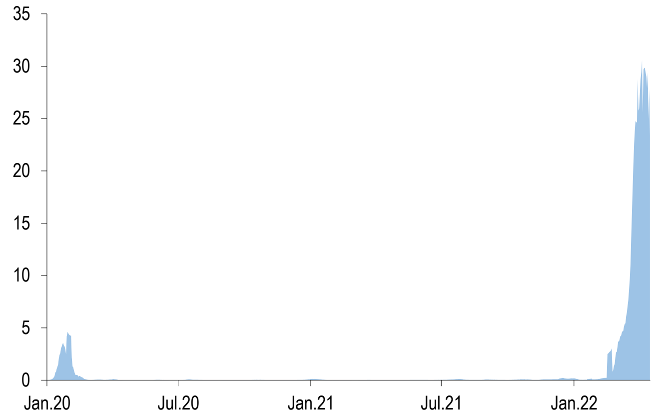
Sources: Bloomberg; and IMF staff calculations.

- In mid-March, Chinese equities rebounded strongly following the pledge of policy support.
- However, market sentiment weakened in April. COVID-19 outbreaks prompted lockdowns that adversely affected economic activity, while policy support appeared less forthcoming.
- The Russia-Ukraine war triggered risk-off sentiment and prompted some investors to reassess geopolitical risk and its implications for holding Chinese assets.

... as markets are increasingly concerned about the economic consequences of COVID-19 outbreaks.

2. New COVID-19 Infection Cases

(In thousands; 7-day average)



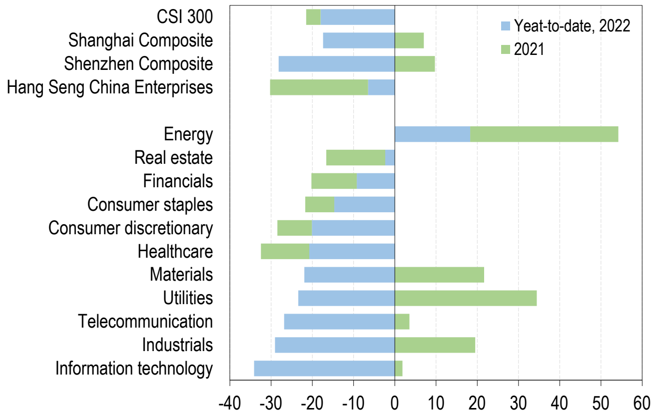
Sources: Bloomberg; and IMF staff calculations.

- The recent lockdowns, especially in Shanghai, have raised concerns about supply-chain disruptions. Contact-intensive activities will be more severely affected, contributing to uneven economic growth.
- The April Politburo meeting reiterated the zero COVID policy and maintained the economic growth target.
- In the last week of April, market sentiment improved somewhat after President Xi also called for an "all-out" infrastructure push.

Stock prices suggest that firms in IT, industrials and telecom sectors will face greater supply-chain disruptions.

3. Change in Equity Total Return, Since End-2020

(In percent)



Sources: Bloomberg; and IMF staff calculations.

- The Russia-Ukraine war has raised concerns about global supply-chain disruptions given Russia's role in supplying key raw materials for semiconductors, in addition rising global food and energy prices.
- Energy firms benefited from high global energy prices. Major state-owned real estate firms, typically listed locally, outperformed on easing property sector policy.

Chinese tech stocks have declined since early 2021 amid continued regulatory uncertainty.

4. Equity Prices of Tech Companies

(End-2020 = 100; Based on prices in HKD)

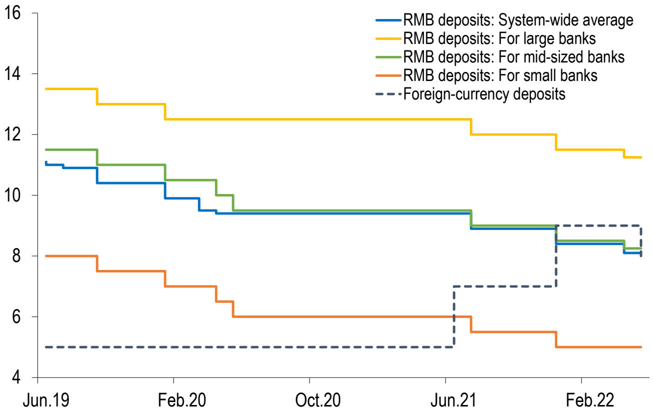
Sources: Bloomberg; and IMF staff calculations.

- Chinese tech firms have endured domestic regulatory tightening and the U.S.'s tough stance on China. The latter includes trade and investment restrictions, as well as potential de-listing from U.S. stock markets (due to auditing issues).
- The April Politburo meeting vowed to promote the healthy development of the platform economy.

Monetary Policy Easing Fell Short of Market Expectation, Weakening Market Sentiment

In April 2022, the PBC lowered the overall RRR for RMB deposits by 0.25 bps, smaller than expected (consensus: -50 bps).

5. Banks' Reserve Requirements
(In percent)

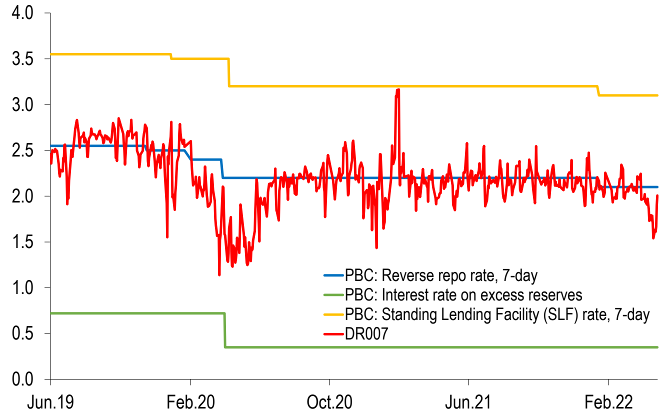


Sources: CEIC; and IMF staff calculations.

- Rural commercial banks and city commercial banks with no branches outside their registered province received an additional RRR cut by 25 bps.
- The PBC also reduced the RRR for foreign-currency deposits by 100 bps to 8 percent, sending a signal that RMB's depreciation occurred too rapidly in late April.

The PBC also kept the 7-day reverse repo rate unchanged at 2.1 percent (consensus: -10 bps).

6. Short-term Policy and Market Rates
(In percent)

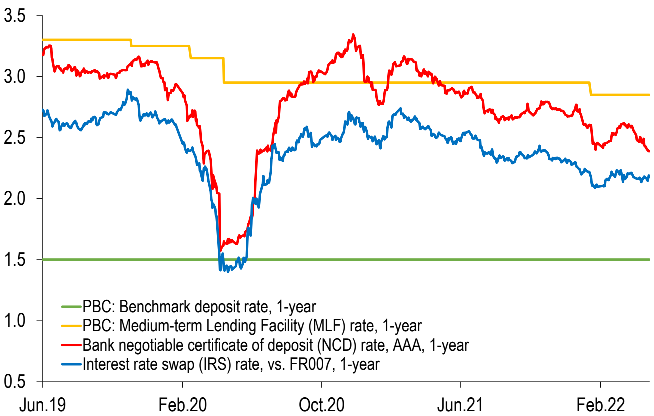


Sources: Bloomberg; and IMF staff calculations.

- The 7-day reverse repo rate, the SLF rate, and the interest on excess reserve were kept unchanged. Nevertheless, DR007 declined in late April despite no change in the policy rates.
- Though reluctant to lower policy rates, the PBC encouraged banks to provide financing support to the economy and expanded its re-lending scheme.

The 1-year MLF rate was also kept unchanged at 2.85 percent (consensus: -10 bps).

7. Medium-term Policy and Market Rates
(In percent)

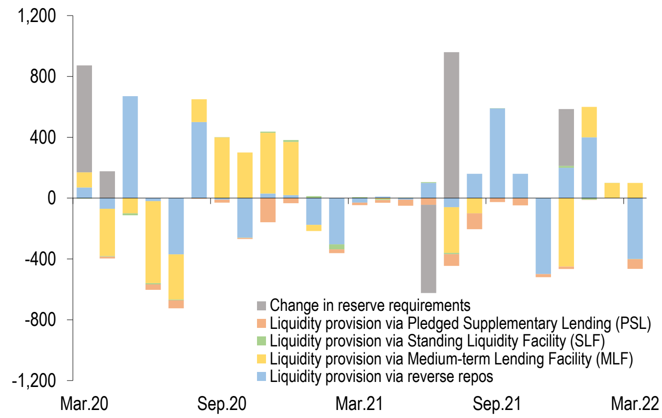


Sources: Bloomberg; and IMF staff calculations.

- While keeping the policy rates unchanged, the PBC guided banks to lower deposit rates by 10 bps through the interest rate self-disciplinary mechanism. Reportedly, large banks have cut their deposit rates in late April, potentially paving a way for a reduction in loan prime rates (LPRs) in May.
- Banks' funding costs may be lowered more meaningfully by a decline in deposit rates than a MLF rate cut.

The PBC has not injected a lot of liquidity in recent months, but liquidity appears adequate.

8. PBC's Selected Liquidity Measures
(In billions of RMB)



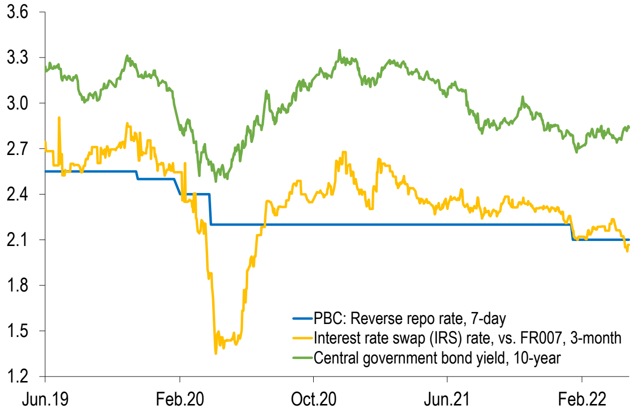
Sources: Bloomberg; CEIC; and IMF staff estimates.

- In March 2022, the PBC withdrew some liquidity mainly by not rolling over maturing reverse repos.
- In April 2022, the PBC continued withdrawing liquidity. According to the PBC, the RRR cut would inject liquidity of 530 billion RMB. Meanwhile, the unwinding of reverse repos withdrew liquidity of 640 billion RMB.
- In a rare instance, interbank repo rates did not spike at end-April even though the PBC did not inject liquidity.

Long-end Bond Yields Have Been Little Changed Year-to-date.

Markets do not expect a substantial monetary policy easing.

9. Policy and Market Rates
(In percent)

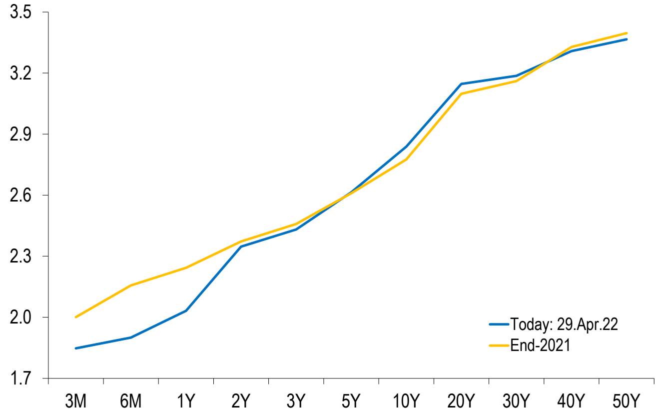


Sources: Bloomberg; and IMF staff calculations.

- In contrast to early 2020, current IRS rates do not suggest a significant further decline in policy rates. The 3-month IRS rate dropped slightly below the current policy rate (at 2.1 percent) near end-April after a sharp decline in R007. Meanwhile, the 12-month IRS rate remains above the current policy rate.

Short-end CGB yields have declined, while yields have been little changed at the longer-end segment, ...

10. Yield Curve of Central Government Bonds (CGBs)
(In percent)

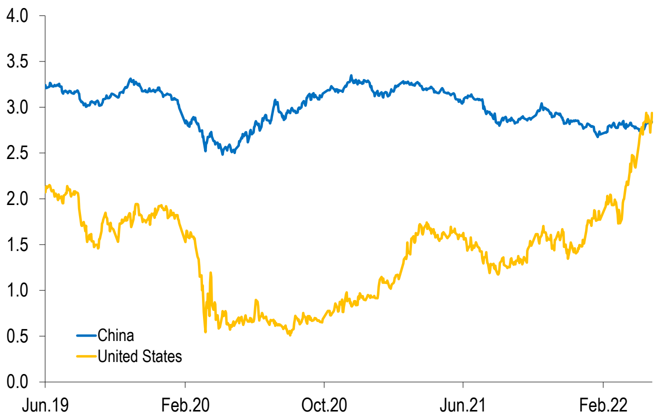


Sources: Bloomberg; and IMF staff calculations.

- The 1-year CGB yield has declined by 21 bps year-to-date. Meanwhile, the 10-year CGB yield have increased 6 bps against the backdrop of rising U.S. treasury yields (10-year: +143 bps).
- Leverage in the bond market remains stable.

... in part due to the rise in U.S. treasury yields and ...

11. Government Bond Yields, 10-year
(In percent)

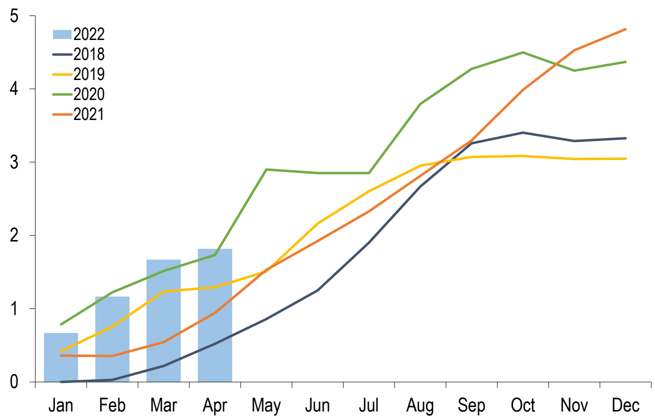


Sources: WIND; and IMF staff calculations.

- U.S. treasury yields have increased sharply in recent months as markets expect aggressive monetary policy tightening by the Federal Reserve to curb inflation.
- The Russia-Ukraine war resulted in higher global food and energy prices, further fueling global inflationary pressure that have built on pandemic-induced supply-chain disruptions and massive policy stimulus especially in major advanced economies.
- China's real bond yields are still higher than U.S. counterparts thanks to its lower inflation.

... and China's front-loading of government bond issuance to support infrastructure investment.

12. Local Government Bonds (LGBs): Cumulative Net Issuance of General and Special Bonds
(In trillions of RMB)



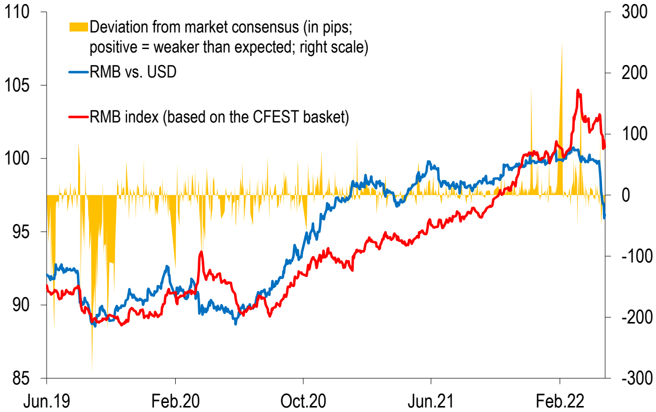
Sources: WIND; and IMF staff calculations.

- Infrastructure investment is a main driver for fiscal stimulus. The 2022 quota for local government special bond issuance was set at 3.65 trillion RMB, unchanged from 2021. Local governments' financial resources are also boosted by 1.2 trillion of carry-over funds.
- Local governments have been encouraged to carry out infrastructure investment, with projects being prepared since late 2021.

RMB Depreciated Sharply in Late April After Policy Signals Put an End to the Steady RMB Appreciation Trend Since Mid-2020

In April 2022, RMB depreciated 4.2 percent against USD after a steady appreciation trend since mid-2020.

13. RMB Exchange Rates, and RMB Fixing
(End-2020 = 100; A higher value means a stronger RMB)

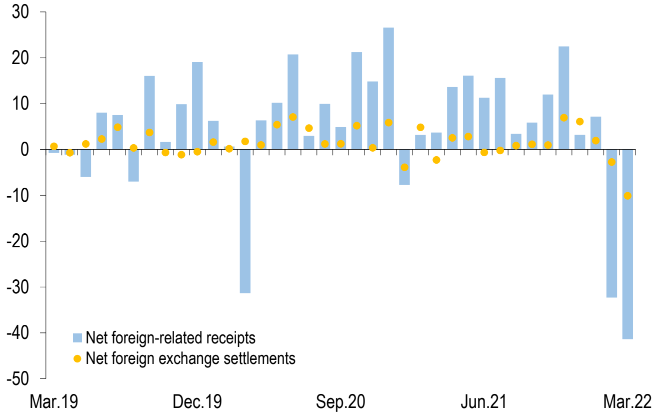


Sources: Bloomberg; and IMF staff calculations.

- On April 20, the PBC set a weaker-than-expected RMB fixing by 101 pips, setting off RMB depreciation for consecutive days.
- On April 25, the PBC reduced the RRR for foreign-currency deposits, releasing some USD liquidity in the domestic market.

RMB has faced depreciation pressure following some foreign fund outflows in February and March.

14. Net Foreign-related Receipts of Banks on Behalf of Clients: Securities Investment
(In billions of USD)

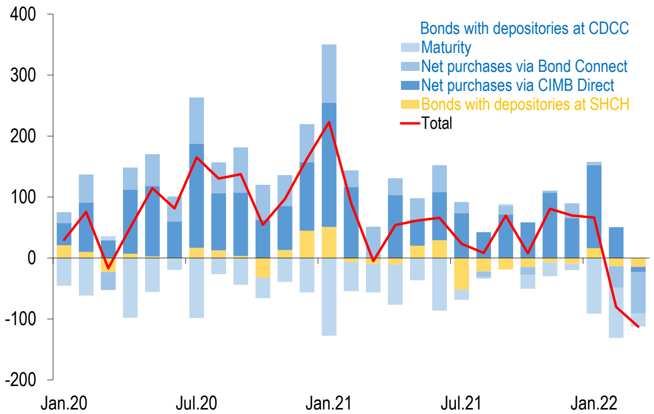


Sources: CEIC; and IMF staff calculations.

- Net foreign-related receipts for securities investment, which reflect bond and equity outflows, amounted to $74 billion in February and March. Net foreign-exchange settlements were much smaller.
- For foreign funds, bond outflows dominated equity outflows.

Bond outflows dominated, potentially induced by a narrowing interest rate differential and some technical factors related to the war.

15. Change in Foreign Holding of Bonds
(In billions of RMB)

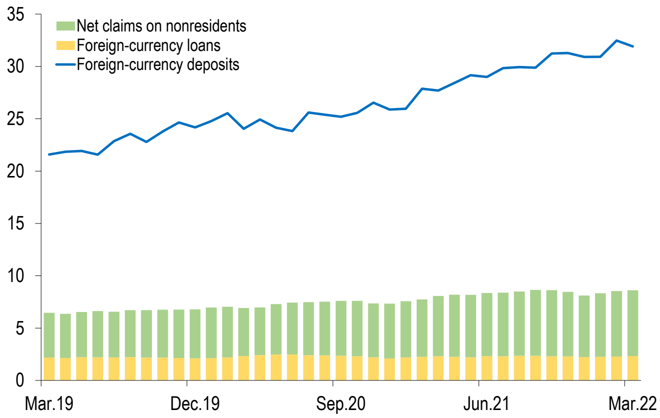


Sources: CEIC; WIND; and IMF staff calculations.

- Reportedly, global investment funds sold China's bonds, which are relatively liquid, to raise cash in expectation of possible redemption pressure following the Russia-Ukraine war. In February, bond outflows were mainly driven by no reinvestment of proceeds from maturing bonds.

China's banks become important players in recycling ever-growing domestic USD deposits of Chinese corporates earned through a massive trade surplus.

16. Banks: Foreign-currency Deposits and Loans, and Net Claims on Nonresidents
(In trillions of RMB)



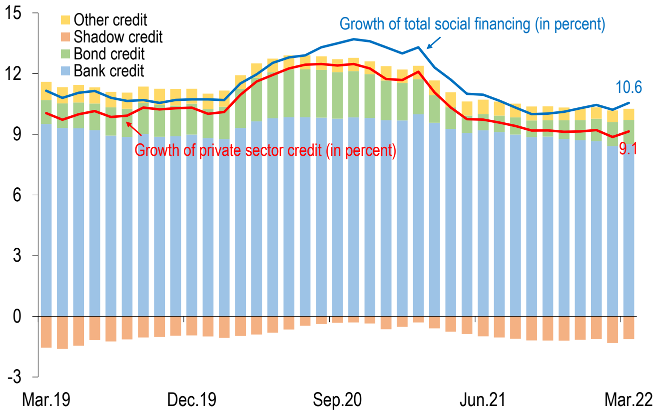
Sources: CEIC; and IMF staff calculations.

- Domestic USD deposits have grown in recent years despite the RMB appreciation trend, reaching 32 trillion RMB in March 2022. Meanwhile, banks' domestic foreign-currency loans and net claims on nonresidents have increased, albeit at a much slower pace.
- The latest outflows episode so far looks different from the 2015-16 episode, which was driven by residents.

Total Social Financing Has Picked up, But Underlying Credit Demand Appears Weak

Credit growth has been stable, with private sector credit (i.e., total credit excluding government bond credit) growing 9.1 percent y/y in March 2022.

17. Contribution to Private Sector Credit Growth
(In percentage points; Year-on-year)



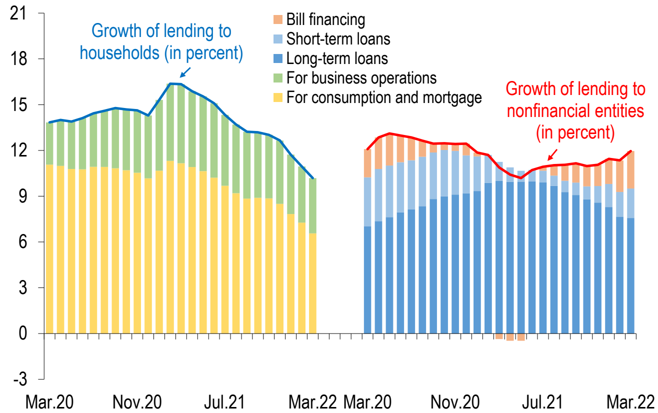
Sources: CEIC; and IMF staff calculations.

Note: Based on total social financing; private sector credit excludes government bond credit and equity financing. Hence, private sector credit include credit provided to state-owned enterprises and local government financing vehicles.

- The earlier private sector credit growth slowdown was driven by the decline in shadow credit (partly due to the reform of wealth management products) and the moderation in bank lending and bond market financing.

Demand of households and businesses for longer-term credit appears weak.

18. Contribution to Bank Lending Growth
(In percentage points; Year-on-year)



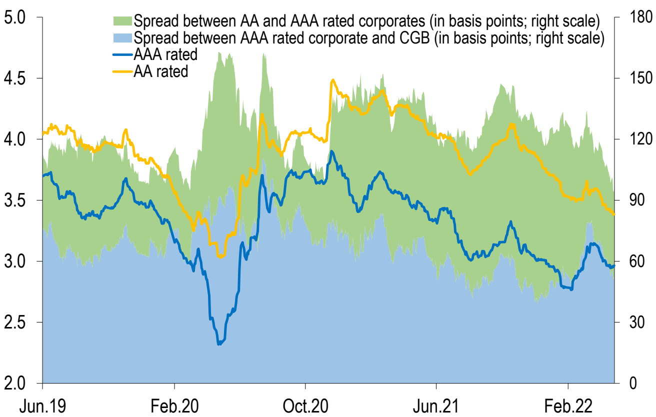
Sources: CEIC; and IMF staff estimates.

Note: Lending to nonfinancial entities, which would include government-linked entities such as state-owned enterprises and local government financial vehicles.

- A stronger-than-expected increase in total social financing in early 2022 was driven by front-loaded government bond issuance and growing bill financing. The latter may reflect banks' efforts to meet authorities' guidance on lending growth targets.

Corporate credit spreads between AAA and AA rated issuers have declined more recently.

19. Onshore Nonfinancial Corporate Bond Yields, 3-year
(In percent)

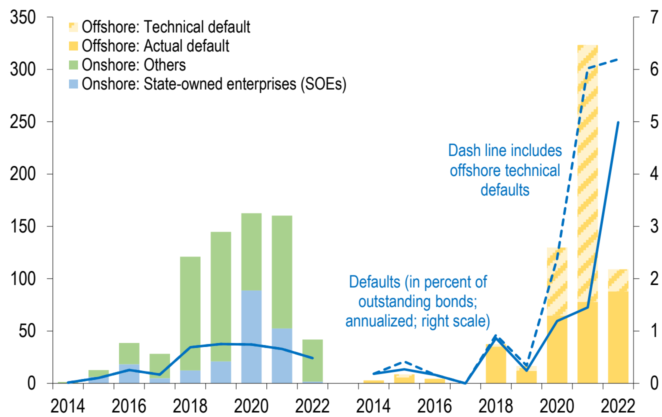


Sources: Bloomberg; and IMF staff calculations.

- Since mid-October 2021, corporate bond yields have fallen, broadly following CGB dynamics.
- Spreads between AAA and AA rated issuers remained relatively wide after unexpected defaults of some state-owned enterprises in late 2020.

In 2021, bond defaults have increased sharply in the offshore markets, driven by property developers.

20. Corporate Bond Defaults
(In billions of RMB)



Sources: Bloomberg; WIND; and IMF staff estimates.

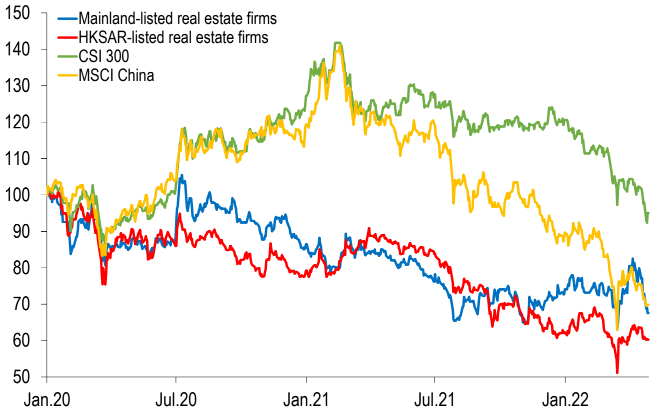
Note: The offshore default figures include defaults of nonbank financial institutions. For 2022, as of April.

- In the onshore market, bond defaults remain roughly the same, though with a larger portion of defaults by private firms.
- In 2022, more property developers faced financing difficulty and missed their bond payments.

Bond and Equity Prices of Distressed Property Developers Remain Depressed

Stocks of real estate firms have been underperforming.

21. Equity Prices
(January 1, 2020 = 100)

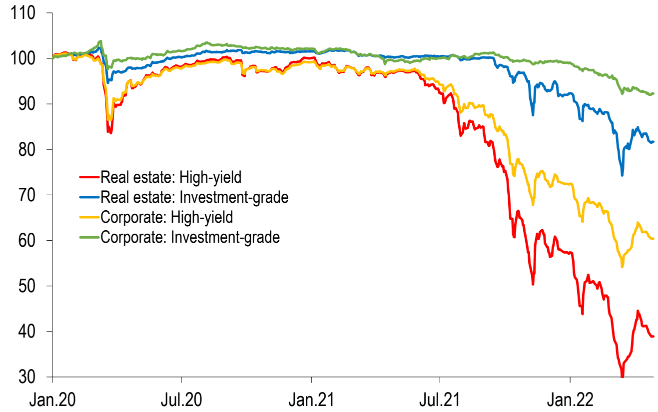


Sources: Bloomberg; and IMF staff calculations.

- Financially weak real estate firms saw their stock prices falling substantially since mid-2021—e.g., Evergrande's share price dropped by almost 85 percent.
- Many HKSAR-listed real estate firms saw their stocks being suspended for trading after failing to release unaudited financial statements by end-March. More could follow if they fail to release audited financial statements in May.
- Meanwhile, share prices of state-owned real estate firms have increased year-to-date.

Meanwhile, offshore bonds issued by real estate firms have declined substantially since mid-2021, ...

22. USD Bond Prices
(January 1, 2020 = 100)

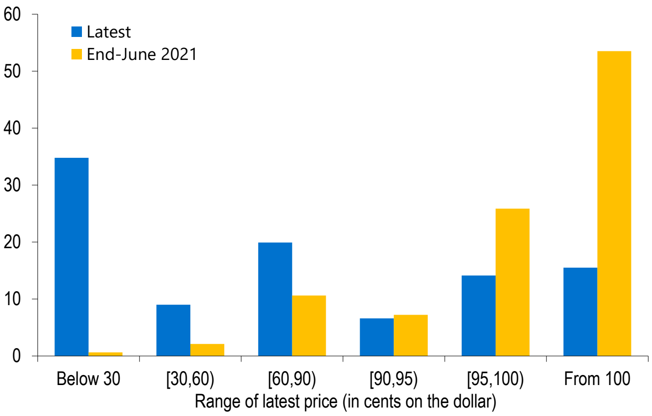


Sources: Bloomberg; and IMF staff calculations.

- Bond prices of state-owned real estate firms have declined marginally as they have relatively strong balance sheets and enjoy perceived state support.
- After a brief rebound from mid-March following the pledge of policy support, stock and bond prices of real estate firms started falling again in April. Market sentiment has weakened due to the worsening COVID-19 situation and the lack of forceful policy support. Lockdowns imposed to contain COVID-19 outbreaks have also limited real estate transactions.

... with a large portion of offshore bonds currently being traded at significant discounts.

23. Price Distribution of Offshore USD Bonds Issued by Real Estate Firms
(In percent of total issuance amount)

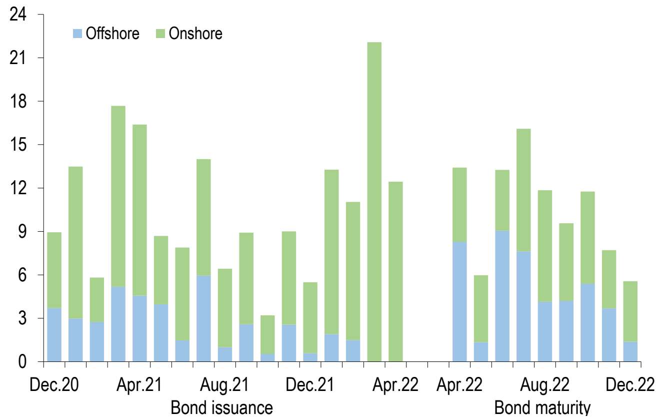


Sources: Bloomberg; and IMF staff calculations.

- Investors are pricing in debt restructuring of many financially weak real estate firms, some of which have defaulted on their bond payments and/or sought to modify their repayment schedule.
- In the offshore markets, stress still largely remains limited to bonds issued by real estate firms.

Market stress will likely continue as real estate firms are facing sizeable refinancing needs in coming months.

24. Real Estate Firms: Bond Issuance and Maturity
(In billions of USD)



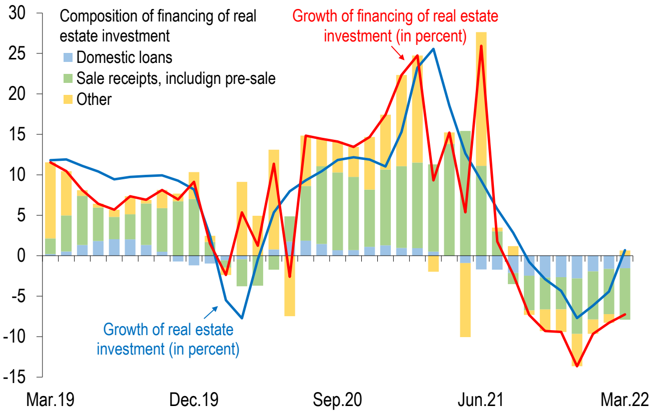
Sources: Bloomberg; and IMF staff calculations.

- In recent months, some real estate firms (excluding local government financing vehicles) still managed to raise funds, albeit only in the onshore market.
- About US$82 billion of bonds issued by real estate firms will mature in the remainder of 2022. Some issuers of these bonds have already defaulted.

Analytical Feature: Deepening Financial Stress in the Property Sector

Real estate investment is slumping as housing sale receipts decline.

25. Real Estate Investment and Contribution to Its Financing
(Year-on-year; 3-month moving average)

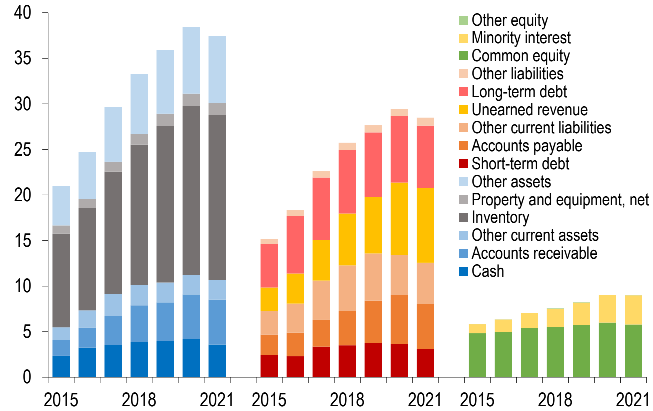


Sources: CEIC; and IMF staff calculations.

- In recent years, housing sale receipts, including deposits, advanced payments and mortgages, are the main funding source for real estate investment, accounting for almost 40 percent of total financing.
- In China, pre-sale transactions are common, accounting for about 90 percent of total housing sales.

Real estate firms have complex balance sheets, with liabilities to a diverse set of creditors.

26. Real Estate Firms: Composition of Assets, Liabilities and Equity
(In percent of GDP)

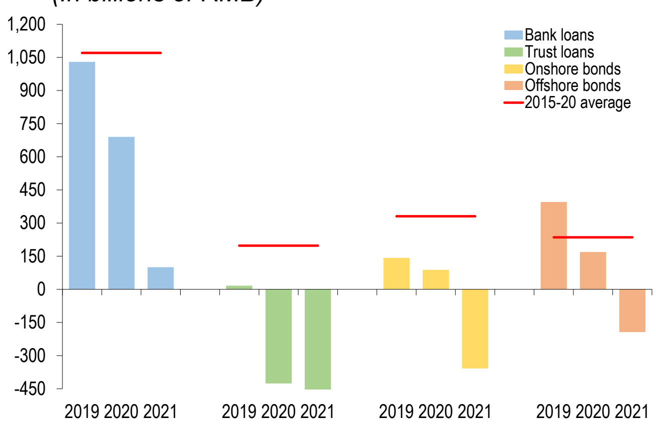


Sources: S&P Capital IQ; and IMF staff calculations.

- As of 2021, total liabilities of real estate firms (in the analysis) amounted to 29 percent of GDP. Their creditors include lenders (e.g., banks, trust companies, and bondholders), business partners, and homebuyers.
- Real estate firms also tend to conduct business with affiliates, with their minority interest accounting for about a third of their total equity. Reportedly, many joint-venture arrangements involve hidden debt.

Real estate firms' funding from the financial system further declined in 2021 due to previous policy tightening and ongoing financial stress.

27. Real Estate Firms' Funding from Financial System
(In billions of RMB)

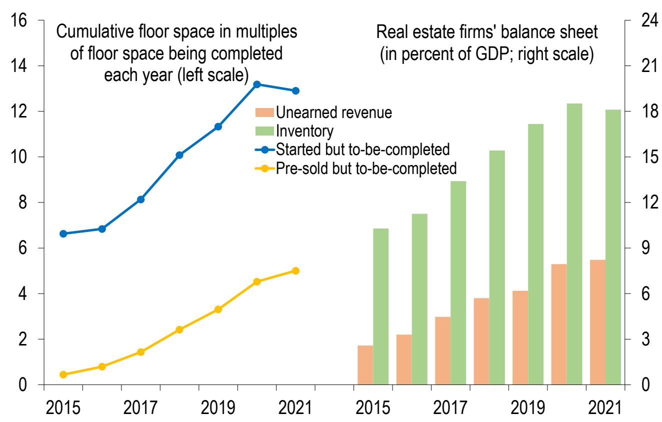


Sources: Bloomberg; CEIC; and IMF staff calculations.

- In 2021, bank lending for real estate development increased by only 100 billion RMB.
- Meanwhile, nonbank financing sources contracted. Trust financing has declined in recent years as part of efforts to reduce risks related to shadow credit. In the bond markets, real estate firms have increasingly faced refinancing difficulties.

The stock of unfinished pre-sold housing is large, weakening confidence of homebuyers, reducing home purchases, and affecting property developers' funding.

28. Pre-sold Housing with Unfinished Construction



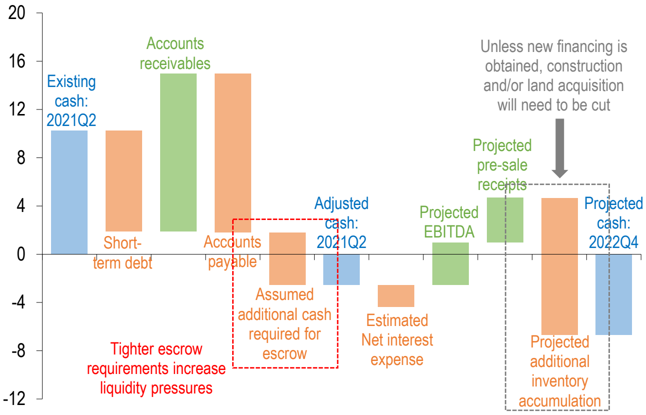
Sources: CEIC; S&P Capital IQ; and IMF staff estimates.

- Some of these unfinished development projects have been pre-sold to homebuyers.
- Real estate firms' sizeable unearned revenue reflects their liabilities to pre-sold homebuyers.

Analytical Feature: Deepening Financial Stress in the Property Sector (continued)

Property developers are facing liquidity strains, with projected cash shortfalls implying that construction and land acquisition will need to be reduced further.

29. Real Estates Firms: Projected Cash Position
(In percent of total assets)

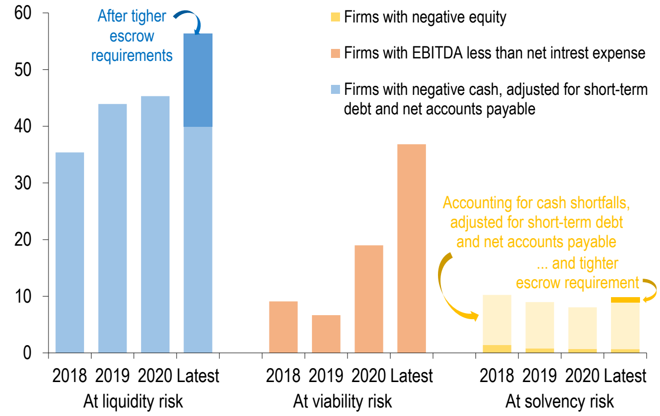


Sources: S&P Capital IQ; and IMF staff estimates.
Note: See Technical Annex for more details of the analysis.

- Tighter escrow requirements for pre-sale properties have exacerbated liquidity strains faced by property developers, which would not have enough cash to meet their debt repayment obligations.
- The April Politburo meeting called for optimizing the escrow account management.

Some will face solvency risk if they have to sell assets at losses to meet their liquidity need.

30. Real Estate Firms: Share of Firms at Risk
(In percent of the sector's total assets)

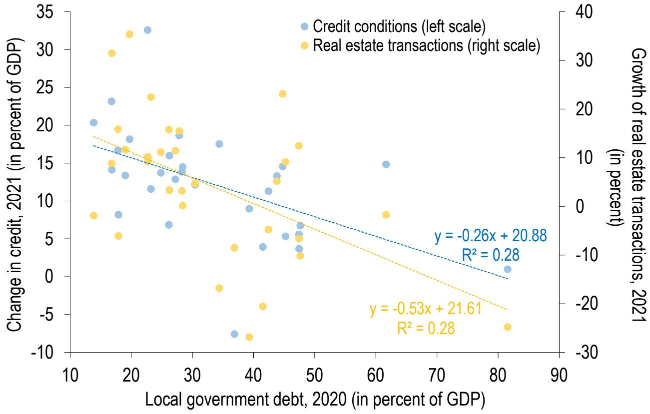


Sources: S&P Capital IQ; and IMF staff estimates.
Note: See Technical Annex for more details of the analysis.

- More than half of real estate firms (in terms of total assets) could face liquidity stress.
- Business and debt restricting appears unavoidable as many of them do not have a viable business model (i.e., EBITA less than net interest expense) or will face equity shortfalls as a result of liquidity stress.

Regions with weaker public finances could see tighter credit conditions, a more severe property sector slowdown, and stronger adverse macrofinancial effects.

31. Credit Conditions, Real Estate Transactions, and Local Government Debt

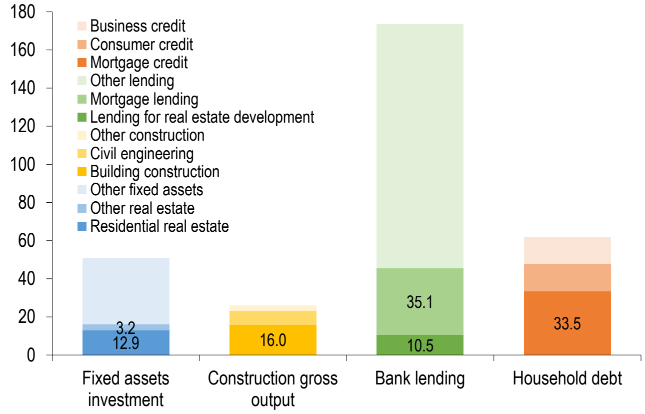


Sources: CEIC; and IMF staff estimates.

- Credit conditions have been tighter in regions with weaker public finances. Falling land sale revenues could worsen local governments' public finances.
- Tightening credit conditions could dampen real estate transactions, construction activity and economic growth.
- Local banks, which are exposed to the local economic situation, could face rising credit losses, resulting in a further tightening of credit conditions.

Financial stress in the property sector could have a sizeable impact on China's economy.

32. Relative Importance of Real Estate Sector, 2021
(In percent of GDP)



Sources: CEIC; and IMF staff calculations.

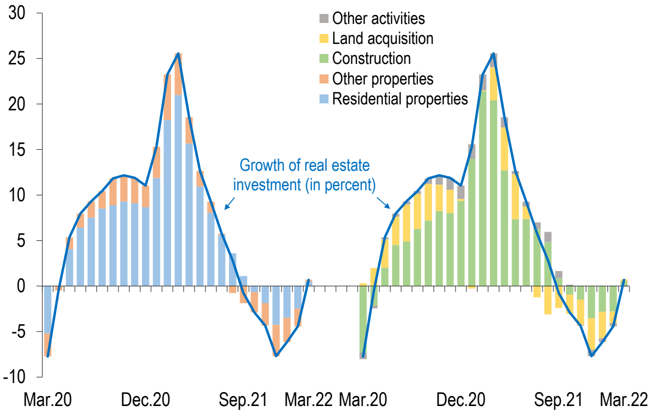
- Residential real estate investment accounted for 12.9 percent of GDP, or a quarter of total fixed assets investment. Construction gross output of building construction—which captures final demand related to construction—amounted to 16.0 percent of GDP.
- Banks' real estate-related lending amounted to about a quarter of their total lending, while mortgages accounted for about 55 percent of household debt.

Analytical Feature: Recent Housing Market Development

Real estate investment has contracted year-on-year since October 2021, ...

33. Contribution to Growth of Real Estate Investment

(In percentage points; Year-on-year; 3-month moving average)



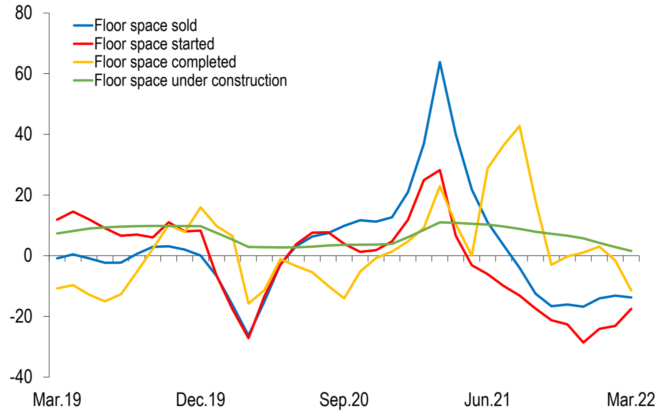
Sources: CEIC; and IMF staff calculations.

- The fall in real estate investment occurred in both residential and nonresidential properties, driven by the decline in construction and land acquisition.
- A recent pickup in real estate investment reflected strong construction activity in January and February, which weakened again in March.

... partly driven by a decline in both housing sales and housing starts.

34. Housing Sales and Construction

(In percent; Year-on-year; 3-month moving average)



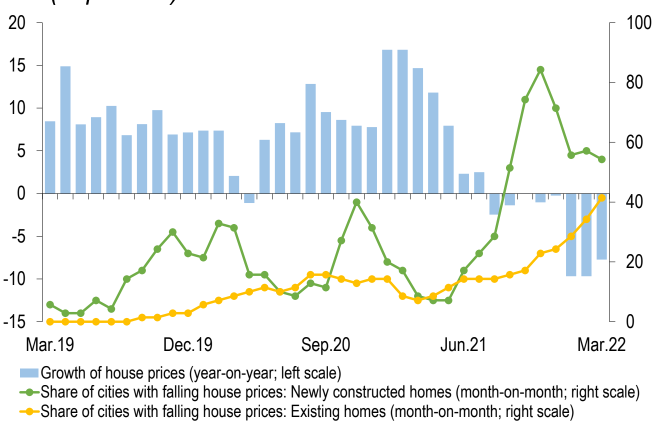
Sources: CEIC; and IMF staff calculations

- Based on more high-frequency data, the decline in real estate transactions have stabilized since March 2022, albeit at levels about half of those in previous years.
- In April, major property developers' home sales dropped 56 percent y/y, with significant divergence (state-owned: -44 percent; financial distressed: -74 percent).

Overall house prices started falling since August 2021, although prices of existing homes began to drop in June.

35. House Prices

(In percent)



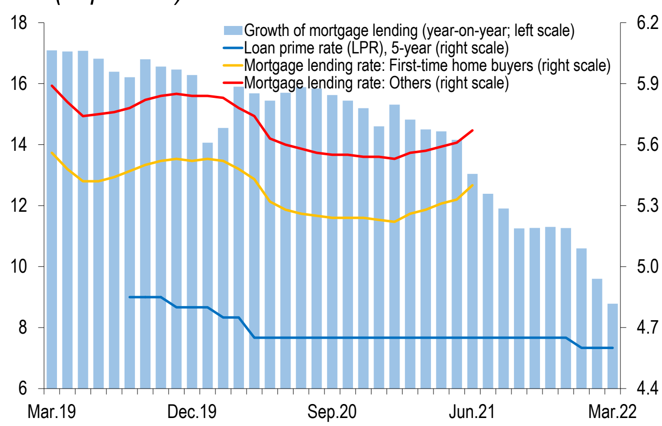
Sources: CEIC; and IMF staff calculations.

- On the year-on-year basis, overall house prices declined 7.7 percent in March 2022 (existing homes: -17.9 percent; new homes: -6.1 percent).
- On the month-on-month basis, 38 (out of 70) cities saw a fall in prices of new homes. Downward pressures on the markets of existing homes appear to concentrate in fewer locations but are likely to be more intense.

Mortgage lending growth has moderated sharply since mid-2021, with mortgage lending rates rising in 2021H1.

36. Mortgage Lending

(In percent)



Sources: CEIC; and IMF staff estimates.

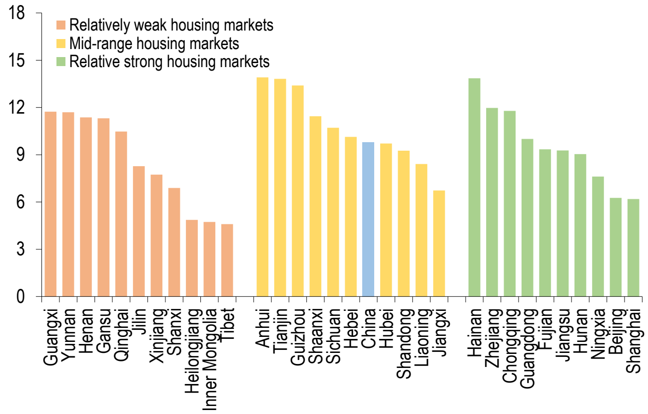
Note: Data on mortgage lending rates are only available until June 2021.

- In early 2021, banks have tightened their mortgage lending, partly reflecting policy guidance to cool down housing markets in some regions.
- In 2022, cities have loosened measures to stimulate housing demand, including easing purchase restrictions, lowering down payment requirements, and reducing mortgage lending rates. Banks have also been guided to ease mortgage lending.

Analytical Feature: Recent Housing Market Development (continued)

The macrofinancial impact of the property sector slowdown will likely vary across regions, reflecting the sector' relative importance and existing vulnerabilities.

37. Real Estate Investment, 2021
(In percent of regional GDP)

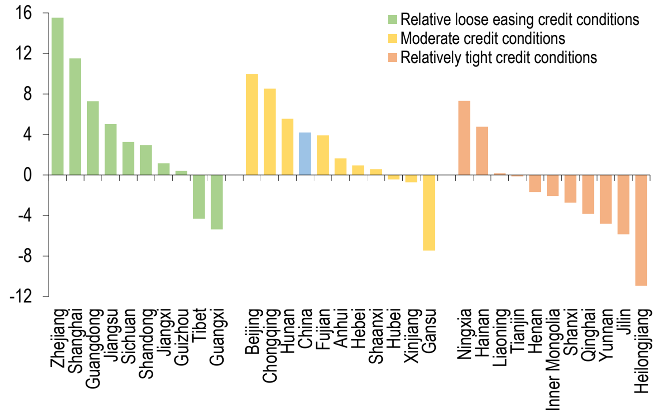


Sources: CEIC; and IMF staff calculations.
Note: Housing market conditions are based on house price growth.

- Regions with relatively large real estate investment and relatively weak housing markets will endure stronger adverse effects from the slowdown.
- The macrofinancial impact could be further amplified by housing vulnerabilities such as overly stretched valuation, large inventory of vacant properties, and unfinished construction of pre-sold housing.

Housing market conditions vary significantly across regions, with house prices falling in those with relatively tight credit conditions.

38. Growth of House Prices, 2021
(In percent)

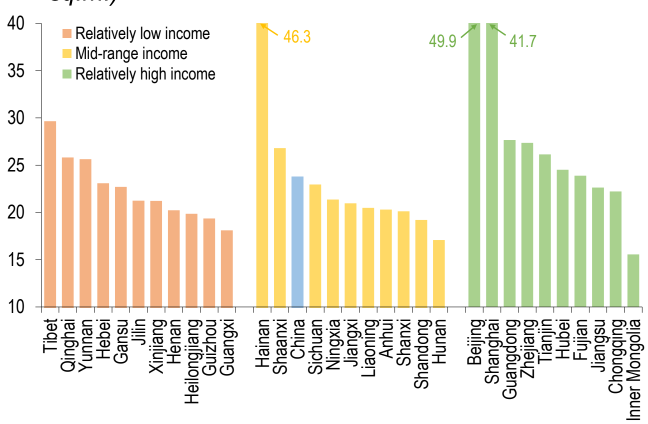


Sources: CEIC; and IMF staff calculations.
Note: Credit conditions are based on the change in private sector credit relative to GDP.

- On the full year basis, house prices in China increased 4.2 percent in 2021, down from 7.5 percent in 2020.
- Housing markets remained strong in Zhejiang and Shanghai, while Heilongjiang and Gansu already experienced a relatively large decline in house prices.

In regions with overly stretched house price valuation, housing markets are exposed to significant corrections ...

39. House Price to Income, 2021
(In multiples; Based on per-capital housing of 80 sq.m.)

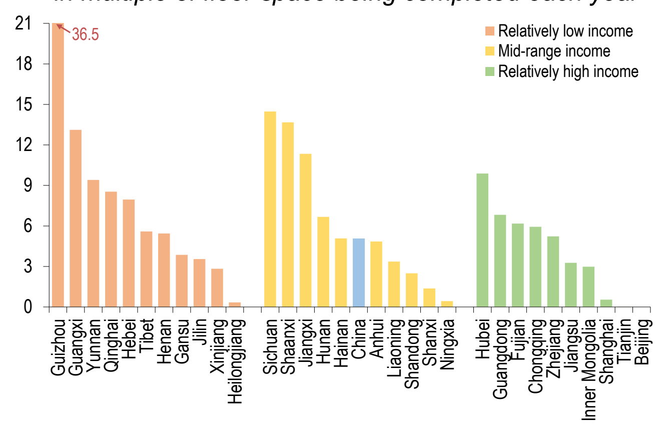


Sources: CEIC; and IMF staff estimates.

- For China as a whole, house price to income is relatively high, even compared with those in advanced economies.
- The demand-supply imbalances have contributed to high house prices relative to income in tier-1 cities and some tier-2 cities (i.e., those with higher income).

..., while some regions could face challenges in dealing with a sizeable stock of unfinished pre-sold housing.

40. Pre-sold But To-be-delivered Housing, 2021
Cumulative floor space pre-sold but not yet completed in multiple of floor space being completed each year



Sources: CEIC; and IMF staff estimates.

- The existence of pre-sold housing that is still to be completed and delivered is pervasive. For China as a whole, it would take 5 years to complete the construction, assuming no new housing starts.
- Regions with lower income tend to have a larger stock of pre-sold but to-be-delivered housing.

Technical Annex: Analysis of Real Estate Firms' Liquidity Stress

The analysis is conducted using financial statement information of about 500 real estate firms available from the S&P Capital IQ database. The analysis first estimates the projected cash position of real estate firms and then assess the solvency implications of real estate firms facing liquidity shortfalls.

Estimation of the projected cash position

The projected cash position accounts for potential cash flows arising from (i) additional cash required for escrow, (ii) net interest expense, (iii) earnings before interest, taxes, depreciation and amortization (EBITDA), (iv) pre-sale receipts, and (v) additional inventory accumulation. The projected cash position also takes into account of short-term debt, accounts receivables (including prepaid expense), and accounts payable (including accrued expense).

Additional cash required for escrow reflects the tighter requirements on escrow accounts for pre-sale properties. The analysis assumes that a portion of existing cash will be locked in escrow accounts to cover construction costs of pre-sold but unfinished projects. This would be the minimum of (i) 20 percent of unearned revenue as of 2021Q2 or (ii) 40 percent of unearned revenue minus restricted cash as of 2021Q2.

EBITDA is assumed to decline by 20 percent to reflect the property sector slowdown.

Pre-sale receipts reflect cash inflows from selling to-be-built properties. This would be equal to 80 percent of the increase in unearned revenue in 2020 to reflect the property sector slowdown. In addition, 40 percent of additional unearned revenue would be placed in escrow accounts.

Additional inventory accumulation reflects cash outflows for ongoing project development or land acquisition. This would be equal to the maximum of (i) the increase in inventory in 2020 or (ii) the sum of cash outflows that represent change in inventory and other investing activity in 2020.

Assessment of the solvency implications

The analysis assumes that firms would need to sell assets at losses—i.e., subject to a haircut of 50 percent—to address their liquidity shortfalls. These losses will affect firms' common equity.