

II. Potential macro environmental risk factors

2.1 International economic and financial conditions

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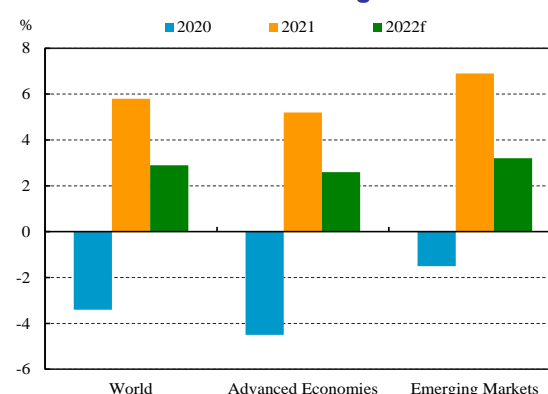
Global economic growth gained momentum in 2021, owing to expanded rollout of vaccines across countries, large-scale accommodative monetary policies employed by central banks, and a low base-year level in 2020. From 2022 onwards, the spread of the Omicron variant and the eruption of the Russia-Ukraine 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).

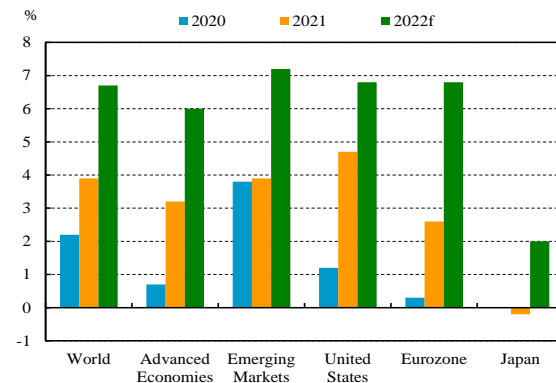
¹² S&P Global Market Intelligence estimate on May 15, 2022.

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 Intelligence¹³ 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.

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).

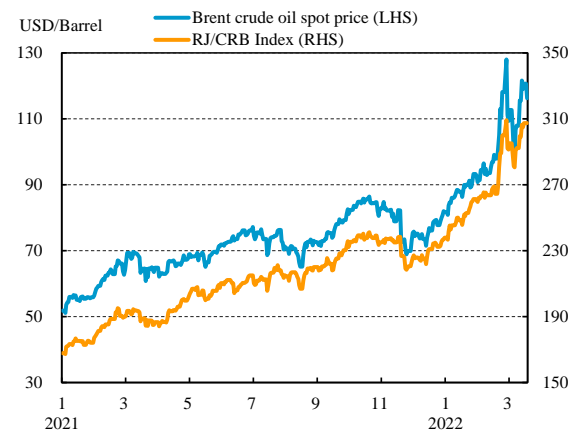
Chart 2.2 Global headline inflation indices



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

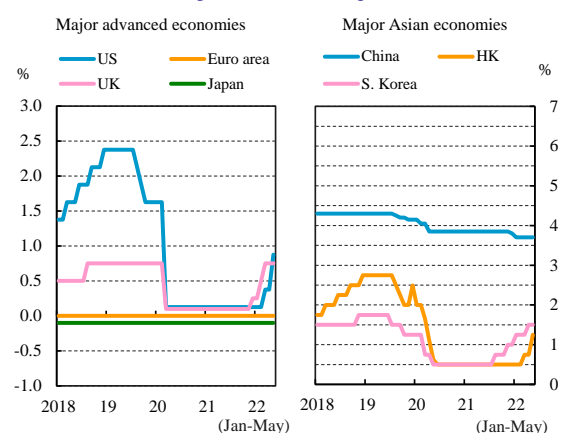


Source: Bloomberg.

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

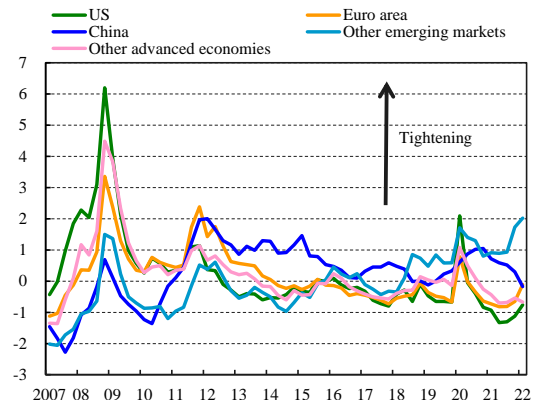
In 2021, since the real economy had not fully regained momentum amid the COVID-19 pandemic, major central banks maintained accommodative monetary policies by providing low interest rates. Then, from the beginning of 2022, central banks in Europe and the US, such as the Fed, gradually sped up the pace 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).

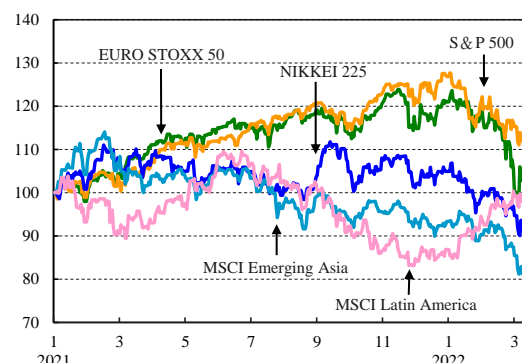
The Russia-Ukraine war impacted the global financial system

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.

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

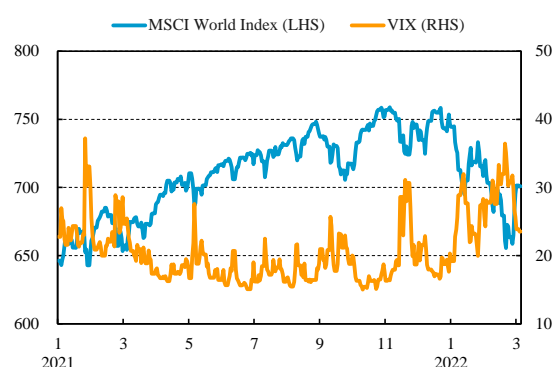
Chart 2.6 Major international equity indices



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.

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.

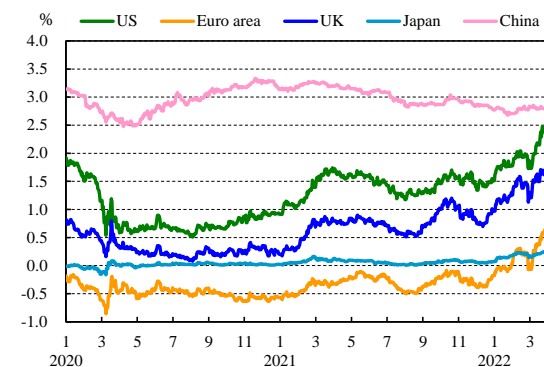
The war in Ukraine had a greater impact on European banks

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

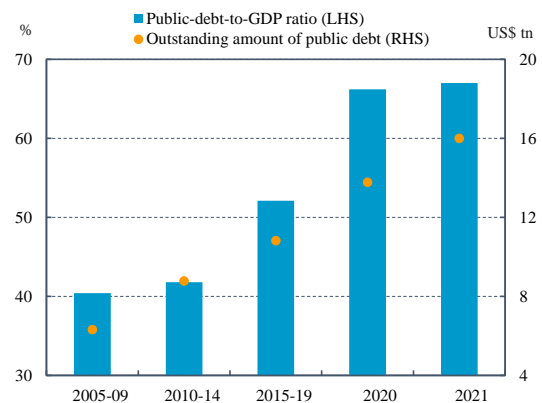
Following the COVID-19 outbreak, since governments in emerging markets greatly increased fiscal support to cushion the impact of the pandemic on firms and households, the average

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.

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.
- DeFi¹⁶ 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

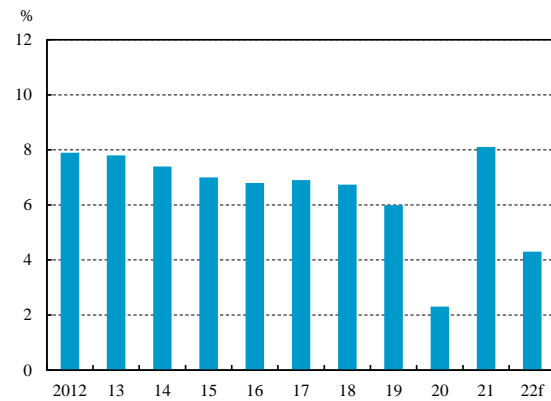
In 2021, the annual economic growth rate of China rebounded sharply to 8.1% (Chart 2.10) with an increase of 5.8 pps over the previous year, better than those of other major economies.

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).

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

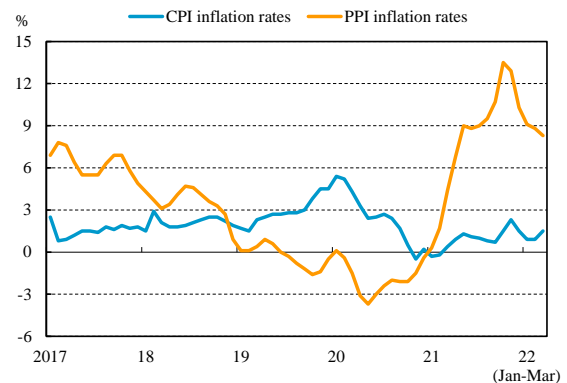
Chart 2.10 Economic growth rate of China



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.

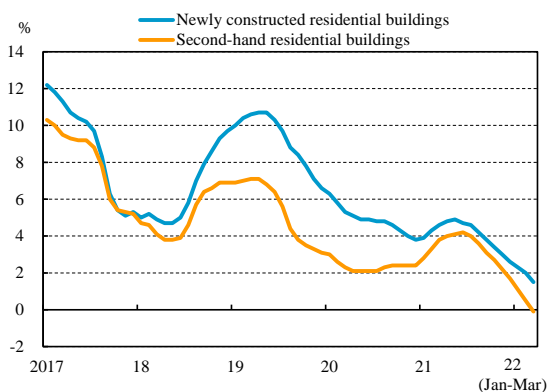
up to 2.3% in 2022.

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.

The PBC implemented a more accommodative monetary policy

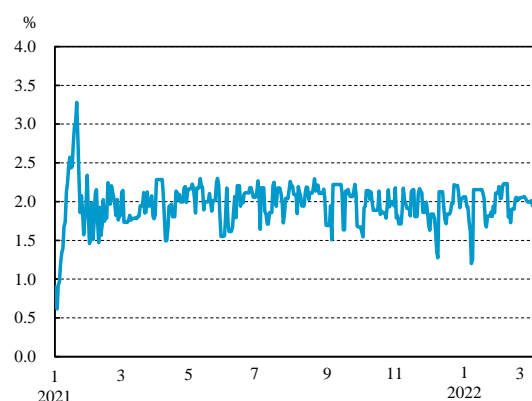
In 2021, the PBC cut each RRR for financial institutions by 0.5 pps in July and in December, respectively, releasing long-term funds totaling RMB2.2 trillion. Furthermore, in order to boost the economy, the PBC led the market interest rates downwards by means of several policy tools such as the medium-term 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 2.12 Average annual growth rates of residential building sales prices in 70 medium-large cities of China



Source: Refinitiv Datastream.

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).

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

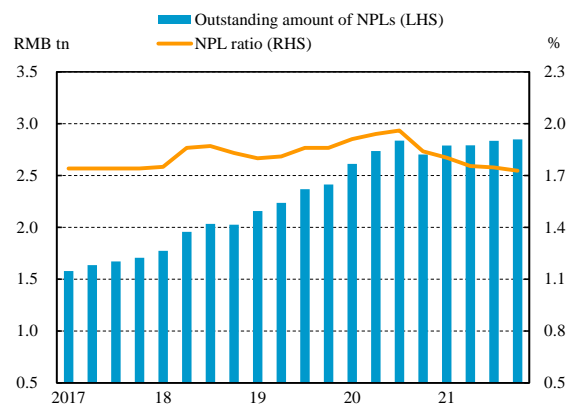
In 2021, the annual growth rate of broad money (M2) declined by 1.1 pps to 9.0% from 10.1% a year before. The aggregate financing to the real economy (flow data) also went down to

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.

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.

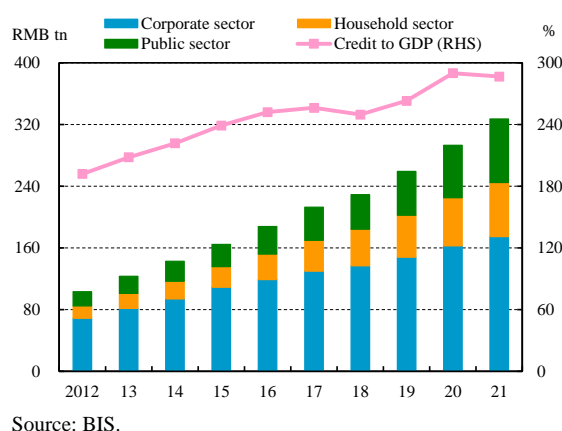
At the end of 2021, the NPLs of commercial banks in China stood at RMB2.85 trillion, an increase of 5.39% year on year, while the NPL ratio continued to drop to 1.73% (Chart 2.15) because of a larger increase in credit. Furthermore, the outstanding amount of classified assets rose to RMB6.66 trillion, 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 RMB30.47 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.

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



2.2 Domestic macro environment

2.2.1 Domestic economic and fiscal conditions

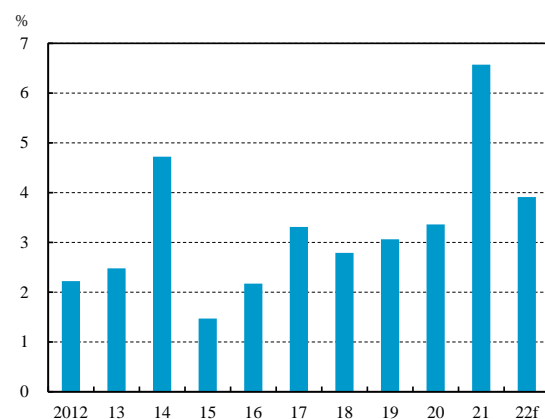
Benefiting from significant growth in exports and private investment, together with the gradual recovery of private consumption, domestic economic growth momentum was strong in 2021 and inflation was relatively moderate. External debt servicing capacity stayed robust on the back of a persistent surplus in the balance of payments and ample FX reserves. The government expanded annual expenditures in response to the COVID-19 pandemic and maintained economic growth momentum. This resulted in an increase in fiscal deficits and outstanding public debt, albeit still within a manageable level. The impacts of global inflationary pressures and economic downside risks elevated by the Russia-Ukraine war on Taiwan's economic growth momentum warrant close attention.

Taiwan's economic growth momentum was strong

In 2021, exports and private investment thrived.¹⁷ Moreover, private consumption progressively rebounded with loosened epidemic prevention measures in the second half of the year, bolstering economic growth. The annual economic growth rate reached 6.57%,¹⁸ hitting a record high in the past eleven years (Chart 2.17).

Looking ahead to 2022, growth momentum for exports is supposed to remain solid. Furthermore, domestic and foreign technology companies are projected to increase investment and expand capacity in Taiwan, as well as proceed with major investment plans such as green energy, which are expected to buttress private investment. However, considering that recurring waves of the domestic COVID-19 pandemic might impact the uptrend in

Chart 2.17 Economic growth rate in Taiwan



Note: Figure for 2022 is a DGBAS forecast released on May 27, 2022.

Source: DGBAS.

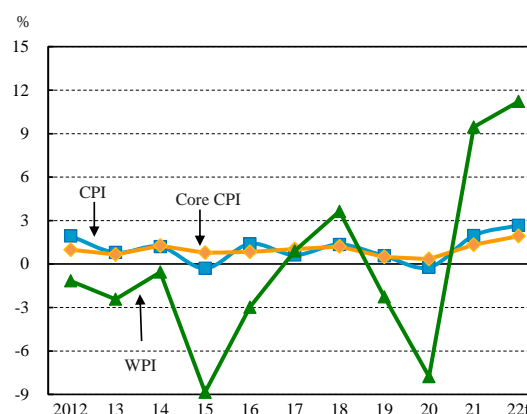
¹⁷ As of the end of 2021, investments of the three major programs in Taiwan had increased over NT\$1.6 trillion. With continuously active investments in Taiwan by global companies and the government's proactive efforts to expand and accelerate public infrastructure projects, private investment grew steadily, becoming one of the main drivers of economic growth.

¹⁸ Press release of the DGBAS on May 27, 2022.

consumption, the DGBAS predicts that the annual economic growth rate will register 3.91% (Chart 2.17).

Furthermore, the exacerbating Russia-Ukraine war and economic sanctions imposed by major countries on Russia recently have affected global financial markets and supply chains. If the war drags on, it may further heighten global inflationary pressures and economic downside risks. The spillover effects on Taiwan's economic growth momentum warrant close attention.

Chart 2.18 Consumer and wholesale price indices (% change, yoy)



Note: Figures for Core CPI in 2022 are CBC forecasts released on March 17, 2022; other figures are DGBAS statistical data and a forecast released on May 27, 2022.

Sources: DGBAS and CBC.

Domestic inflation was relatively moderate compared to European economies or the US

On account of hikes in international energy as well as raw material and commodity prices, annual wholesale price index (WPI) inflation ascended to 9.46% in 2021, much higher than the -7.77% of the previous year. The DGBAS projected that annual WPI inflation would keep mounting to 11.22% in 2022. With regard to consumer prices, annual CPI inflation registered 1.96% in 2021, higher than the -0.23% recorded a year earlier. The main reasons were a lower base of periodic comparison, coupled with relatively high international agricultural and industrial raw material prices and elevated oil prices. The core CPI inflation, which excludes fruit, vegetables, and energy, increased to 1.33% in 2021, higher than the 0.35% of the previous year, but at a milder pace (Chart 2.18).

Owing to soaring international raw material and commodity prices caused by the conflict between Russia and Ukraine, the annual CPI inflation rate rose to 3.38% in April 2022. Most major domestic and foreign institutions projected that Taiwan's CPI inflation rate would be higher than 2% in 2022. The Bank forecasted that the annual CPI and core CPI inflation rates would be 2.37% and 1.93%, respectively, and that inflation shocks would mainly come from the supply side. In addition, considering that product prices would be reflected in manufacturer's cost pressures to some degree, the DGBAS revised the predicted CPI inflation rate of 2022 up to 2.67% in May. Looking ahead, supply chain bottlenecks and geopolitical

risks are likely to continue to be uncertain factors influencing domestic and foreign inflation trends, which warrant attention (Box 1).

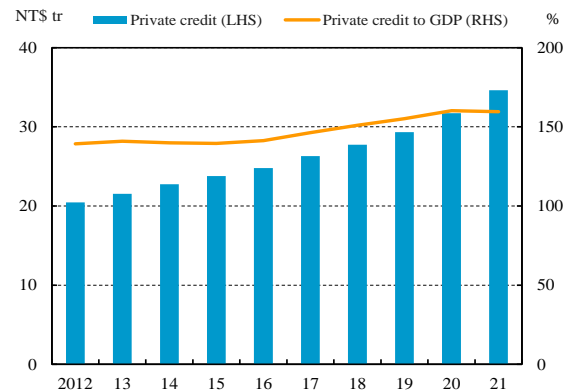
Credit to the private sector increased continually

Private credit¹⁹ to private enterprises and households provided by domestic financial institutions continued to grow in 2021, reaching NT\$34.63 trillion at the end of the year, an increase of 9.22% year on year, which was higher than the economic growth rate. The ratio of credit to GDP registered 159.52%, remaining roughly unchanged compared with the previous year (Chart 2.19). This showed that the credit provided by domestic financial institutions was sufficient to support economic activity.

Current account surplus reached a new high and FX reserves stayed ample

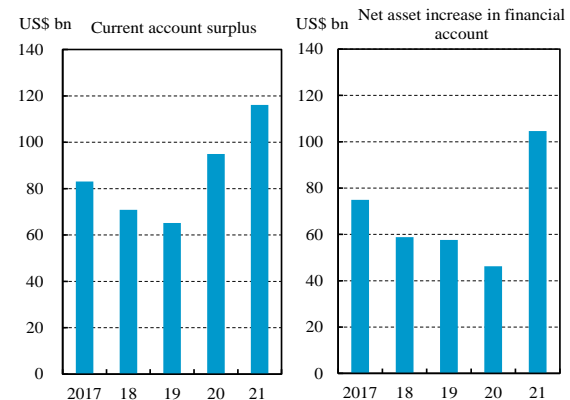
In 2021, the merchandise trade surplus kept expanding and the sharply increased freight proceeds pushed up the surplus of the services account. As a result, the annual current account surplus rose to a record high of US\$116.1 billion (Chart 2.20, left panel), or 14.98% of the year's GDP, an increase of US\$21.2 billion,

Chart 2.19 Private credit provided by financial institutions



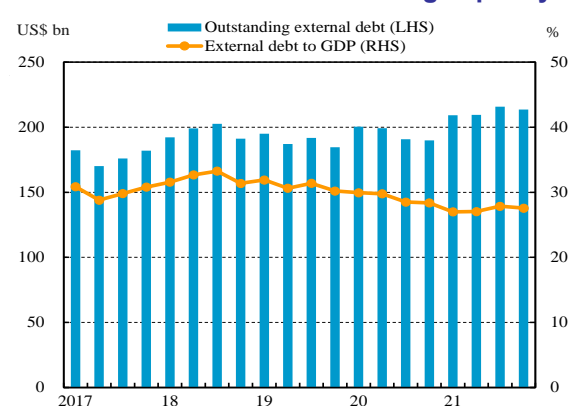
Sources: DGBAS and CBC.

Chart 2.20 Current account surplus and net asset increase in financial account



Source: CBC.

Chart 2.21 External debt servicing capacity



Notes: 1. Figures for outstanding external debts are on an end-of-period basis.

2. Figures for GDP are on an annualized basis.

Sources: CBC and DGBAS.

¹⁹ Private credit refers to the loans granted by major financial institutions to various private enterprises, individuals, and non-profit organizations in Taiwan, as well as the purchases of securities such as stocks, corporate bonds, commercial paper, acceptance bills, beneficiary certificates issued by private enterprises, and the equities of long-term investments in private enterprises.

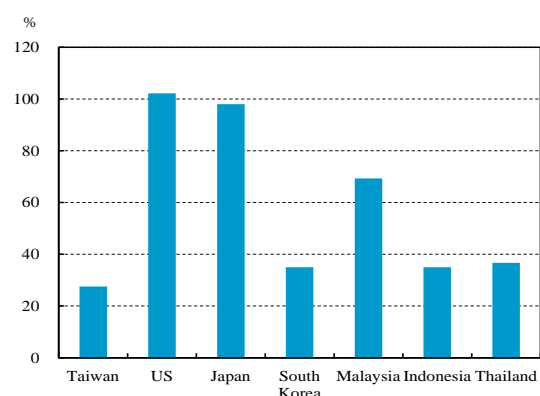
or 22.29% over the previous year.²⁰ In terms of the financial account, as banks and insurance companies increased foreign securities investments which boosted foreign assets, along with a decrease in foreign liabilities owing to reduced holdings of Taiwanese stocks by foreign institutional investors, the financial account posted an increase of US\$104.6 billion throughout the year (Chart 2.20, right panel) and hit a record high. Meanwhile, the Bank's reserve assets increased by US\$21 billion compared to the previous year.

FX reserves amounted to US\$548.4 billion at the end of 2021, rising by 3.49% from a year earlier, mainly supported by the earnings from portfolio investment operations of FX reserve assets, and the adjustment operations by the Bank to maintain an orderly foreign exchange market. At the end of March 2022, the FX reserves continuously increased to US\$548.8 billion.

The scale of external debt expanded, while debt servicing capacity remained strong

Primarily because of an increase in the short-term external debt of the private sector, Taiwan's external debt²¹ rose to US\$213.6 billion at the end of 2021, increasing by 12.49% compared to a year earlier (Chart 2.21). The largest share of external debt went for the private sector, registering US\$212 billion, while the public sector share only reached US\$1.6 billion. Taiwan's external debt to GDP stood at 27.56% at the end of 2021, slightly declining from 28.37% at the end of the previous year. It was lower than the internationally recognized alert threshold,²² and

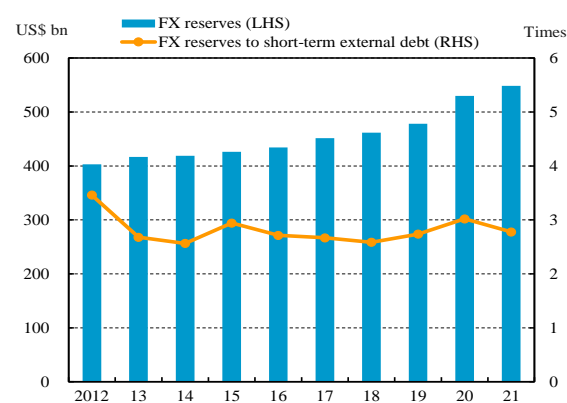
Chart 2.22 External debt to GDP in selected countries



Note: Figures are as of the end of 2021.

Source: CEIC.

Chart 2.23 Short-term external debt servicing capacity



Source: CBC.

²⁰ For the ratio of current account deficit to GDP, it is generally deemed that its critical value as a risk measure is 3%. A country in which the reading is greater than 3% and has risen by at least 5 pps from the previous year is considered to be relatively high risk.

²¹ See Note 4.

²² The general international consensus is that a country with a ratio of external debt to GDP lower than 50% is deemed to be relatively low risk.

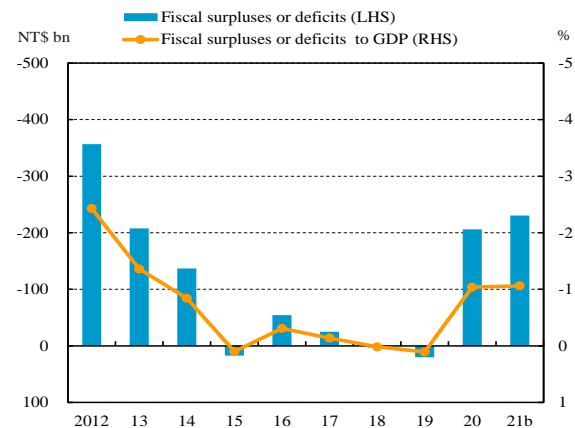
much lower those in the US and neighboring Asian countries (Chart 2.22).

Furthermore, at the end of 2021, the ratio of FX reserves to short-term external debt came down to 2.78 times owing to a greater increase in short-term external debt than FX reserves (Chart 2.23). However, it was still much higher than the internationally recognized alert threshold,²³ implying that Taiwan's FX reserves have a decent capacity to meet payment obligations.

Fiscal deficits and government debt stayed within a manageable level

In 2021, in order to respond to the domestic COVID-19 resurgence and maintain economic growth momentum, the government increased the special budget for epidemic prevention and relief packages twice, and also actively promoted a number of measures, such as the *Forward-looking Infrastructure Development Program*, leading to an expansion of annual expenditures. As a result, the government fiscal deficit expanded from NT\$205.9 billion recorded in the previous year to NT\$230.4 billion, equivalent to 1.06% of GDP for the year (Chart 2.24), which was better than internationally recognized minimum levels²⁴ and lower than those of major economies including the US, the euro area, UK, and Japan (Chart 2.25).

Chart 2.24 Fiscal deficits

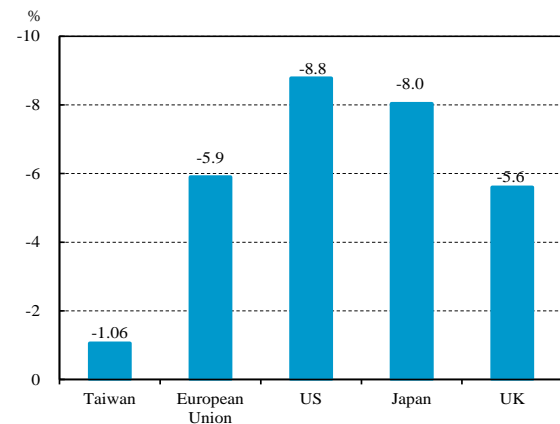


Notes: 1. Fiscal position data include those of central and local governments.

2. Figures for 2021 are final accounts for the central government and budgets for local governments.

Sources: MOF and DGBAS.

Chart 2.25 Fiscal deficits in selected countries



Note: Figures are as of the end of 2021.

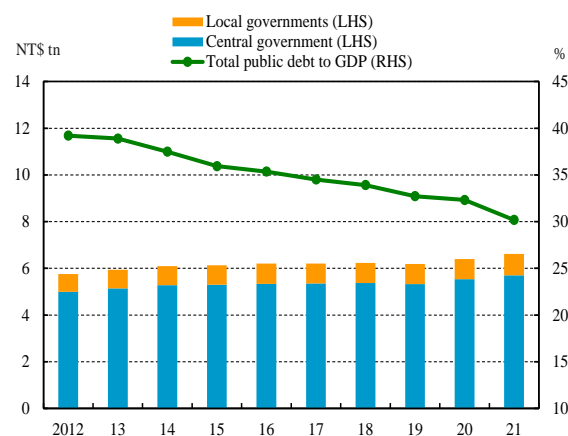
Source: IMF.

²³ The general international consensus is that a country with a ratio of FX reserves to short-term external debt higher than 100% is deemed to be relatively low risk.

²⁴ See Note 5.

The outstanding public debt at all levels of government²⁵ rose to NT\$6.55 trillion at the end of 2021, increasing by 2.34% year on year, while the ratio of total public debt to the year’s GDP continued dropping to 30.18% (Chart 2.26). Government debt still stayed within a manageable level.²⁶

Chart 2.26 Public debt



Notes: 1. Outstanding public debt refers to non-self-liquidating debt with a maturity of one year or longer, excluding external debt.

2. Figures for 2021 are preliminary final accounts for the central government and budgets for local governments.

Sources: MOF and DGBAS.

²⁵ The term “outstanding debt at all levels of government” as used in this report refers to outstanding non-self-liquidating debt with a maturity of one year or longer.

²⁶ See Note 6.

Box 1

Recent developments and possible effects of domestic and overseas inflation

Since 2021 onwards, global demand has rebounded, which is attributed to the restarting of economic activity in various countries. However, the supply-demand imbalances and supply chain bottlenecks have largely resulted in the inflationary spike in major economies. Moreover, the recent Russia-Ukraine war has prompted a number of countries to impose sanctions on Russia, thereby provoking a sharp rise in commodity prices. If the war persists, it could trigger imported inflation and further drive up global inflationary pressures which thus warrant close attention. This Box discusses the causes of recent inflation domestically and overseas, its development, and possible effects, as well as explaining Taiwan's main measures to deal with rising inflation.

1. Factors affecting inflation at home and abroad

1.1 Inflationary pressures in major economies mostly mirrored the impact of the epidemic on both the supply and demand sides

The causes of elevated foreign inflationary pressures since 2021 have been mostly related to the progression of the pandemic in each country. For example, owing to the rising demand for energy in the wake of the easing of lockdowns, international oil prices picked up from a low level in 2020. As a result, the contribution of global energy prices to the annual growth rate of the consumer price index (CPI) turned positive in 2021 from negative in 2020. Furthermore, some economies did not effectively solve the problem of port congestion, which caused exorbitant freight rates, or severe labor shortages caused wages to rise. These were also the reasons for elevated inflation.

Compared to pre-pandemic levels, the ratio of commodity consumption to household expenditures in major economies increased in 2021. Meanwhile, commodity prices rose more than services prices, especially in the United States. In view of the pandemic, governments around the world offered citizens cash subsidies and relief funds to expand households' disposable incomes; therefore, consumption momentum in the short term was boosted, which in turn affected domestic prices.

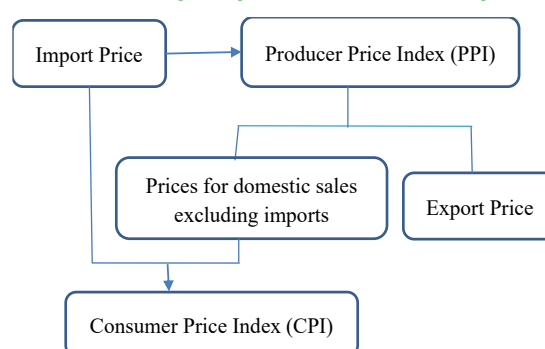
1.2 Rising prices in Taiwan derived mainly from a supply shock

1.2.1 The transmission channel of import prices to domestic inflation

Nearly 90% of Taiwan's imported commodities are agricultural & industrial raw materials and capital goods, of which agricultural & industrial raw materials need to go through several processing stages before they are converted into finished products, which will be

transported and eventually sold to consumers. As imported goods can be delivered and directly sold to consumers, they have an influence on the CPI. Apart from that, oil imports can directly affect the CPI via a floating price mechanism, and agricultural & industrial raw materials may also indirectly affect the CPI by causing an impact on the prices for domestic sales excluding imports (Chart B1.1).

Chart B1.1 The transmission channel of import prices to domestic prices



Source: CBC.

1.2.2 Price spikes in Taiwan stemmed mainly from supply-side factors in 2021

Taiwan's CPI grew by 1.96% in 2021, showing a relatively high increase, mostly owing to supply-side factors such as price surges in fuel and lubricants, flight tickets, fruit and vegetables, as well as a lower base period in 2020.

2. The development of foreign and domestic inflation

2.1 Global inflationary pressures escalated on account of the Russia-Ukraine conflict dragging on

Major central banks and international institutions' summaries of inflation outlooks at the end of 2021 pointed out that if the pandemic slows down, it will lead to a smaller oil price rise, and will also help deal with port congestion as well as container and chip shortages. Furthermore, labor force participation rates may rebound, easing the pressure of rising wages, and consumer demand for commodities would return to normal. If the benefits of the aforementioned factors are realized, the pressure of rising prices is likely to be mitigated.

However, the outbreak of the Russia-Ukraine war in February 2022 sent a shockwave through global energy and food supply chains, causing international energy and commodity prices to fluctuate at high levels. Consequently, S&P Global Market Intelligence significantly revised up inflation forecasts for major economies in 2022. On condition that the Russia-Ukraine war intensifies and the scope of sanctions against Russia expands, global inflationary pressures may rise further, which warrant attention.

2.2 Taiwan's inflationary spike is still moderate in comparison to Europe and the US

Against the backdrop of ongoing global supply chain bottlenecks and the conflict between Russia and Ukraine, international commodity prices such as crude oil, cereals, and base metals have skyrocketed, pushing up the cost of imported raw materials in Taiwan and aggravating domestic inflationary pressures. Besides this, the NT dollar exchange rate against the US dollar has weakened recently. If the NT dollar depreciates more against the US dollar compared to the previous year, the pressures of domestic imported inflation could broaden.

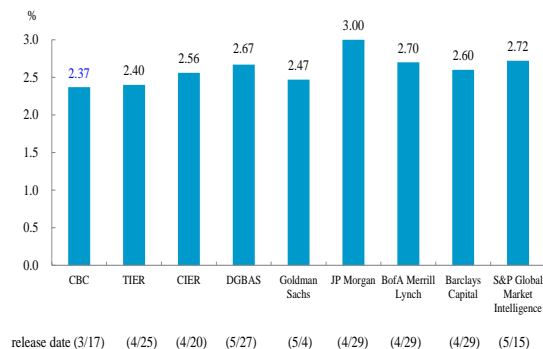
Considering that the recent Russia-Ukraine conflict will further push up global inflation, S&P Global Market Intelligence and the DGBAS in May 2022 raised their forecasts for Taiwan's 2022 CPI inflation rate to 2.72% and 2.67%, respectively. Other major institutions also predicted that CPI inflation in Taiwan will be above 2% (Chart B1.2), still lower than those in Singapore (4.75%) and South Korea (4.36%). Nevertheless, unlike Europe and the US, which are seeing significant increases in inflation because of severe supply-demand imbalances, Taiwan's inflation mainly results from supply-side shocks. Therefore, the annual growth rate of Taiwan's CPI in 2022 may fall back in the middle of the year as the gain in crude oil prices slows down.

3. Possible impact of rising inflation on economic recovery and measures taken by Taiwanese authorities

3.1 High and persistent inflation in some economies might impact their consumer confidence and curb economic recovery

High and persistent inflation in some European economies and the US has weighed heavily on their consumer purchasing power. Moreover, labor shortages have fed into rising wages, which could be passed on to consumer prices. As a consequence, inflation expectations would be formed, causing a wage-price spiral. In addition, a long-lasting conflict between Russia and Ukraine could further have an influence on global consumer confidence and affect economic growth momentum in major economies (such as the US, the euro area, China, and Japan), thus setting back the global recovery. Facing high global inflation,

Chart B1.2 Taiwan's CPI inflation rate forecast in 2022



Sources: CBC and major domestic and international institutions.

governments around the world have launched different measures to address its adverse impacts. For example, with the aim of easing high inflationary pressures, major economies, such as the US and the UK, commenced to raise interest rates, and the US also released some of its strategic petroleum reserve.

3.2 The Taiwanese government has actively adopted measures to stabilize prices affected by imported inflation pressures

In the past twenty years, low and stable inflation rates in Taiwan, with the average annual CPI growth rate coming in at 0.96% and average volatility being 1.07%, maintained consumer purchasing power, and cut down uncertainties around fluctuations in relative prices and the level of future prices. This helped curtail distortions in resource allocation efficiency and improve economic efficiency, thereby promoting sustainable economic growth.

Since the second half of 2021, the domestic inflation rate has trended upward under the pressures of imported inflation. Meanwhile, the annual growth rate of the CPI has been above 2% for several months. Nonetheless, compared with countries in Europe and the US, Taiwan's inflation is still moderate and the government has actively adopted the following price stabilization measures to alleviate the impact on consumers and the domestic economy.

3.2.1 Hiking the policy rates

In view of still-elevated domestic prices, the Bank decided to raise the policy rates by 0.25 percentage points on March 17, 2022 to contain domestic inflation expectations, and achieve the policy objectives of maintaining price stability and sound economic and financial development as a whole.

3.2.2 Cutting tariffs on staple goods, and lowering commodity and business taxes

Considering fluctuations in international energy and commodity prices, the government lowered tariffs on key raw materials as well as commodity and business taxes until the end of June 2022 in order to stabilize the prices of staple goods and reduce operational burdens for businesses.

3.2.3 Keeping prices of household natural gas, bottled gas, and electricity unchanged

With a focus on the cost of living and price stabilization, prices of household natural gas, bottled gas, and electricity in Taiwan will remain unchanged until the end of June 2022. The prices will be reviewed afterwards.

4. Conclusion

Domestic price hikes have been a social concern since the start of 2021. The Taiwanese government has hence adopted relevant measures to stabilize prices. The inflation rate in Taiwan has been relatively low and stable compared to major countries from a long-term perspective, which helps preserve the purchasing power of money and sustain the momentum of economic growth.

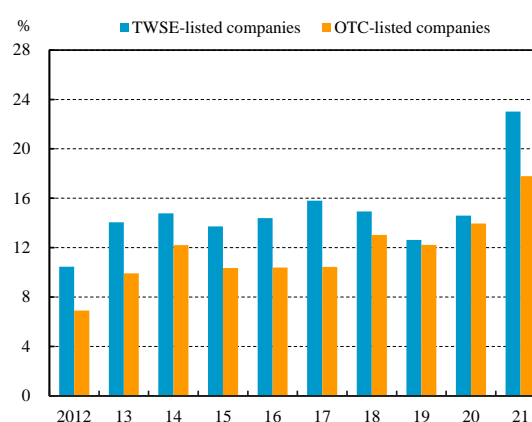
2.2.2 Corporate sector

Although the COVID-19 pandemic had not eased either globally or domestically in 2021, the overall profitability of TWSE- and OTC-listed companies bucked the trend with sharp growth. At the end of 2021, the financial leverage ratio of TWSE-listed companies slightly decreased, while that of OTC-listed companies elevated compared to the end of the previous year. However, the overall short-term debt servicing capacity improved significantly. The NPL ratio for corporate loans granted by financial institutions declined, and the credit quality for the corporate sector was satisfactory.

Revenue and profit of both TWSE- and OTC-listed companies reached record highs despite the impact of the COVID-19 pandemic

In 2021, even though the pandemic continued to hit the operation of some industries in Taiwan, the performance of the corporate sector set a new high on the back of the steady global economic recovery and the expansion of emerging technology applications. The net operating revenue of TWSE- and OTC-listed companies reached NT\$35.05 trillion and NT\$2.62 trillion, driving the average ROE to jump to 23.01% and 17.78% from 14.60% and 13.95%, respectively, in the previous year (Chart 2.27). Both revenue and profit of listed companies reached historical highs, and the overall profitability ascended remarkably.

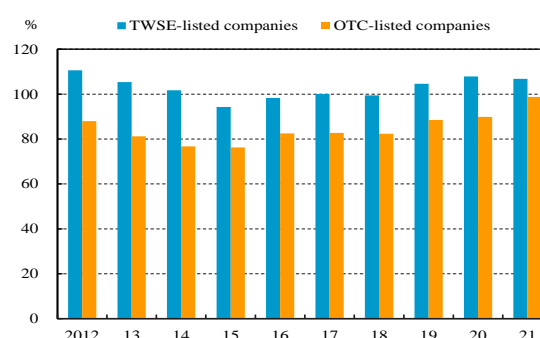
Chart 2.27 Return on equity in corporate sector



Note: Return on equity = net income before interest and tax/average equity.

Source: TEJ.

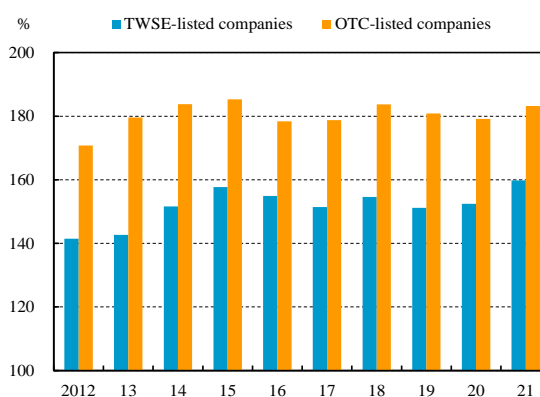
Chart 2.28 Leverage ratios in corporate sector



Note: Leverage ratio = total liabilities/total equity.

Source: TEJ.

Chart 2.29 Current ratios in corporate sector



Note: Current ratio = current assets/current liabilities.

Source: TEJ.

Leverage ratio for TWSE-listed companies decreased slightly, and that for OTC-listed companies increased. However, the overall short-term debt servicing capacity improved significantly

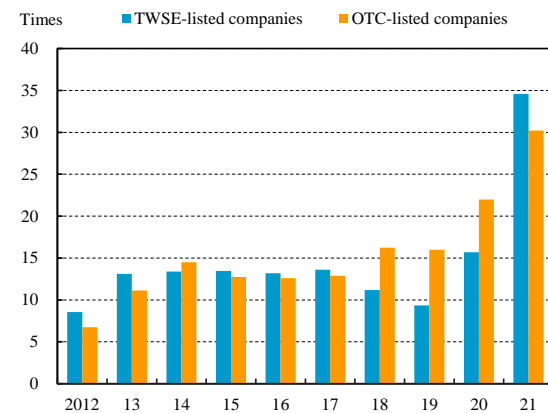
At the end of 2021, the average leverage ratio for TWSE-listed companies slightly dropped to 106.85% from 107.85% a year earlier primarily because of a substantial surge in earnings. Nevertheless, the ratio for OTC-listed companies climbed from 89.88% at the end of the previous year to 98.81% (Chart 2.28), mainly attributable to business operational needs which induced an increase in the issuance of CP and corporate bonds.

At the end of 2021, the current ratios for TWSE- and OTC-listed companies rose slightly to 159.79% and 183.21% from 152.43% and 179.14%, respectively, a year earlier (Chart 2.29), and their interest coverage ratios sharply climbed to 34.58 times and 30.23 times from 15.70 times and 21.99 times, respectively, (Chart 2.30) owing to a substantial increase in profits. Overall, the short-term debt servicing capacity for listed companies was significantly improved.

The NPL ratio of the corporate sector fell, and the credit quality of corporate loans was satisfactory

The NPL ratio for corporate loans²⁷ from financial institutions dropped to a new low of 0.23% at the end of 2021 from 0.28% a year earlier (Chart 2.31). The overall credit quality for the corporate sector was satisfactory.

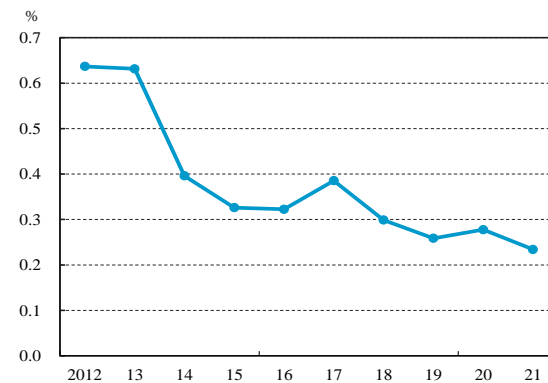
Chart 2.30 Interest coverage ratios in corporate sector



Note: Interest coverage ratio = income before interest and tax/interest expenses.

Source: TEJ.

Chart 2.31 NPL ratio of corporate loans



Source: JCIC.

²⁷ The data for the corporate sector herein are on the basis of listed and unlisted corporations provided by the Joint Credit Information Center (JCIC), excluding the data of overseas branches of domestic banks.

2.2.3 Household sector

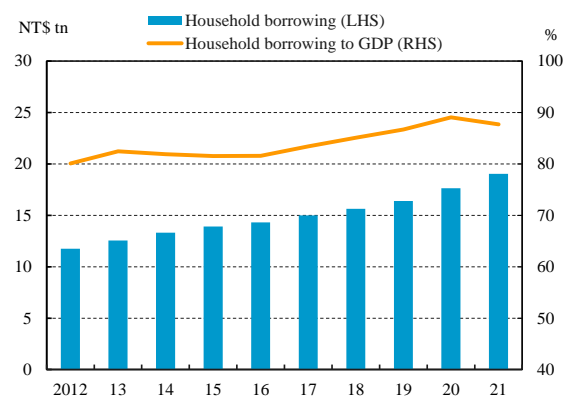
The balance of total household borrowing expanded continually, while household indebtedness slightly decreased in 2021. Household net worth was enormous, reflecting that the debt servicing capacity of households remained sound. Moreover, the credit quality of household borrowing from financial institutions appeared to be satisfactory.

Household borrowing grew continually, while its proportion to GDP fell

Total household borrowing increased and reached NT\$19.04 trillion at the end of 2021, equivalent to 87.69% of annual GDP for the year (Chart 2.32), lower than the 89.04% of the previous year. The main purpose of household borrowing was to purchase real estate, accounting for 62.67%, followed by current operation loans, accounting for 35.06% (Chart 2.33).

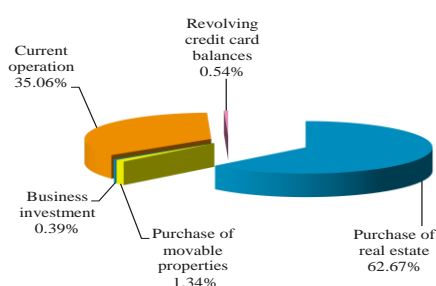
The annual growth rate of household borrowing rose to 7.99% in 2021 from 7.54% in the previous year, mainly attributable to the purposes of real estate purchase and working capital needs. Compared to other countries, the growth rate of total household borrowing in Taiwan was lower than that in South Korea, but higher than those in the US, Australia, and Japan. As for household borrowing to GDP, Taiwan's ratio was lower than those in Australia and South Korea, but higher than those in the US and Japan (Chart 2.34).

Chart 2.32 Household borrowing to GDP



Sources: CBC, JCIC, and DGBAS.

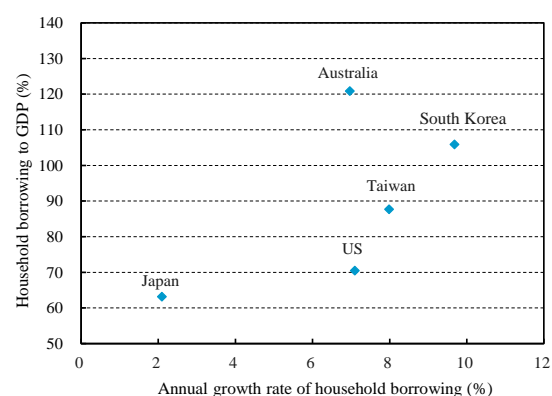
Chart 2.33 Household borrowing by purpose



Note: Figures are as of the end of 2021.

Sources: CBC and JCIC.

Chart 2.34 Household indebtedness in selected countries



Note: Figures are as of the end of 2021.

Sources: Fed, BOJ, BOK, ABS, IMF, DGBAS, JCIC, and CBC.

Household indebtedness decreased slightly and net worth was high

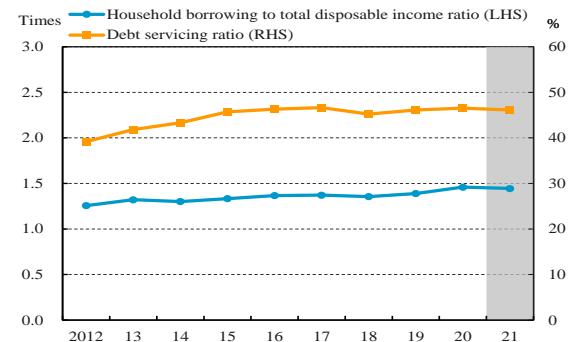
The ratio of household borrowing to total disposable income²⁸ slightly dropped to 1.44 in 2021, reflecting a slightly eased household debt burden. Moreover, the debt servicing ratio also dropped marginally to 46.14% (Chart 2.35), indicating that short-term household debt servicing pressure relaxed. In the meantime, an increase in the minimum wage and a pay raise for military personnel, civil servants, and teachers are expected to encourage corporations to follow suit, which will help to further improve household disposable income and debt servicing capacity.

Furthermore, household net worth²⁹ in Taiwan has been remarkable over the past decades and has held at more than 8 times the GDP in recent years. Compared to other countries, the household net worth to GDP ratio in Taiwan was far higher than those in the UK, the US, South Korea, and Singapore (Chart 2.36), showing that the financial condition of households in Taiwan was sound with fair debt servicing capacity.

Credit quality of households stayed strong

Economic activity has gradually recovered with the domestic COVID-19 pandemic easing from the second half of 2021 onwards. The unemployment rate fell back to 3.64% in December, and the actual number of employees who needed to reduce working hours as previously

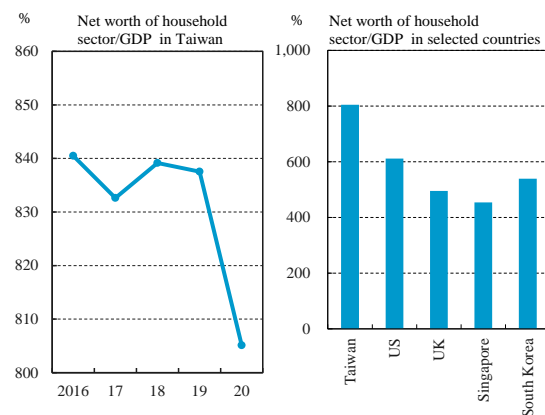
Chart 2.35 Household indebtedness and debt servicing ratio



Notes: 1. Total disposable income in shaded area is a CBC estimate.
2. Debt servicing ratio = borrowing service and principal payments/total disposable income.

Sources: CBC, JCIC, and DGBAS.

Chart 2.36 Household net worth to GDP



Notes: 1. The household sector herein includes households and non-profit organizations.

2. In the right panel, figures are as of the end of 2020.

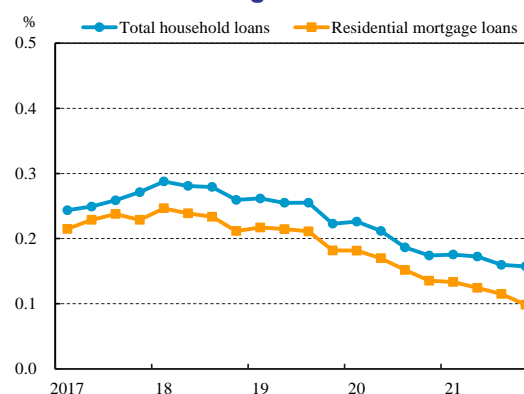
Sources: DGBAS and official websites of selected countries.

²⁸ Total disposable income = disposable income + rental expenses + interest expenses.

²⁹ See Note 7.

determined through negotiations with employers also significantly dropped to 18,272, indicating that the impact of COVID-19 on the household sector shrank noticeably. These factors, coupled with persistently low interest rates, were conducive to reducing household indebtedness. As a result, the NPL ratios of household borrowing and loans for purchase of real estate decreased to a new low of 0.16% and a historical low of 0.10%, respectively (Chart 2.37), reflecting satisfactory credit quality.

Chart 2.37 NPL ratios of household borrowing



Source: JCIC.

2.2.4 Real estate market

Transactions in the housing market thrived and house prices trended upwards in 2021. The mortgage burden slightly increased and the pressure from an overhang of unsold new residential houses remained a concern. Nonetheless, transactions in the housing market grew at a slower pace in early 2022. In terms of housing credit, as the Bank adjusted its targeted macroprudential measures four times from December 2020 onwards and relevant ministries and government agencies also actively adopted measures to curb speculation in the housing market, the growth of construction loans and new housing loans extended by banks has slowed since February and July 2021, respectively; meanwhile, banks' risk management of real estate loans remained satisfactory.

Transactions in the real estate market thrived but trading volumes grew at a slower pace

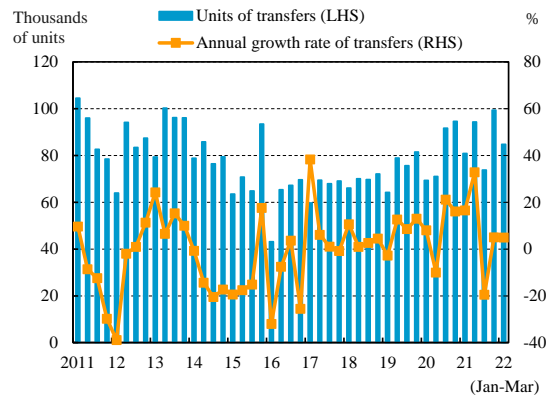
In the first half of 2021, owing to rising demand for houses around industrial parks and buoyant market expectation for house prices to rise amid booming exports and strong private investments as well as a lower base period, the total number of building ownership transfers substantially increased by 24.77% compared to the same period of the previous year. However, in 2021 Q3, affected by the upgrade of the COVID-19 alert to level 3, the total number of building ownership transfers decreased sharply by 19.53% over the same period of the previous

year. With the domestic COVID-19 pandemic easing, loosened restrictions, and steady economic growth, the housing market recovered rapidly and the annual growth rate rebounded to 5.01% in 2021 Q4. In 2021, the total number of building ownership transfers reached 348 thousand units, a record high since 2014, with an annual growth rate of 6.62% (Chart 2.38).

Since December 2020, the Bank has adjusted its targeted macroprudential measures regarding real estate loans four times, tightening loan standards of those loans under regulation. Coupled with the measures successively launched by the relevant ministries and agencies to curb speculation in the housing market, housing transactions grew at a slower pace in early 2022, while the annual growth rate of the total number of building ownership transfers dropped to 4.88% for the period of January to March (Chart 2.38).

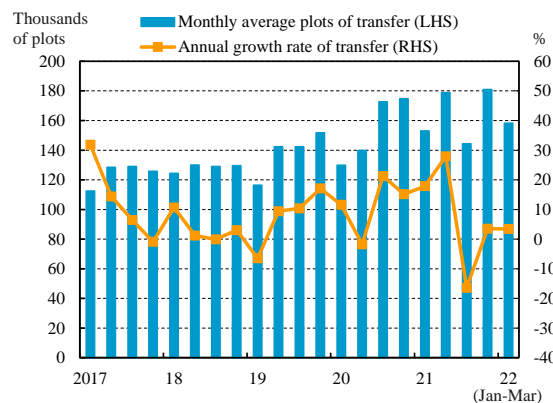
Regarding land transactions, amid a buoyant housing market, and boosted by growing land demand from manufactures seeking to expand their factories, coupled with the active purchase of vacant land by the real estate industry and increased domestic real estate investments by life insurance companies, the total number of land ownership transfers rose by 6.50% compared to the previous year. From early 2022 onwards, as the real estate industry gradually turned from optimism to prudence about the outlook of the housing market, the average number of land ownership transfers from January to March was slightly lower than that of the same period in 2021, with the annual growth rate dropping to 3.42% (Chart 2.39).

Chart 2.38 Number and growth of building transfers



Source: *Monthly Bulletin of Interior Statistics*, MOI.

Chart 2.39 Land transfers for transaction and annual growth rate



Note: Figures are the monthly average of each year. Data of 2022 are the monthly average for the period of January to March.

Source: *Monthly Bulletin of Interior Statistics*, MOI.

Real estate prices reached a new record high

The national housing price index released by the Ministry of the Interior (MOI) continued to rise gradually from early 2021 onwards and reached a record high of 117.50 in Q4. The Sinyi (existing) and Cathay (newly built) housing price indexes also trended upwards to hit historical highs in 2022 Q1.

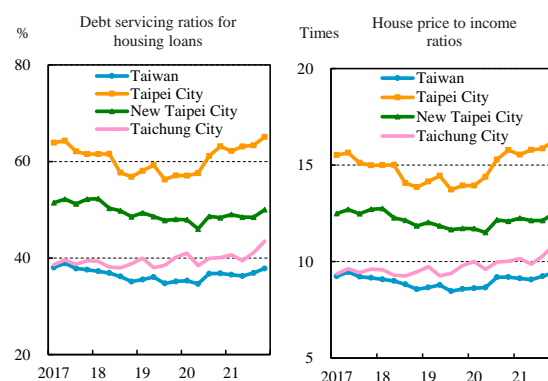
Mortgage burden increased mildly

The debt servicing ratio for housing loans rose mildly quarter by quarter in 2021 and reached 37.83% in Q4 with an increase of 1.02 pps from the previous year. Among them, Taipei City showed the heaviest mortgage burden with its ratio registering 65.09% (Chart 2.40, left panel). Taiwan's house price to income ratio also rose to 9.46 times in 2021 Q4 (Chart 2.40, right panel), increasing 0.26 times year on year.

The total floor space of construction licenses issued and building commencement stayed at high levels, while pressure from the overhang of unsold newly built residential houses remained

With an abundance of new residential housing projects open for pre-sale, the total floor space of construction licenses issued increased by 4.59% year on year in 2021, and marginally increased by 0.69% in 2022 Q1 (Chart 2.41, left panel). Nonetheless, the total floor space of construction commencement decreased by 5.87% in 2021 mainly because of a higher base period as mass residential and commercial buildings broke ground in 2020, but then increased

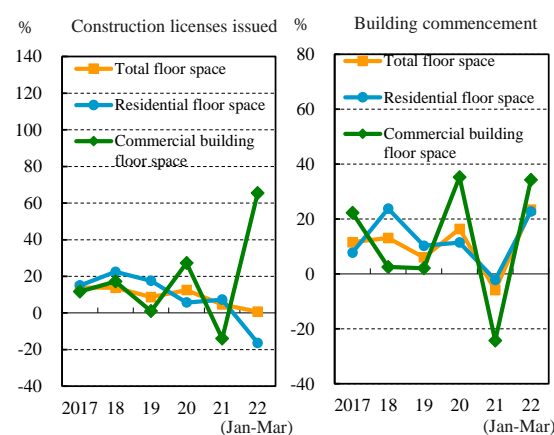
Chart 2.40 Debt servicing ratios for housing loans and house price to income ratios



Notes: 1. Debt servicing ratio for housing loans = median monthly housing loan payment/median monthly household disposable income.
2. House price to income ratio = median house price/median annual household disposable income.

Source: Statistic on Housing Affordability, MOI.

Chart 2.41 Annual growth rates of floor space of construction licenses issued and construction commencement



Note: Commercial building includes buildings for commerce, industry, storage, business and service.

Source: Monthly Bulletin of Interior Statistics, MOI.

by 23.39% year on year in 2022 Q1 (Chart 2.41, right panel). Additionally, the total floor space of usage licenses issued slightly decreased by 0.79% year on year in 2021, but turned to increase by 1.95% in 2022 Q1.

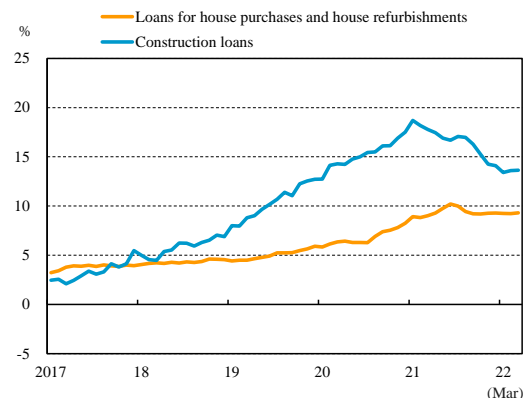
According to statistics from the Ministry of the Interior (MOI), the number of unsold newly built residential houses remained at a high level of 70.1 thousand units in 2021 Q2. Meanwhile, the annual number of construction projects commenced for new residential buildings has been more than 100 thousand units from 2018 onwards. Although the number of unsold newly built residential houses mildly reduced in 2020, the pressure to sell such houses remained given their enormous supply and high prices.

Real estate loans grew at a slower pace and mortgage interest rates rose slightly

With the Bank's four amendments to its targeted macroprudential measures regarding real estate loans that lowered the LTV ratio cap

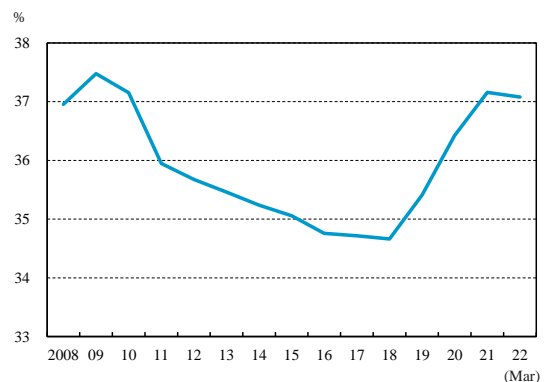
of the regulated loan types, the outstanding construction loans granted by banks³⁰ grew slowly from February 2021 onwards and the annual growth rate declined to 13.64% at the end of March 2022. From July 2021 onwards, the annual growth rate of outstanding loans for house purchases and refurbishments also trended downward gradually and registered 9.30% at the end of March 2022 (Chart 2.42). The aggregate amount of the aforementioned real estate loans amounted to NT\$11.90 trillion and their share of total loans mildly declined to 37.08% at the end of March 2022 (Chart 2.43). Regarding the interest rate of real estate loans, owing to the increase of first-time home buyers usually eligible for lower interest rates, the average interest rate for new housing loans granted by the dominant five banks trended downward from early

Chart 2.42 Annual growth rates of real estate loans



Source: CBC.

Chart 2.43 Real estate loans to total loans



Notes: 1. Real estate loans refer to the aggregate amount of loans for house purchases, house refurbishments, and construction loans.
2. Figures are end-of-year data, except for figure of 2022, which is end-March data.

Source: CBC.

³⁰ Refers to domestic banks and the local branches of foreign and China's banks.

2021 onwards and dropped to a low level of 1.346% in September but rose gradually to 1.378% in March 2022 as a result of the Bank urging banks to fulfill the risk pricing principle and in line with the Bank's policy rate hiked in March.

Banks' risk management on real estate loans remained satisfactory

Since the Bank's targeted macroprudential measures regarding real estate loans did not affect the loan demand of first-time and second-time (out of a need to change homes) buyers, the average LTV ratio for new housing loans rose quarter by quarter and the annual average registered 72.51% in 2021, slightly higher than the 71.79% in 2020. However, following the Bank's successive reductions of the LTV cap to 40%, the average LTV ratio for the regulated loans newly granted by banks dropped significantly. Unsold housing unit loans registered the lowest level among the loan types, with a ratio of 38.14% in March 2022.

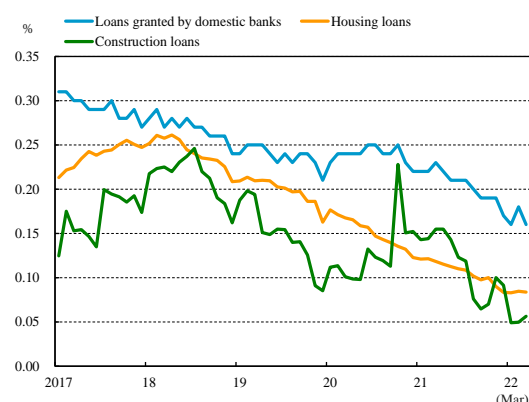
Moreover, NPL ratios of housing loans and construction loans granted by domestic banks dropped to 0.08% and 0.06%, respectively, at the end of March 2022. Both of the ratios were much lower than the 0.16% NPL ratio of total loans (Chart 2.44). In addition, all of the 36 domestic banks passed the stress tests requested by the FSC in 2021, which revealed that the risk management of domestic banks on real estate loans remained satisfactory.

The government actively endeavored to implement the Healthy Real Estate Market Plan to foster a sound real estate market

Since the government initiated the Healthy Real Estate Market Plan in December 2020, the Bank has adjusted targeted macroprudential measures regarding real estate loans four times to prevent excessive inflows of credit to the housing market. The FSC also conducted a targeted examination toward mortgage loans and continued to strengthen the management of real estate lending or guarantee business of banks and bills finance companies, as well as raising risk weights on mortgage loans in February 2022 to enhance their risk management.

In addition, the MOI, the Fair Trade Commission, the Consumer Protection Committee and

Chart 2.44 NPL ratios of housing loans and construction loans



Note: NPLs herein exclude non-accrual loans.

Source: CBC.

local governments have consecutively initiated joint audits targeting pre-sold houses and amended the regulations to refine the property transaction price registration scheme and curb pre-sold housing speculation. The Ministry of Finance also actively amended regulations to prevent short-term speculation and tax evasion, amending the consolidated land and housing income tax and other measures from July 2021 onwards. All of the abovementioned efforts contributed to fostering a sound real estate market. Notwithstanding, with part of the authority and responsibility of real estate market management resting with local governments, the overall policy effectiveness relies on cooperation between central and local governments to carry out and improve relevant measures to achieve the goals of sound development of the real estate market and fulfill housing justice.