II. Potential macro environmental risk factors

2.1 International economic and financial conditions

2.1.1 International economic and financial conditions

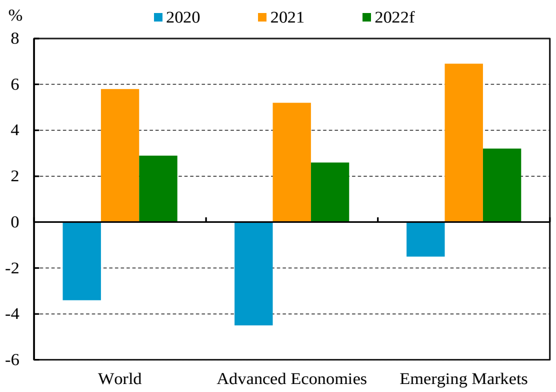
Global economic growth gained momentum in 2021, owing to expanded rollout of vaccines across countries, large-scale accommodative monetary policies employed by central banks, and a low base-year level in 2020. From 2022 onwards, the spread of the Omicron variant and the eruption of the Russia-Ukraine war have further intensified supply disruptions and pushed up commodity prices, thus increasing imported inflation pressure. Looking ahead, global growth is expected to moderate in 2022 against the backdrop of rising downside risks to the global economic outlook owing to a renewed flare-up of the pandemic worldwide and ongoing Russia-Ukraine conflict.

The war in Ukraine and policy rate hikes by major economies have resulted in a significant correction in global financial markets. Should central banks in advanced economies adopt a more hawkish stance to rein in rising inflation, emerging economies could see a disorderly tightening of financial conditions, thus putting financial stability at risk.

Increased inflationary pressures and the escalation of geopolitical tensions will lead to a slowdown in global growth in 2022

In 2021, thanks to expanded vaccination coverage, loosened COVID-19 restrictions, and extraordinary fiscal policy support, the global economy and trade continued to recover. Together with a lower base period, the global economic growth rate surged notably to 5.8% (Chart 2.1).[12]

Chart 2.1 Global economic growth rates

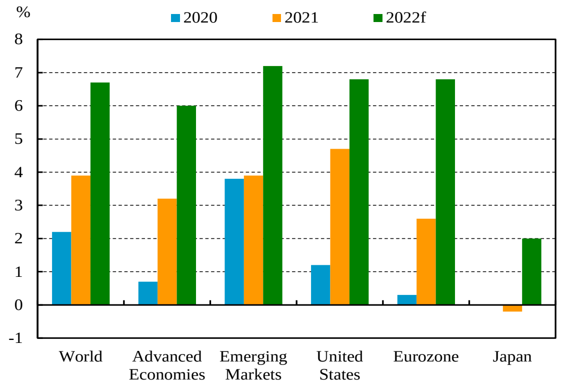


Note: Figures for 2022 are S&P Global Market Intelligence estimates.
Source: S&P Global Market Intelligence (2022/5/15).

[12] S&P Global Market Intelligence estimate on May 15, 2022.

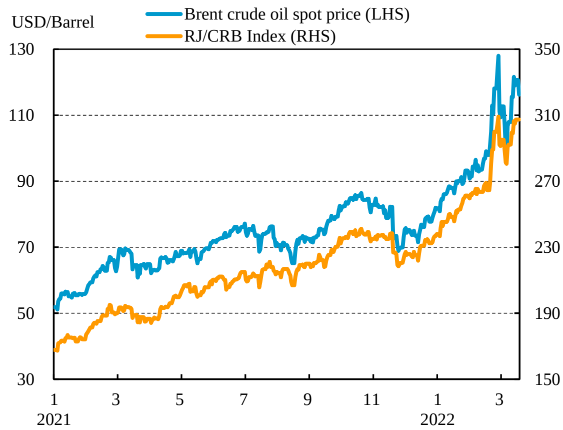
From the beginning of 2022 onwards, more severe sanctions imposed by several countries on Russia following its invasion of Ukraine, together with the spread of a new COVID-19 variant, have caused lasting disruptions of supply chains. As a result, global inflation rose drastically, posing considerable challenges for economic recovery. S&P Global Market Intelligence[13] anticipates that the global economy would expand at a slower pace of 2.9%, while the economic growth rates of advanced economies and emerging economies are expected to decelerate to 2.6% and 3.2%, respectively (Chart 2.1). In addition, the IMF noted that the recurrence of catastrophic climate events would impose significant costs on vulnerable low-income countries and further strain global supply chains, which could jeopardize economic recovery.

Chart 2.2 Global headline inflation indices



Note: Figures for 2022 are S&P Global Market Intelligence estimates.
Source: S&P Global Market Intelligence (2022/5/15).

Chart 2.3 Global commodity prices



Source: Bloomberg.

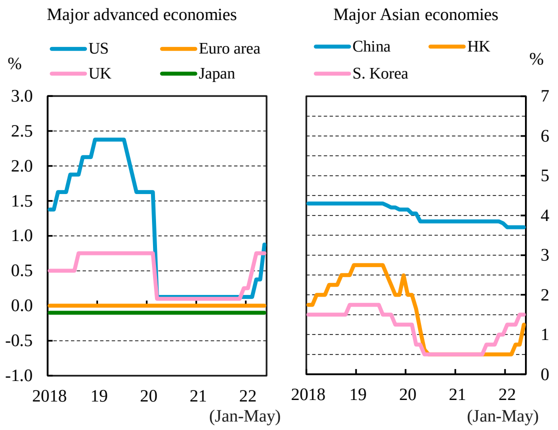
The Russia-Ukraine war posed upside risks to inflation

Since the beginning of 2021, two COVID-19 waves from the Delta and Omicron variants have caused labor shortages and port congestion in many economies, translating to supply chain breakdown and soaring commodity prices. Among the commodities, international oil prices gradually picked up amid the easing of lockdowns and solid oil demand stemming from a recovery of manufacturing sectors in Europe and the US. The average annual Brent crude oil spot price reached US$70.89 per barrel, an increase of 70% compared to US$41.69 in 2020. Furthermore, other energy prices and food prices, including prices of cereals, vegetable oil, dairy and meat, also trended upward. With commodity price spikes, the global CPI inflation rate accelerated to 3.9% in 2021. The headline inflation rates in advanced and emerging economies climbed to 3.2% and 3.9%, respectively (Chart 2.2).

[13] S&P Global Market Intelligence (2022), *Global Executive Summary*, May.

Entering 2022, with the Russia-Ukraine war dampening the supply of global energy and raw materials, the Brent oil price hit US$128 per barrel on March 8, a record high since 2008. The RJ/CRB Index, designed to capture broad trends in global commodity prices, also saw a significant upward shift (Chart 2.3). Against the backdrop of a sharp increase in commodity prices, S&P Global Market Intelligence expects that the global headline inflation rate will rise to 6.7%, whereas inflation in advanced economies and emerging economies will rise to 6.0% and 7.2%, respectively (Chart 2.2). High global inflation could be aggravated by a possible worsening of the Russia-Ukraine war.

Chart 2.4 Policy rates in major economies



Notes: 1. Advanced economies: figure for the US is based on the median of the federal funds rate target range; for the euro area, the interest rate on the main refinancing operations; for the UK, Bank Rate; for Japan, interest rate on banks' excess reserves.
2. Emerging Asia: figure for China is based on one-year loan prime rate; for Hong Kong, Base Rate; for South Korea, Base Rate.
3. Figures are as of May 4, 2022.

Sources: Central banks and monetary authority websites.

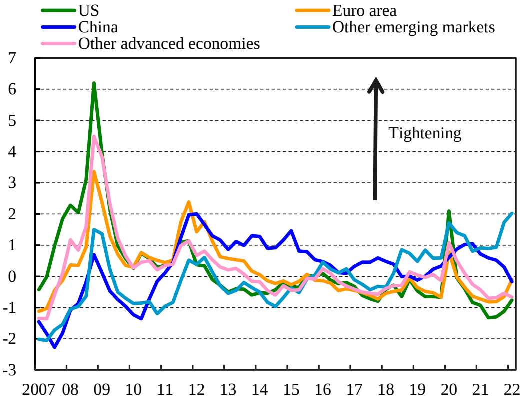
Advanced economies in Europe and the US accelerate the pace of policy normalization aimed at combating inflation

In 2021, since the real economy had not fully regained momentum amid the COVID-19 pandemic, major central banks maintained accommodative monetary policies by providing low interest rates. Then, from the beginning of 2022, central banks in Europe and the US, such as the Fed, gradually sped up the pace of policy normalization to rein in soaring inflation, which could have an adverse impact on bond markets and emerging economies.

In the recent year, major central banks took divergent paths in monetary policies. In the US, where there was elevated inflation, along with a substantially declining unemployment rate and strong job growth, the Fed decided to reduce its net asset purchases from January 2022. Moreover, the Fed raised its target band for the federal funds rate in March and May by a total of 75 basis points (bps) to 0.75% - 1.00% and planned to reduce the size of its balance sheet from June. In Europe, the European Central Bank scaled back its bond-buying stimulus plan in March 2022 amid raging inflation, but kept its key interest rates on hold. On the other hand, the Bank of Japan (BOJ) continued to pursue their bond-buying program given mild inflation, but planned to gradually return the amount of purchases of CP and corporate bonds to pre-pandemic levels. The Bank of England has increased its Bank Rate three times by a total of 65 bps to 0.75% since December 2021 and reduced the size of its asset purchase program in the face of an increase in domestic prices (Chart 2.4).

Among emerging Asian economies, China sustained its accommodative monetary policies. In the latter half of 2021 and early 2022, the People's Bank of China (PBC) separately cut the reserve requirement ratio for financial institutions and reduced the one-year loan prime rate twice to bring down funding costs. Meanwhile, with the aim of addressing inflation and mitigating financial risks, the Bank of Korea raised its policy rate by 25 bps four times to 1.50%. For Hong Kong, which adopts a linked exchange rate system, the Hong Kong Monetary Authority raised the Base Rate in March and May 2022 by a total of 75 bps following the Fed's rate hikes (Chart 2.4).

Chart 2.5 Global financial conditions indices



Notes: 1. Financial conditions indices are gauged by standard deviations from the mean.
2. Other advanced economies comprise 11 economies, such as Australia, Canada and the UK.
3. Other emerging economies include emerging markets in Europe (excluding Russia and Ukraine), Middle East, and Africa.

Source: IMF (2022), *Global Financial Stability Report*, April.

Global financial conditions have tightened, and emerging markets are facing greater debt vulnerabilities and higher risks of capital outflows

Financial conditions tightened

In 2021, buoyed by expectations of continued accommodative monetary policies launched by national authorities in the near term, stock indices sustained their uptrends and financial conditions in advanced economies eased further. By contrast, financial conditions changed little in some emerging markets as monetary policy tightening in response to inflationary pressures offset gains in financial asset prices (Chart 2.5).

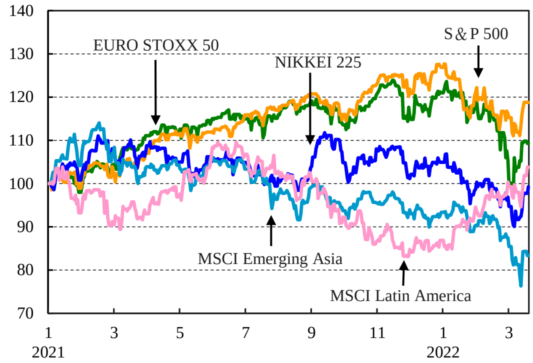
Since the beginning of 2022, rising global inflation risks have prompted investors to broadly expect faster monetary policy normalization by advanced economies to tame inflationary pressures. This has resulted in spiking volatility in financial markets, a decline in stock prices and corporate valuations, along with a rise in government bond yields. As a consequence, financial conditions in most economies, excluding China, have tightened notably. Among them, the significant increase in external borrowing costs have weighed heavily on tighter financial conditions in emerging economies located in Eastern Europe and the Middle East with close ties to Russia. However, for other economies, financial conditions remained easy relative to historical levels (Chart 2.5).

The Russia-Ukraine war impacted the global financial system

International stock markets dropped from historical levels, and government bond yields in major economies trended upward

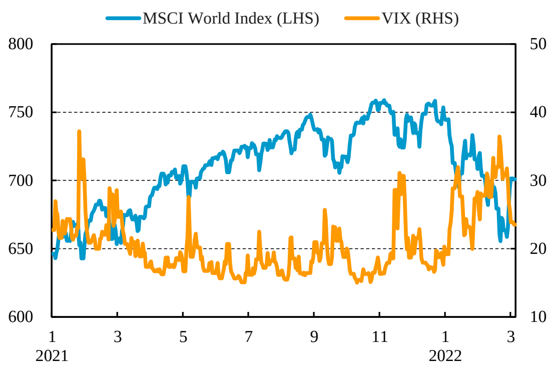
From 2021 onwards, benefitting from the easing of lockdowns and rapid vaccine rollout in advanced economies, European and US equities prices rose further, with the Dow Jones Industrial Average and S&P 500 reaching historical peaks in early January 2022. Subsequently, as the Fed hinted at the commencement of the normalization of monetary policy in light of elevated inflation in the US, the stock market turned downwards and fluctuated within a narrow range. In emerging markets, stock market performances were generally weaker than in advanced economies on account of rising commodity prices and slower vaccine rollout (Chart 2.6). In late February 2022, the MSCI World Index plummeted by 14%[14] compared to the high level of November 2021 because of the outbreak of the Russia-Ukraine war. The VIX Index also rose above 30 (Chart 2.7). Given the unclear path of the Russia-Ukraine war, there remain many uncertainties over global stock markets.

Chart 2.6 Major international equity indices



Notes: 1. January 1, 2021 = 100.
2. The EURO STOXX 50 refers to a stock index consisting of the largest 50 stocks in the 12 major economies of the euro area.
Source: Bloomberg.

Chart 2.7 MSCI World Index and VIX Index



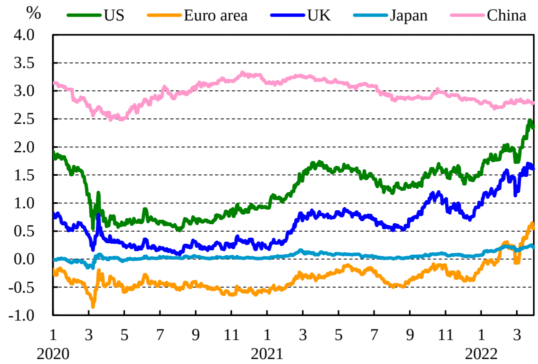
Notes: 1. The MSCI World Index, maintained by Morgan Stanley, is a weighted index of stocks from large companies throughout the world.
2. The VIX Index is a standardized measure of market volatility created by the Chicago Board Options Exchange. It is used to gauge investor confidence in the stock market. When the VIX Index trends upward, market participants expect volatility to increase.
Source: Bloomberg.

Regarding bond markets, as a consequence of the Fed's rate hike cycle amid a rapid surge in inflation, 10-year government bond yields in Europe and the US have increased significantly

[14] The MSCI World Index fell from 758.86 on November 16, 2021, to 655.47 on March 8, 2022.

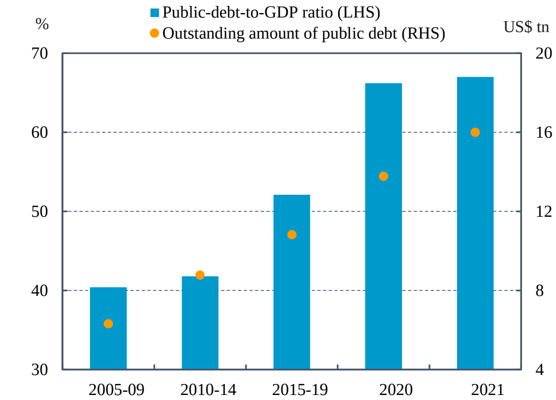
since early 2022, particularly those in the US, and bond yields in the euro area have moved from negative into positive territory (Chart 2.8). Since the war in Ukraine has already placed further pressure on global inflation, the probability of more aggressive rate hikes by central banks has soared. With global debt levels remaining relatively high, if real interest rates rise quickly, it could trigger an abrupt correction in financial markets and a sharp tightening of financial conditions, which could in turn hamper market confidence and endanger financial stability. Hence, rising global interest rates warrant close attention.

Chart 2.8 10-year government bond yields in major economies



Source: Bloomberg.

Chart 2.9 Government debt of emerging economies



Note: Indicators are country averages weighted by purchasing-power-parity GDP.
Source: IMF (2022), *Global Financial Stability Report*, April.

The war in Ukraine had a greater impact on European banks

After the war in Ukraine broke out, exposures of banks, nonbanks and corporates to Russia and Ukraine, along with rising liquidity and funding risks stemming from a tightening of financial conditions, may dampen financial institutions' profitability prospects and asset quality outlook. It is worth mentioning that Europe took a harder hit than other regions owing to its geographical proximity to the war, reliance on Russian energy exports, and banks with relatively larger exposures to Russia and Ukraine. In addition, although global nonbank financial intermediaries have sizable investments in Russian assets,[15] their exposure to Russia is small as a share of total assets and therefore the impact on them has been limited so far.

Governments in emerging economies could face debt distress and capital outflows

Following the COVID-19 outbreak, since governments in emerging markets greatly increased fiscal support to cushion the impact of the pandemic on firms and households, the average

[15] Global nonbank financial intermediaries hold 19% of Russia's total sovereign debt, half of its corporate debt, and 40% of Russian equities.

public-debt-to-GDP ratio rose to 67% from 52% before the pandemic (Chart 2.9). Furthermore, for the purpose of meeting increased financing needs for governments, the domestic sovereign debt exposure of banks has increased to 17.2% of total banking sector assets, notably higher than the 7.5% in advanced economies.

After the Fed's interest rate hike in March 2022, the prospect of a more hawkish stance has been the main theme for markets amid rising upside risks to inflation. Against this backdrop, if global financial conditions tighten suddenly, emerging economies could face the risk of capital outflows given their weaker post-pandemic recovery, shorter average maturity profile of public debt, and a higher share of public debt denominated in foreign currency. Moreover, a tightening of global financial conditions, a persisting pandemic, and heightened geopolitical tensions could worsen the fiscal conditions in emerging markets, leading to rising sovereign bond yields and lower market value. As a result, banks with more sovereign debt exposure could be subject to greater losses, causing them to adopt a more cautious lending stance and thus threatening the recovery for household and corporate sectors. Subsequently, with a slowdown in economic growth and lower tax revenues, governments would face more fiscal pressure. This may further impair sovereign bond markets and bank profitability, and then trigger an adverse feedback loop.

Climate change and decentralized finance could pose a threat to financial stability

- The introduction of foreign sanctions against Russia generated a sharp increase in energy prices. Even though spiraling energy prices could urge authorities to accelerate the transition to renewables and achieve net-zero targets, a delayed and disorderly climate transition may pose a threat to global financial stability.

- DeFi[16] has had extraordinary growth in recent years. Among them, supported by the wider use of stablecoins, the volume of DeFi lending has grown from less than US$1 billion in early 2019 to nearly US$25 billion at the end of 2021. To effectively address the market, liquidity, and cyber risks driven by DeFi, authorities should launch regulations that focus on elements of the crypto ecosystem and DeFi platforms. To balance between over-regulation and risk management, regulators may also need to encourage DeFi platforms to establish self-regulatory organizations.

[16] See Note 2.

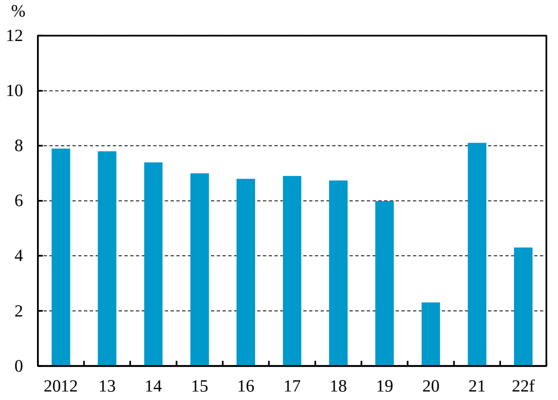
2.1.2 China's economic and financial conditions

Economic growth slowed sharply after a strong rebound

In 2021, the annual economic growth rate of China rebounded sharply to 8.1% (Chart 2.10) with an increase of 5.8 pps over the previous year, better than those of other major economies.

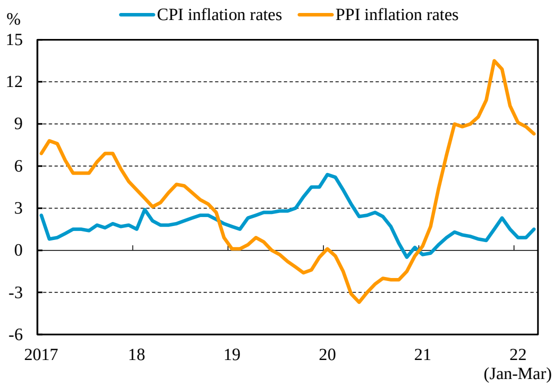
Looking ahead to 2022, owing to the recurring pandemic, the service industry and consumption momentum will continue to be suppressed by the government's "zero-COVID" measures. Moreover, the government continued to implement industrial regulation and the policy of deleveraging the housing sector. Considering these developments, along with the impact of the Russia-Ukraine war and lockdowns in China's major cities, major international institutions have downgraded their expectations of the economic growth of China. Among them, S&P Global Market Intelligence forecasts that the economic growth rate of China will decline markedly to 4.3% in 2022 (Chart 2.10).

Chart 2.10 Economic growth rate of China



Note: Figure for 2022 is an S&P Global Market Intelligence estimate.
Sources: National Bureau of Statistics of China and S&P Global Market Intelligence (2022/5/15).

Chart 2.11 CPI and PPI inflation rates of China



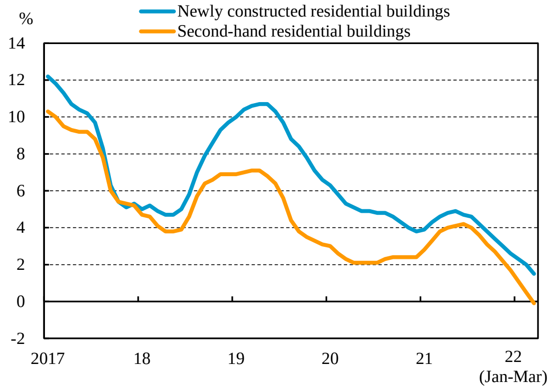
Source: National Bureau of Statistics of China.

Prices fell after rising and growth in housing prices moderated

In 2021, the producer price index (PPI) inflation rate in China rose faster than the CPI inflation rate and the gap between those two widened significantly, reflecting rising supply costs and operational pressure on enterprises. The CPI inflation rate of China was 0.9%, a decrease of 1.6 pps compared to a year earlier. However, affected mainly by imported inflation and supply-demand imbalances of energy, the annual PPI growth rate increased significantly from negative territory to register 8.1% in 2021, an increase of 9.9 pps compared to a year earlier. In March 2022, the annual CPI inflation rate and PPI inflation rate were 1.5% and 8.3%, respectively (Chart 2.11). S&P Global Market Intelligence projects the annual CPI inflation rate will pick up to 2.3% in 2022.

Regarding the housing market, affected by the government's imposition of the "three red lines" policy that puts strict limits on the property developers' leverage, several developers successively fell into liquidity crises and the housing market saw a sharp shrinkage in transaction volume in the second half of 2021. In December 2021, the average growth rate of newly constructed and second-hand housing prices in 70 medium-large cities dropped to 2.6% and 1.7% year on year, respectively (Chart 2.12). Although China's government moderately relaxed the regulations in order to avoid a spiraling debt crisis triggered by some property developers, the housing market will likely remain sluggish in the short term.

Chart 2.12 Average annual growth rates of residential building sales prices in 70 medium-large cities of China

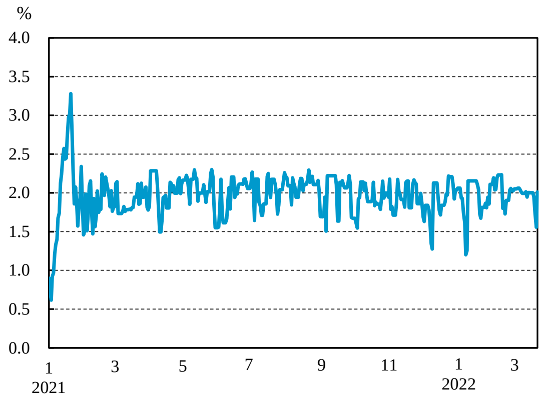


Source: Refinitiv Datastream.

The PBC implemented a more accommodative monetary policy

In 2021, the PBC cut each RRR for financial institutions by 0.5 pps in July and in December, respectively, releasing long-term funds totaling RMB2.2 trillion. Furthermore, in order to boost the economy, the PBC led the market interest rates downwards by means of several policy tools such as the medium-term lending facility (MLF), standing lending facility (SLF) and open market operation (OMO). The interbank overnight call loan rate roughly fluctuated in a range-bound band except for a dramatic movement in the beginning of 2021 owing to the PBC withdrawing excess liquidity from financial markets (Chart 2.13).

Chart 2.13 Overnight Shanghai Interbank Offered Rate



Note: The interbank overnight call loan rate rose sharply in early 2021, mainly owing to the tight monetary policy implemented by the PBC to contain rises in real estate and asset prices.
Source: Bloomberg.

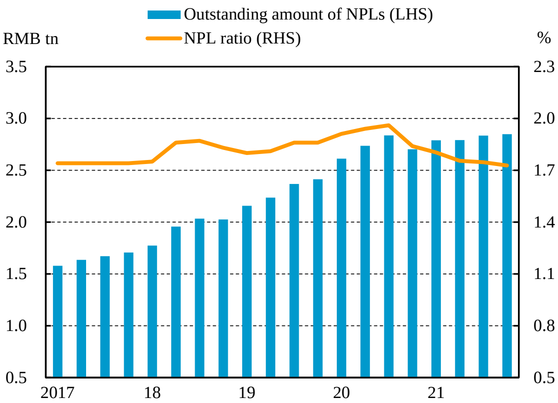
SSE Composite Index was range bound and RMB FX rate trended upwards after heading downwards

In 2021, the Shanghai Stock Exchange (SSE) Composite Index fluctuated between 3,300 and 3,700. During this period, driven by the government tightening regulations on internet platforms and a series of debt defaults by property developers (such as Evergrande Group) in the second half of the year, the SSE Composite Index fell sharply. Afterwards, the Index rebounded and closed at 3,639 at the end of December, representing an annual increase of 4.8%. In mid-March 2022, the SSE Composite Index plummeted to a nearly two-year low of 3,064, and then fluctuated with an uptrend (Chart 2.14).

Chart 2.14 Shanghai Stock Exchange Composite index

Source: Bloomberg.

Chart 2.15 NPLs of China's commercial banks



Source: China Banking and Insurance Regulatory Commission.

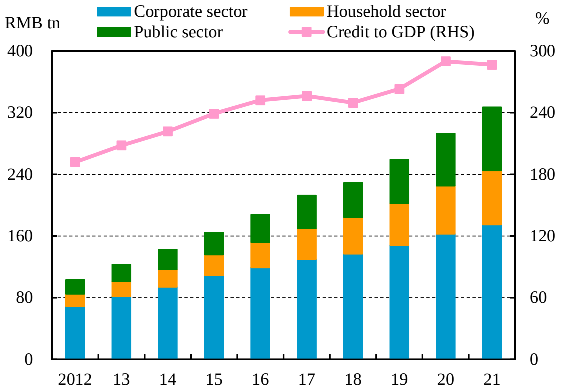
Regarding the FX market, the RMB exchange rate against the US dollar turned to an uptrend after depreciating in 2021 and registered 6.3793 at the end of the year as a result of a more accommodative monetary policy stance by the PBC and an increase in export demand promoted by the pandemic. From the beginning of 2022, driven by the rising demand for RMB in Russia's foreign transactions, the RMB exchange rate continued to appreciate against the US dollar, and reached a nearly four-year high of 6.3107 in early March, but then gradually depreciated. Considering that the economic growth in China will slow down significantly and the US will accelerate the pace of rate hikes, closely monitoring the above-mentioned factors which may still affect the scope of further appreciation of the RMB is warranted.

Growth in new credit slowed, while overall risk remained moderate for the banking industry

In 2021, the annual growth rate of broad money (M2) declined by 1.1 pps to 9.0% from 10.1% a year before. The aggregate financing to the real economy (flow data) also went down to

RMB31.4 trillion. At the end of 2021, the outstanding amount of financing to the real economy (stock data) stood at RMB314.1 trillion, an annual increase of 10.3% compared to a year earlier.

Chart 2.16 Outstanding amount of debt for nonfinancial sectors and credit-to-GDP ratio in China



Source: BIS.

At the end of 2021, the NPLs of commercial banks in China stood at RMB2.85 trillion, an increase of 5.39% year on year, while the NPL ratio continued to drop to 1.73% (Chart 2.15) because of a larger increase in credit. Furthermore, the outstanding amount of classified assets rose to RMB6.66 trillion, equivalent to 4.04% of total loans. Among all types of banks, the NPL ratios of domestic systemically important banks (D-SIBs), such as state-owned commercial banks, were generally lower than 2%, but those of small banks, such as rural commercial banks, exceeded 3%.

China saw a moderate growth in the debt of nonfinancial sectors

According to the statistics of the BIS, the outstanding debt for nonfinancial sectors in China reached a new record high of RMB327.3 trillion at the end of 2021, but its annual growth moderated. The nonfinancial sectors' debt-to-GDP ratio dropped to 286.6%, a decrease of 3.3 pps year on year, mainly driven by a decline in that of the corporate sector (Chart 2.16).

At the end of 2021, the corporate sector's debt-to-GDP ratio went down to 152.8%, decreasing by 8 pps compared with a year earlier. Household sector debt grew moderately and stood at 61.6% of GDP, slightly less than a year earlier. However, the government sector's debt-to-GDP ratio rose to 72.2%, 4.9 pps higher than that of 2020, mainly resulting from the government's massively scaled-up fiscal expenditure to address the COVID-19 pandemic. According to the statistics of China's Ministry of Finance, the outstanding amount of local government debt surged sharply to RBM30.47 trillion at the end of 2021. This, coupled with the huge local government hidden debts, may quickly heighten government debt risks given a continued economic slowdown and potential changes in housing market trends.