1. The Global Financial Environment

Summary

The recent failure of three US banks exposed vulnerabilities in parts of the global banking system and contributed to significant volatility in some financial markets. Further stress affecting banks would feed through to tighter financial conditions, resulting in higher borrowing costs and reduced supply of credit to households and businesses.

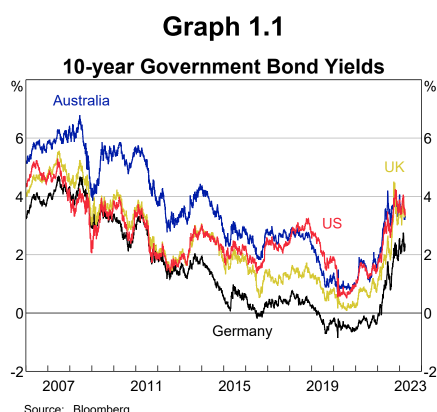
- Three regional banks in the United States failed in March. A run on their deposits, which were concentrated and largely uninsured, was in part due to concerns regarding large unrealised losses on these banks' bond holdings. These vulnerabilities appear to have been enabled by poor risk-management practices at some banks, coupled with a less stringent regulatory and supervisory regime than applied to larger US banks and many banks elsewhere (see 'Box A: Recent International Bank Failures – Causes, Regulatory Responses and Implications').
- Liquidity stress has transmitted through parts of the international banking system and financial markets, culminating in the regulator-facilitated takeover of Credit Suisse by its Swiss counterpart, UBS. Some financial markets have been volatile, especially government bond and bank equity and credit markets, and liquidity conditions deteriorated somewhat. Central banks stepped up their operations in financial markets in response. Market moves have the potential to be amplified by liquidity mismatches at leveraged non-bank financial institutions.
- High household and business indebtedness in some advanced economies is a key medium-term vulnerability, particularly in an environment of slowing economic growth and rising interest rates. While households and businesses have been resilient to higher interest rates and the squeeze on cash flows so far, risks are building and could be realised quickly if lending standards tighten significantly.
- In China, increased policy support and the reopening of the economy from COVID-19 lockdowns have lessened stress in the property sector, but longer term vulnerabilities remain.

Higher interest rates, slowing economic growth and high inflation are adding to financial stability risks

Interest rates have increased substantially since the start of 2022, following a period of historically low interest rates and increasing household, business and government indebtedness (Graph 1.1). Higher interest rates, high inflation and tightening lending standards will likely lead to stress among some borrowers, particularly if (as expected) economic growth slows and labour market conditions soften. In addition, a further escalation in geopolitical tensions remains a prominent risk to global economic activity and the outlook for financial stability.

Stress has emerged in parts of the global banking system

Three regional banks in the United States – Silvergate, Silicon Valley Bank and Signature Bank – failed in March, leading to the most serious stress event for the US banking system since the global financial crisis (GFC) (see 'Box A: Recent International Bank Failures – Causes, Regulatory Responses and Implications'). The failures stemmed from a run on the banks' concentrated deposit bases due to concerns that these banks' capital positions were particularly vulnerable to rising interest rates.



Regulators responded quickly to these events and central banks increased their liquidity operations in financial markets. Despite these actions, the stress prompted an increase in risk aversion and spread to other regional US banks, including First Republic. Stress also spread to Credit Suisse, a global systemically important bank. In late March, Credit Suisse was taken over by UBS at the request of the Swiss authorities following a prolonged period of investor concern about its longer term viability. More broadly, investors and depositors have become more attuned to long-running vulnerabilities in the business models of some banks, as funding costs have increased while government yield curves (from which banks' assets are priced) have inverted.

Conditions in short-term funding markets deteriorated in March alongside the increase in financial system stress and market volatility. Regional banks in the United States have sought liquidity assistance from the US Federal Reserve, with the combined outstanding balance of the Discount Window and the new Bank Term Funding Program reaching a record high of US$165 billion in the week to 15 March (albeit First Republic accounted for a large share of this) and only decreasing slightly in the weeks after. Volatility in bank funding markets also resulted from the full write down of hybrid (Additional Tier 1 capital) securities issued by Credit Suisse. US money market funds that invest in highly conservative portfolios (such as short-dated government debt) have received large 'safe haven' inflows.

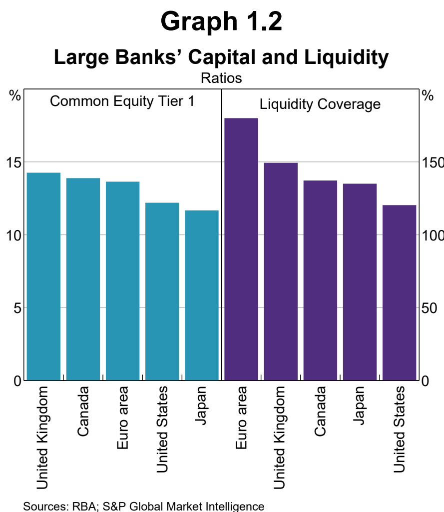
The cost of borrowing US dollars in the foreign exchange market also increased over this period. In response, the central banks of Canada, the euro area, Japan, Switzerland, the United Kingdom and the United States increased the frequency of their seven-day foreign exchange swap line operations from weekly to daily. However, strains in foreign exchange swap markets have since eased and were modest

compared with those experienced during the GFC.

Most banks have high capital and liquidity levels

The resilience of banking systems has improved markedly since 2008. Most banks in advanced economies have high levels of liquid asset holdings and capital as a result of post-GFC reforms (Graph 1.2). This, along with actions by regulators and central banks, helped to limit further contagion in the recent period of stress.

Large banks' profitability rebounded strongly coming out of the worst of the COVID-19 pandemic; however, it declined in the second half of 2022 in a number of economies (the euro area and the United Kingdom being notable exceptions). A consistent theme has been the reduction in income from investment banking activity offsetting the increase in net interest income from rising interest rates. Provisions for non-performing loans (NPLs) have increased slightly in most advanced economy banks, though NPLs remain at low levels. The increase in provisions is because of expectations of a deterioration in credit quality, reflecting the effects of higher interest rates, high inflation and slower economic growth. Nevertheless, recent bank stress tests continue to suggest that large banks in advanced economies have sufficient capital to ensure they will be resilient to a sharp economic downturn.



In 2022, several countries – including France, Germany and Norway – announced increases in their countercyclical capital buffers (CCyBs) to pre-pandemic rates. While economic activity has since slowed, regulators have not judged this sufficient to warrant a reversal of these planned increases. The Canadian regulator also recently announced an increase in the CCyB from 2.5 per cent to 3 per cent.

Banks' concentrated counterparty exposures are a potential vulnerability

Regulators including the Bank of England and the European Central Bank have recently warned that banks are not adequately managing risks from large and concentrated credit exposures to single counterparties, particularly in their prime brokerage and capital markets services to non-bank financial institutions (NBFIs). More broadly, the Basel Committee on Banking Supervision noted late last year that recent episodes of NBFI distress – including the collapse of the family investment office Archegos (which led to significant losses at Credit Suisse) and the inability of a large nickel producer to meet margin calls (see below) – highlighted vulnerabilities and deficiencies in banks' management of concentrated counterparty risk.

Stress in the US banking system has led to a sharp increase in volatility in government bond markets, but other markets have been resilient

Government bond markets were particularly volatile in March (Graph 1.3). In mid-March, two-year US Treasury yields recorded the largest daily decline since the 1980s, and two-year German bunds experienced the largest one-day fall in yields since 1990. The volatility has partly reflected rapidly changing expectations for the

path of policy rates in response to the US banking failures and resulting uncertainty. In some countries, this has been accompanied by the poorest liquidity conditions in government bond markets since the dysfunction experienced in March 2020. Given their key role as financial benchmarks, further large shocks to government bond markets could unsettle financial markets more generally and the institutions that participate in these markets.

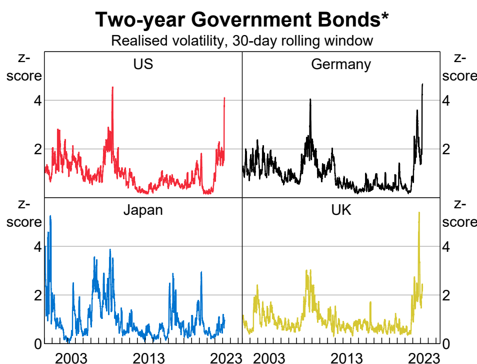
To date, stresses in bank funding markets have not spilled over into a substantial tightening of financial conditions (Graph 1.4). Credit and equity risk premiums suggest many investors continue to anticipate a soft landing from the current global monetary policy tightening cycle. Analyst expectations of corporate earnings over the next 12 months have remained strong. These developments are somewhat at odds with expectations for substantially weaker growth embedded in sharply inverted yield curves in most major markets; risk premiums could widen sharply if economic growth were to decline or slow sharply. Alternatively, higher-than-expected inflation could prompt further monetary policy tightening and lead to sharp price declines in corporate securities (credit and equity) and government bonds.

A key ongoing source of uncertainty and volatility in global financial markets is how central bank policy settings respond to a period of high inflation while growth is slowing and financial stability risks are elevated. One country-specific risk relates to the possibility of a sharp increase in bond yields in Japan, which could be triggered if the Bank of Japan decides to end its yield curve control policy. Some analysts have highlighted the possibility that higher yields in Japan could prompt Japanese investors to divest offshore asset holdings, which could destabilise some markets. For example, Japanese investors hold a substantial share of bonds issued by governments in many advanced economies, including Australia and the United States.

Volatility in financial markets could be amplified by institutions encountering liquidity stress

A key focus for international regulators for more than a decade has been the vulnerabilities posed by some NBFIs – a broad group that includes insurance companies, investment funds, broker-dealers, commodity trading houses and hedge funds – which have the potential to amplify shocks and trigger significant market dysfunction. These vulnera-

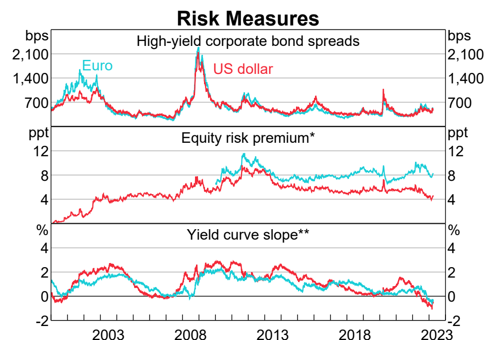
Graph 1.3



* Realised volatility is calculated on daily changes in two-year benchmark bond indices. Values have been standardised.

Sources: RBA; Refinitiv

Graph 1.4



* Calculated as the difference between the 12-month forward earnings yield and the real 10-year government bond yield.

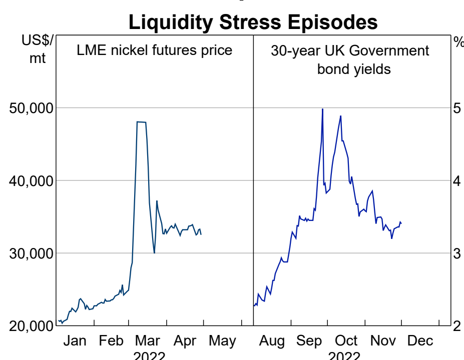
** Calculated as the spread between the 10-year and two-year government bond yield.

Sources: Bloomberg; ICE Data is used with permission; Refinitiv

bilities came to the fore last year in several episodes (Graph 1.5):

- In March 2022, trading in the nickel futures market on the London Metal Exchange (LME) was suspended to allow for an orderly unwinding of large short positions and limit disruptions from very large margin calls.
- In September 2022, authorities in Europe and the United Kingdom announced liquidity support to energy companies (thereby insulating the financial institutions that had exposures to them) following a surge in gas prices, to ensure that large margin calls did not destabilise financial systems.
- In October 2022, the Bank of England intervened in the UK Government bond market after a sharp increase in government bond yields triggered large margin calls associated with the hedging activity of defined benefit pension funds.

In each of these events, NBFIs were using leverage to finance trades. Because of this leverage, the institutions faced large margin calls when unexpected shocks triggered sharp price moves in underlying assets. The institutions could not meet these obligations without selling assets, leading to fire-sale dynamics and disorderly market conditions; the resulting threat to financial stability led to intervention by the authorities or a central counterparty. This liquidity stress occurred despite very high levels of aggregate banking system liquidity.



Although some forms of NBFI activity (also known as 'shadow banking') have been curtailed since the GFC, the underlying vulnerabilities that triggered these recent events remain. Some of these vulnerabilities relate to liquidity mismatches, where the liabilities of NBFIs may not be able to be repaid at short notice without destabilising underlying asset markets. Others relate to the use of derivatives and more direct forms of leverage that may not be fully visible to regulators (particularly if in over-the-counter markets). NBFIs account for nearly 50 per cent of global financial system assets and – as recent events have highlighted – the activities of NBFIs (or entities with similar financing structures) can have an outsized influence in certain markets.

Regulators continue to progress initiatives aimed at addressing vulnerabilities posed by NBFIs. This includes reassessing margining practices in non-centrally and centrally cleared markets, and whether such practices can be improved to dampen pro-cyclicality (where margin calls exacerbate already large market moves). Regulators are also working to improve visibility over certain NBFI activities in systemically important markets. For example, the US Securities and Exchange Commission has proposed to increase central clearing of US Treasury securities, which would bring a broader range of trading activity (including hedge funds) within regulatory view. More generally, the Financial Stability Board continues to engage its international membership on the development of approaches to better assess and address longstanding NBFI vulnerabilities relating to liquidity mismatches and (excessive and 'hidden') leverage.

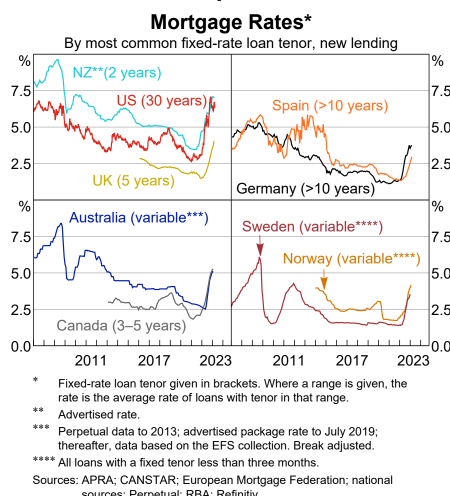
Households have so far been resilient to the substantial tightening in monetary policy

The confluence of higher interest rates, high inflation and tightening lending standards poses risks for household balance sheets, particularly if (as expected) economic growth slows and labour market conditions soften. This is particularly the case for households with little in the way of savings buffers and declining spare cash flow. Many borrowers in economies with high shares of variable-rate lending and/or shorter fixed-rate mortgage tenors – such as Australia, New Zealand, Norway and Sweden – are experiencing substantially higher required loan repayments than a year ago, and further increases are in prospect as earlier tightening by central banks filters through to borrowing rates. By contrast, in countries with longer fixed-rate mortgage tenors – such as the United States and most European countries – most borrowers will not face higher mortgage rates for several years despite mortgage rates for new borrowers having risen sharply (Graph 1.6).

Financial stability concerns raised by regulators mostly relate to highly indebted households, particularly recent borrowers who purchased closer to the peak of the housing price cycle and may be paying interest rates above those used to test their debt-servicing capacity at the time of loan origination. For example, in New Zealand, mortgage rates are currently 1 percentage point above the minimum serviceability rate of around 6 per cent used in the first half of 2021, and housing prices have declined since that time. In Canada and New Zealand, regulators have also highlighted risks associated with households that borrowed during the housing upswing at relatively high debt-to-income multiples.

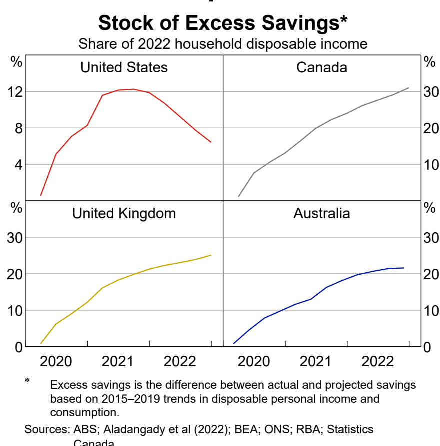
Despite these challenges, there are few signs of widespread household stress in advanced economies. Mortgage and consumer loan arrears rates are low, although consumer loan arrears have ticked higher in Canada, New Zealand and the United States. Household financial resilience has been supported by very low unemployment and the fact that many households entered the period of higher inflation and rising interest rates in a strong financial position. In aggregate, households in advanced economies built up significant savings buffers during the pandemic, although these buffers are unevenly distributed and in some cases are being drawn down, including in the United States (Graph 1.7).

Graph 1.6



* Fixed-rate loan tenor given in brackets. Where a range is given, the rate is the average rate of loans with tenor in that range.
** Advertised rate.
*** Perpetual data to 2013; advertised package rate to July 2019; thereafter, data based on the EFS collection. Break adjusted.
**** All loans with a fixed tenor less than three months.
Sources: APRA; CANSTAR; European Mortgage Federation; national sources; Perpetual; RBA; Refinitiv

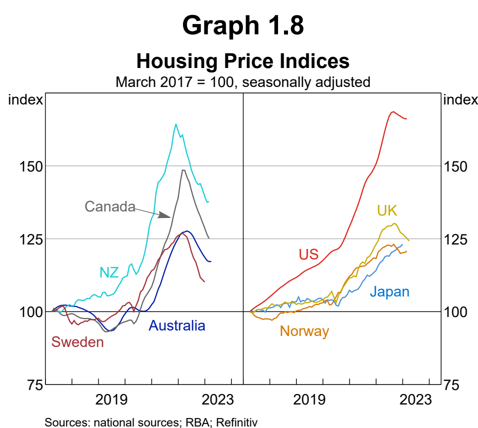
Graph 1.7



* Excess savings is the difference between actual and projected savings based on 2015–2019 trends in disposable personal income and consumption.
Sources: ABS; Aladangady et al (2022); BEA; ONS; RBA; Statistics Canada

Housing prices have declined in many advanced economies

Housing prices have declined following very strong growth in recent years (Graph 1.8). Prices have declined by 16 per cent from their peak in Canada and New Zealand, 13 per cent in Sweden, 5 per cent in the United Kingdom and 1 per cent in the United States; the 8 per cent decline in Australia sits in the middle of this range. Central banks generally anticipate further declines in housing prices in the period ahead, reflecting higher borrowing costs and softening labour market conditions. Lower housing prices are likely to weigh on economic activity to the extent that indebted households respond to their declining wealth by decreasing their consumption, and lower housing turnover reduces housing-related spending. While housing prices remain well above 2020 levels in many advanced economies, recent borrowers are at greater risk of falling into negative equity because they purchased closer to the peak of the price cycle. Authorities are closely monitoring the incidence of negative equity; previous cycles have demonstrated that negative equity increases the likelihood that a borrower who encounters a debt-servicing shock (such as job loss or relationship breakdown) will default on their mortgage, thereby increasing losses to lenders.



Smaller and lower rated corporations are more at risk from rising interest rates, tightening lending standards and slowing economic growth

Like households, most corporate balance sheets are yet to show material signs of stress. Arrears rates on corporate loans generally remain low, as do corporate bond default rates, although default rates on European bonds have increased to pre-pandemic levels. The low level of arrears across most jurisdictions partly reflects that many large businesses have cash balances (relative to total assets) around all-time highs, and these businesses tend to have fixed-rate loans that are yet to roll on to higher interest rates. By contrast, smaller businesses appear more exposed to the softening outlook. The share of debt held by small firms with interest coverage ratios less than 2 (indicating interest expenses are at least half as large as earnings) is already high and increasing (Graph 1.9). Cash balances of smaller firms also remain well below pre-pandemic levels. Sectors that were adversely affected by the pandemic, such as consumer discretionary and real estate, also have a relatively high share of firms with low interest coverage ratios. Debt-servicing challenges will continue to grow for some firms alongside higher interest rates and slowing economic activity.

Debt-servicing vulnerabilities are also more pronounced for lower grade corporations. Lower grade corporate debt is characterised by more variable-rate lending, including leveraged loans, and is dominated by sectors that are more exposed to a cyclical downturn – such as consumer services, leisure, and technology. For lower grade corporations that borrowed by issuing fixed-rate bonds, the pass-through of higher interest rates will occur with some delay; refinancing risk will be concentrated between 2025 and 2026, when the bulk of fixed-rate bond maturities occurs. Investment-grade issuers have a relatively even spread of maturities over the

years ahead, which will reduce refinancing risk for these borrowers.

Commercial real estate markets are facing challenging conditions

Higher interest rates, slowing growth and longer term preference shifts among end-users pose risks for lenders in commercial real estate (CRE) markets. Valuations of CRE investment trusts have in many cases declined by between 30 per cent and 50 per cent since their peak in late 2021/early 2022. Office and retail CRE prices have been under the greatest pressure due to structural changes in demand, such as remote working and online shopping (Graph 1.10). European authorities have warned about elevated risks stemming from CRE, including high bank exposures and large shares of high loan-to-income lending. CRE loans are often extended at variable rates in many European countries, adding to debt-servicing risks at a time when structural changes and slowing growth will weigh on incomes for some CRE borrowers. A further slowdown in CRE would also add to risks for smaller US banks, which have relatively large CRE exposures (17 per cent of total assets, or 22 per cent including commercial construction and land development); this exposure is more than four times that of large US banks.

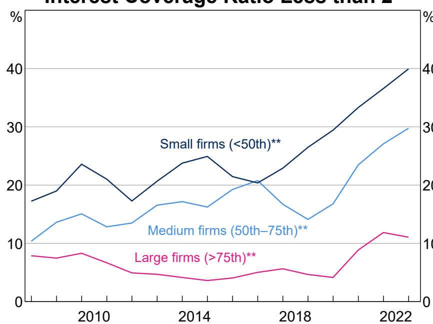
CRE markets are also vulnerable to liquidity mismatches at investment funds. This is because some open-ended CRE investment funds offer redemption terms to investors at much shorter terms (including daily) compared with the length of time it takes to sell the underlying assets held by the fund. While these funds maintain liquidity pools that are designed to accommodate an increase in redemption requests, an unusually large spike in redemptions could lead to the imposition of investor gates (where access to investor funds is limited for a period) or generate fire sales of highly illiquid assets. In addition, private market valuations have diverged from their public counterparts – substantially so in some cases – raising concerns that the former are not being marked at realistic secondary market prices. This also increases the risk that investors could abruptly redeem their capital from the asset class.

The earlier tightening in financial conditions in emerging markets has eased

Since October, emerging market economy (EME) financial conditions have eased alongside US dollar depreciation and a better near-term

Graph 1.9

Share of Debt Held by Firms with Interest Coverage Ratio Less than 2*



* Series represent two calendar year moving averages for private and public non-financial corporations in Canada, Japan, New Zealand, the United Kingdom, the United States and 18 euro area countries.

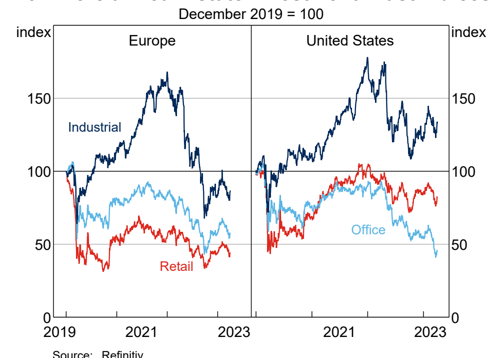
** Firms are non-financial corporations grouped into size percentiles by total assets.

Sources: RBA; S&P Capital IQ

Graph 1.10

Commercial Real Estate Investment Trust Indices

December 2019 = 100



Source: Refinitiv

outlook for China (see below). As a result, EMEs have received portfolio inflows. EMEs have been relatively unaffected by the recent stress at some banks in advanced economies. Nonetheless, some EMEs remain vulnerable if changes to the global outlook result in a sudden repricing of assets. Some EMEs have large fiscal deficits, high levels of debt and/or a greater reliance on shorter term and external financing. A significant share of new sovereign bond issuance among EMEs in 2022 and early 2023 were at shorter maturities, raising the risk associated with rolling over and refinancing debt. In addition, the share of US dollar denominated debt remains high in Latin America and Türkiye, making these economies vulnerable to exchange rate movements. EMEs in the Asia-Pacific region appear less vulnerable to this risk, reflecting reduced reliance on external financing and larger holdings of foreign exchange reserves.

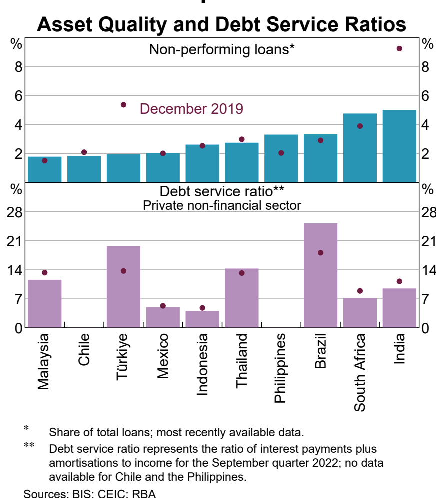
Lower growth, high inflation and higher borrowing costs have added to concerns over debt serviceability and weaker asset quality in EMEs (Graph 1.11). Around 8–10 per cent of bank loans are still under pandemic-related moratoriums in Indonesia and Thailand, with some having expired earlier this year. However, capital levels are expected to be high enough to allow banks to absorb credit losses under most scenarios, particularly in Asia: the average Common Equity Tier 1 capital ratio is 4 percentage points higher in emerging Asian economies than in other EMEs.

Stress in China's property sector is less acute, but longer term vulnerabilities remain

China's near-term growth outlook has improved significantly following the removal of COVID-19 restrictions in late 2022. Chinese authorities have since increased policy support for the economy and provided additional support for the distressed property sector. Authorities are balancing efforts to support growth against many longer term financial vulnerabilities, including high debt levels and perceptions of implicit guarantees, which result in the mispricing of risk. Allowing insolvent entities to fail would help achieve the longstanding priority of breaking perceptions of implicit guarantees, but it risks causing significant stress in the short term. Authorities appear to have lessened their focus on deleveraging over the past year; government debt as a share of GDP increased by nearly 5 percentage points during the first three quarters of 2022 (Graph 1.12).

Graph 1.11

Asset Quality and Debt Service Ratios



* Share of total loans; most recently available data.

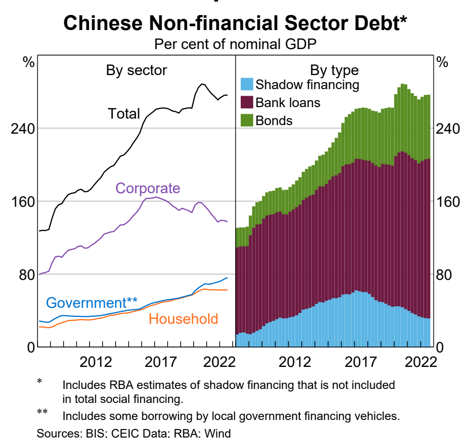
** Debt service ratio represents the ratio of interest payments plus amortisations to income for the September quarter 2022; no data available for Chile and the Philippines.

Sources: BIS; CEIC; RBA

Graph 1.12

Chinese Non-financial Sector Debt*

Per cent of nominal GDP



* Includes RBA estimates of shadow financing that is not included in total social financing.

** Includes some borrowing by local government financing vehicles.

Sources: BIS; CEIC Data; RBA; Wind

Authorities have implemented several measures to lower stress in the highly indebted property sector, including by directing financial institutions to provide liquidity support to assist in the delivery of stalled projects and to implement policies to stimulate home buyer demand. Such support has started to ease acute short-term liquidity stress, and market expectations for developer defaults have declined as a result (although to a lesser extent for lower quality developers). However, bond prices for many developers remain well below par, reflecting considerable uncertainty about whether the support to date will be sufficient to restore confidence in the housing market and allow developers to refinance the significant amount of debt maturing this year (US$80 billion in bond financing).

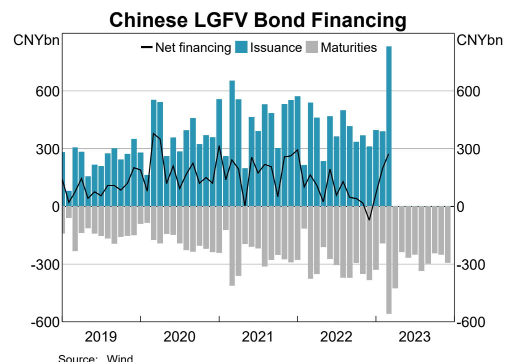
Property sector stress has exacerbated vulnerabilities in local government balance sheets. In 2022, local governments increased their reliance on local government financing vehicles (LGFVs) to replace developer demand in land auctions, which are an important source of government revenue; LGFV purchases accounted for 65 per cent of total sales in late 2022, up from 20 per cent in 2021. This has conflicted with authorities' attempts to reduce leverage among LGFVs, which hold debt around half the size of China's GDP. LGFVs use land as collateral when borrowing, so a sharp fall in land prices would likely lead to losses for LGFV creditors in the event of a default. LGFVs faced a tightening in financial conditions at the end of 2022 as spreads widened significantly and net bond issuance turned negative (Graph 1.13).

The number of defaults by LGFVs and developers on 'shadow banking' products, including trust loans and wealth management products (WMPs), has increased. In November, widespread WMP redemptions exacerbated bond market volatility, which prompted intervention by authorities. Shadow banking remains a source of financial fragility in China as it is opaque, undercapitalised and has interlinkages with the wider financial system (especially banks). This is despite a campaign by authorities to de-risk the sector and a further 2 percentage point contraction in its size relative to GDP over the first three quarters of 2022.

The increased support for the property sector has been delivered via banks, asset management companies, trust companies and other NBFIs, increasing their exposure to stress in the sector. This exposure, combined with stringent pandemic-containment measures, has exacerbated asset-quality risks for the banking system. While large Chinese banks have strong capital positions, smaller banks are more exposed to the property sector and small to medium-sized enterprises, have much higher NPL ratios, weaker provision coverage and capital adequacy, and are more closely linked to shadow banks. Moreover, NPL ratios are widely believed to be under-reported, and forbearance continues to mask true asset quality. Ratings agencies estimate the share of NPLs to be as high as 8 per cent of total loans – much higher than the officially reported 1.6 per cent – and have downgraded their outlook for Chinese banks. Authorities have announced new NPL reporting, stress-testing and capital adequacy requirements to strengthen identification and management of risk and to better account for off-balance sheet exposures.

Graph 1.13

Chinese LGFV Bond Financing



Authorities have announced plans to consolidate the supervision and coordination of financial regulation in an effort to strengthen oversight. The new National Financial Regulatory Administration will replace the current banking and insurance regulator and will take over some responsibilities from the People's Bank of China and the securities regulator.