II. Potential macro environmental risk factors

2.1 International economic and financial conditions

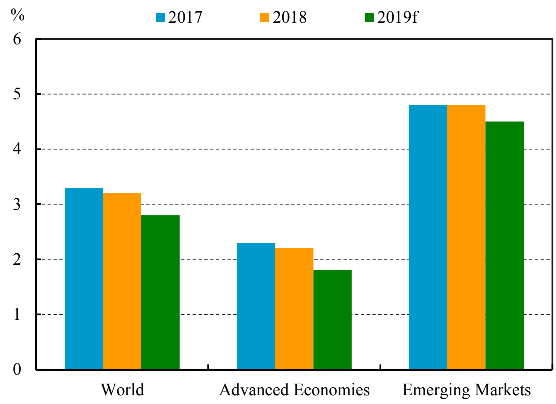
2.1.1 International economic conditions

Global economic growth moderated in 2018 and considerable uncertainty over the economic outlook for 2019 persists

In 2018, the escalation of US-China trade tensions[7] resulted in lackluster global growth in investment and trade. However, thanks to persistent growth in the US, the global economic growth rate merely decreased by 0.1 percentage points from the previous year to 3.2% (Chart 2.1). Among advanced economies, the accelerating growth momentum in the US reflected an improvement in fixed investment and personal consumption stimulated by its fiscal policies. The euro area economy lost more momentum than expected, mainly dragged by declining global exports, higher geopolitical uncertainties, and waning industrial production. Japan's economy shrank as a result of disruptions from natural disasters and sluggish growth in exports. With regard to emerging markets, despite the fact that the economy in Mainland China slowed down as a result of deleveraging policies and trade conflicts with the US, growth momentum in India and Brazil improved. In sum, economic growth rates in emerging economies leveled off.

Looking ahead to 2019, IHS Markit predicts[8] that global GDP growth will continue to moderate to 2.8% amid high trade policy uncertainty from major economies. With the unwinding of fiscal stimulus in the US and political disruptions in the euro area, economic growth in advanced economies is

Chart 2.1 Global economic growth rates



Note: Figures for 2019 are IHS Markit estimates.
Source: IHS Markit (2019/5/15).

[7] From 2018 onwards, in order to reduce its trade deficit, the US imposed punitive tariffs on imports from many countries, especially on those from Mainland China.
[8] See Note 1.

projected to reduce to 1.8%. In the meantime, in view of the ongoing US-China trade tensions and subdued commodity prices, the average growth rate in emerging economies is forecast to decrease to 4.5% (Chart 2.1).

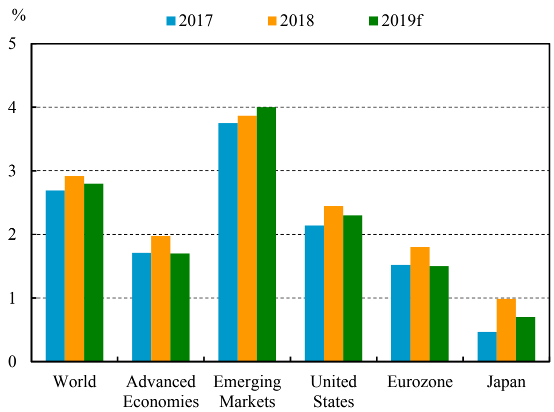
The managing director of the International Monetary Fund (IMF), Christine Lagarde, warned that "four clouds" – including financial risks from trade tensions, Brexit uncertainty, tightening monetary policy in advanced economies, and an accelerated economic slowdown in Mainland China – were undermining the global economy and might trigger an economic storm. These aforementioned factors, together with new challenges and ongoing issues arising from the legacy of the 2008 financial crisis, could pose more uncertain prospects for the global economy going forward.

Global inflation rose moderately

Although international oil prices fluctuated dramatically in 2018, the annual Brent crude oil price averaged $71.19 per barrel, posting an increase of 31.5% compared to 2017. In the meantime, most food prices, including prices of cereals, vegetable oil, dairy and meat, oscillated with a downward trend. In the first half of 2018, metal prices continued on their ascendant paths but turned to a downward trend in the second half owing to the economic slowdown in Mainland China. Nevertheless, the annual average prices were still higher than those of the previous year. As a whole, in spite of a moderate downturn in food prices, the upward trend of oil and metal prices raised global inflation mildly and lifted the CPI inflation rate to 2.9% in 2018. Among them, the headline inflation rate in advanced economies (such as the US, Japan and the euro area) kept rising to 2.0%, and the rate in emerging economies also accelerated to 3.9% (Chart 2.2).

Looking ahead to 2019, IHS Markit predicts that the global headline inflation rate will drop to 2.8% on the back of more stable commodity and oil prices. Among them, the headline inflation rate in advanced economies will decrease to 1.7%, whereas the rate in emerging economies will continue increasing to 4.0% resulting from mounting inflationary pressures in Russia and Brazil.

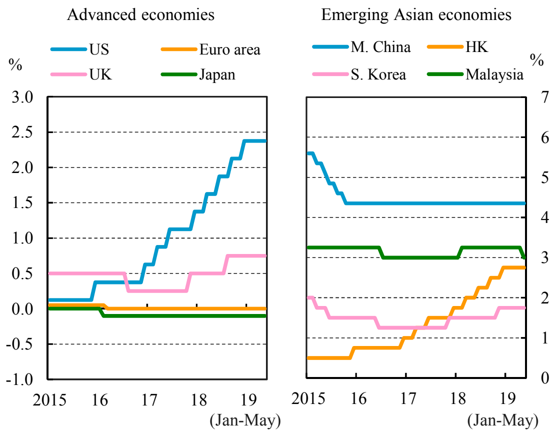
Chart 2.2 Global headline inflation indices



Note: Figures for 2019 are IHS Markit estimates.
Source: IHS Markit (2019/5/15).

Pace of monetary policy normalization in the US slowed, while other economies took divergent paths

Chart 2.3 Policy rates in selected economies



Notes: 1. Advanced economies: figure for the US is based on the target federal funds rate; for the euro area, the main refinancing operations fixed rate; for the UK, official bank rate; for Japan, interest on excess reserves (before 2016/2/16, uncollateralized overnight call rate).
2. Emerging Asia: figure for Mainland China is based on financial institution one-year lending base rate; for Hong Kong, base rate; for South Korea, Bank of Korea base rate; for Malaysia, overnight policy rate.
3. Figures are as of May 15, 2019.

Sources: Central banks and monetary authority websites.

Among advanced economies, with a backdrop of solid economic activity and growth in the US labor market, the Fed hiked its target band for the federal funds rate four times in 2018 by a total of 100 basis points (bps) to 2.25-2.50%. Moreover, the Fed gradually unwound its balance sheet in March, June and September 2018, respectively. However, from 2019 onwards, amid softening global economic growth momentum and lower inflationary pressures, the Fed decided to slow down the pace of monetary policy normalization[9] by leaving the target federal funds rate unchanged in March and planned to end its balance sheet reduction in September (Chart 2.3).

In 2018, since most indicators of inflation in the euro area stayed below their targets, the ECB held interest rates steady and announced it would keep them at their present levels at least through the end of 2019. Moreover, the ECB decided to end the asset purchase program (APP) at the end of 2018 but asserted that it intends to continue reinvesting the principal payments from maturing securities purchased under the APP for an extended period of time past the date when it starts raising interest rates. The ECB also expected to launch a new series of quarterly targeted longer-term refinancing operations (TLTRO) in September 2019, each with a maturity of two years. In addition, the BOJ kept its interest rate target unchanged in 2018 as the inflation rate remained muted in Japan. Meanwhile, the BOJ continued its purchases of government bonds and announced it would undertake further monetary easing if necessary. In contrast, with inflation in the UK on course to surge above the BoE's target of 2%, the BoE hiked its official bank rate by 25 bps to 0.75% in August 2018, its second interest rate rise since the 2008 financial crisis (Chart 2.3).

Emerging Asian economies adopted different monetary policy stances. Among these countries, the PBC left interest rates unchanged but reduced required reserve ratios six times by a total of

[9] According to the dot plot describing FOMC participants' assessments of appropriate monetary policy (released on March 20, 2019), there will be no rate rises in 2019, meaning a more dovish monetary policy stance.

750-850 bps to bolster market liquidity from 2018 onwards. In addition, the PBC continued using its medium-term lending facility (MLF) and pledged supplementary lending (PSL) policy tools with the aim of reducing funding costs and supporting the growth of the real economy. South Korea and Malaysia both raised their policy rates by 25 bps in 2018 so as to mitigate the impact of capital outflows caused by US interest rate rises. The hikes were also in response to their economic turnarounds. Nonetheless, for the purpose of alleviating the impacts from unresolved trade tensions and weakening global demand, Malaysia cut its policy rates by 25 bps in 2019. The Hong Kong Monetary Authority (HKMA) followed the Fed's rate hikes and raised the base rate charged through its overnight discount window four times by 25 bps each to maintain the effective operation of the linked exchange rate system (Chart 2.3).

2.1.2 International financial conditions

Global financial conditions remained accommodative, yet the buildup of financial vulnerabilities continued

In the beginning of 2018, global financial conditions by and large remained accommodative. However, from mid-April, yields on US bonds drifted higher and the US dollar rallied, exerting pressure on portfolio flow reversals, increasing borrowing costs, and weakening the currencies of emerging economies with fragile fiscal balances and high external debt. In Q4, a sharp decline in US stock indices – triggered by the escalation of US-China trade tensions, a rise in US government bond yields and a global economic slowdown – put selling pressure on global stock markets. As a result, global financial market volatility heightened and financial conditions gradually tightened.

In 2019 Q1, with the dovish shift in major economies' monetary policies and the progress in US-China trade negotiations, global financial markets dramatically rebounded. As a result, tightening financial conditions attenuated and turned relatively accommodative afterwards. Notwithstanding, vulnerabilities in major economies' sovereign, corporate and nonbank financial sectors continued to build up. Given the market anxiety about the pace of monetary policy normalization in major economies, sharper-than-expected growth slowdown, protracted trade tensions, and a no-deal Brexit contributing to selling pressures, financial conditions could tighten again and raise financial stability risks.

Global banks' balance sheets continued to strengthen but faced a series of different vulnerabilities

Since the global financial crisis, several financial reforms have been implemented to strengthen the banking system.[10] Consequently, the capital levels of banks in major economies continued to trend upward, but weaknesses in the banking system still existed.

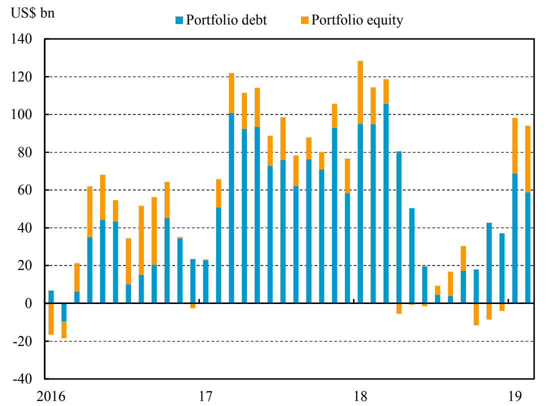
In 2018, the net income of US banks remarkably increased by 44.1% from the previous year.[11] Nonetheless, relaxation of regulatory requirements for medium-sized banks in the US recently may lower the resilience of the banking system. European banks' profits remained broadly stable, but their performances were rather heterogeneous.[12] Under the prolonged low interest rate environment, Japanese banks' profitability declined continually, which may lower banks' capital levels and risk bearing capacity.[13]

Furthermore, the debt-service ratios of the private nonfinancial sector were already higher than their long-term averages in a number of economies. Owing to an increase of credit to the private nonfinancial sector, a rise in interest rates or a fall in borrowers' incomes could strain the debt-service capacity of heavily indebted borrowers, leading to a further rise in nonperforming loans.

Some emerging economies continued to face the risks of capital flow reversals

In 2018, emerging economies faced sustained pressure of capital flow reversals after experiencing massive capital inflows in 2017, reflecting tightening financial conditions. Among them, with rising US long-term yields and a stronger dollar in April, emerging economies with weaker fiscal balances or huge external debts faced the pressure from sharp capital outflows and currency depreciation. In June, escalating trade tensions put increasing portfolio outflow pressures on export-oriented economies and Asian emerging economies. In August, mounted political risks and policy uncertainty intensified selling pressures on

Chart 2.4 Portfolio flows of emerging economies



Note: The amount of portfolio flows are 3-month rolling sums. Figures greater than 0 mean capital inflows, otherwise they mean capital outflows.
Source: IMF (2019), *Global Financial Stability Report*, April.

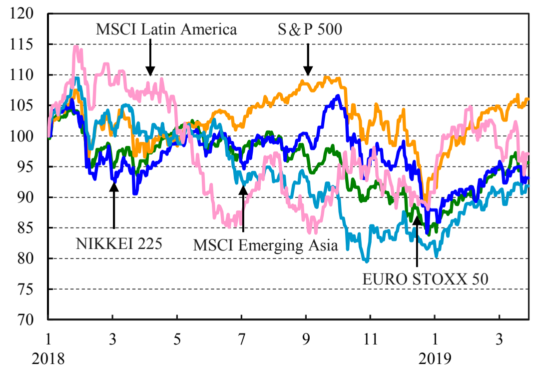
[10] For example, most countries have implemented the Basel III reforms developed by the Basel Committee on Banking Supervision and the G-SIBs regulatory measures established by the Financial Stability Board.
[11] FDIC (2019), *FDIC Quarterly Banking Profile*, February.
[12] ECB (2018), *Financial Stability Review*, November.
[13] BOJ (2018), *Financial System Report*, October.

stock markets and caused continuous capital outflows for a few major emerging economies. Since 2019, with rebounds in global financial markets, capital turned to flow into emerging economies again, which helped gradually attenuate the tightening in financial conditions (Chart 2.4).

Global financial market volatility elevated

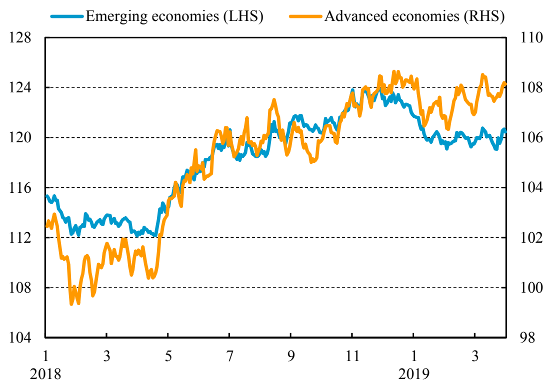
In February 2018, because of market anxiety about the Fed hiking interest rates at a faster pace, US stock markets tumbled and induced a drop in international stock markets, though the markets stabilized gradually afterwards. Since April, rising US interest rates and a strong US dollar have triggered portfolio outflows in emerging economies, leading to a sharp fall in the stock indices of some emerging economies. From October onwards, against a backdrop of an escalation of US-China trade tensions and several other unfavorable conditions, global stock market volatility fluctuated dramatically. In 2019 Q1, with the dovish shift in the Fed's monetary policy and renewed optimism about trade negotiations between the US and Mainland China, global stock markets gradually stabilized (Chart 2.5). In early May, global stock markets plunged as a result of rising trade tensions.

Chart 2.5 Performance of key international equity indices



Notes: 1. January 1, 2018 = 100.
2. The Euro STOXX 50 refers to a stock index consisting of the largest 50 stocks in the 11 major economies of the euro area.
Source: Bloomberg.

Chart 2.6 The US dollar indices of advanced and emerging economies

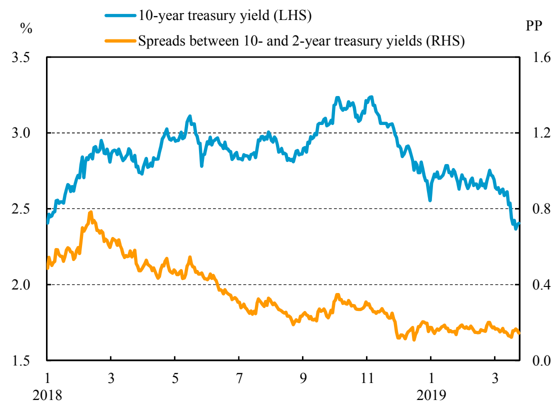


Note: The US dollar indices of advanced and emerging economies were developed by the Fed, and are weighted exchange rates of 7 and 19 trading partners, respectively. Base period is January 2006 (=100).
Source: Fed.

In early 2018, the US dollar was weaker; however, from April onwards, owing to the robust economic growth in the US and market expectations for the Fed to hike interest rates at a faster pace, the US dollar index reversed to trend upwards. Against this backdrop, exchange rates in some emerging economies depreciated. In 2019 Q1, the movements of exchange rates in advanced and emerging economies diverged. Among them, the euro and Japanese yen depreciated against the US dollar, propelling the US dollar index of advanced economies to fluctuate upwards. In contrast, the US dollar index of emerging economies moved to a downward trend, mainly because the renminbi rebounded and most emerging economies' exchange rates also appreciated against the US dollar (Chart 2.6).

With the Fed explicitly continuing its rate-hike plan in early 2018, US 10-year government bond yields gradually trended upwards to hit their highest level of 3.23% in November. From mid-November onwards, as a result of a global economic slowdown, protracted US-China trade tensions and market expectations of a slower Fed rate-hike path, US 10-year government bond yields sharply trended downwards. On the other hand, short-term government bond yields remained at a high level derived from the effect of interest rate hikes over the previous few months. As a result, the spread between longer-dated and shorter-dated yields has narrowed and the yield curve has flattened (Chart 2.7). If the yield curve gets flatter in the future, or even becomes negatively sloped for a long time, recession and financial stability risks in the US may elevate, which warrants close attention.

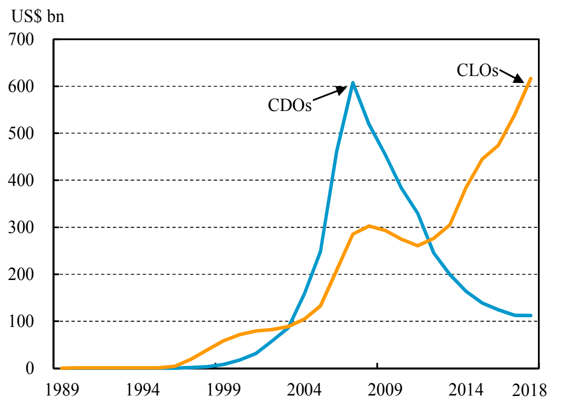
Chart 2.7 US government bond yield and spread



Note: Yield curve slope is usually gauged by the spreads between 10- and 2-year government bond yields. The smaller the spreads, the flatter the yield curves. (PP=percentage point)
Source: Bloomberg.

Furthermore, driven by surging investor demand for high-yield products in recent years, the outstanding amounts of collateralized loan obligations (CLOs), mainly backed by leveraged loans[14] with low credit ratings, have soared (Chart 2.8). The trend is similar to that of collateralized debt obligations (CDOs) backed by mortgages before the 2008 global financial crisis and has raised market concerns.[15] Recently, owing to loosened lending conditions for leveraged loans, the risk of CLOs has held at a relatively high level. If credit ratings of the underlying borrowers are downgraded, the CLO prices will decline at a faster pace, which may lead to adverse impacts being felt over financial markets.

Chart 2.8 Outstanding amounts of CLOs and CDOs



Note: "CLO" refers to Collatoralized Loan Obligation. "CDO" refers to structured finance Collateralized Debt Obligation.
Source: Sifma.

[14] There is no universally accepted definition of leveraged loans. S&P defines leveraged loans as follows: (1) loan rating is equal to or lower than BB+; (2) loan rating is BBB- or no rating, but interest rate on loan is above LIBOR plus 125 basis points.

[15] BIS (2018), "International Banking and Financial Market Developments," *BIS Quarterly Review*, September; Onaran, Yalman (2018), "Can We Survive the Next Financial Crisis?" *Bloomberg*, September; Moody's (2018), "Convergence of Bonds and Loans Sets Stage for Worse Recoveries in the Next Downturn," August.

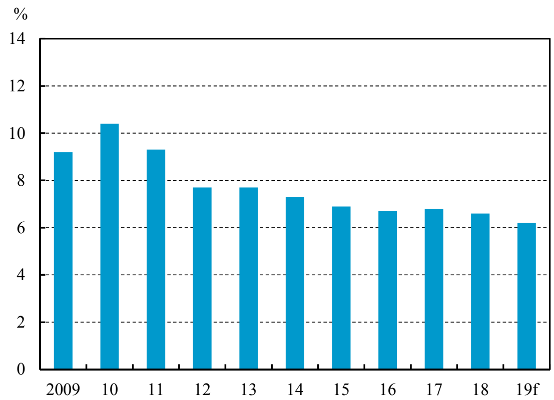
2.1.3 Mainland China's economic and financial conditions

Economic growth continued to slow down and reached a new 28-year low

In 2018, owing to the Mainland Chinese government's deleveraging measures, private consumption and investment momentum weakened. Meanwhile, affected by the US-China tariff hikes, the growth of imports and exports declined sharply in 2018 Q4. As a result, the economic growth rate dropped to 6.6% in 2018, the lowest level in 28 years, from 6.8% a year earlier (Chart 2.9).

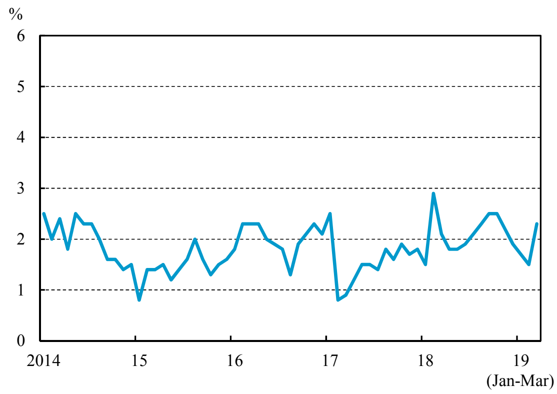
Looking forward to 2019, the slowdown in global demand and prolonged US-China trade dispute put further downward pressures on economic growth in Mainland China. IHS Markit projects that the economic growth rate will fall to 6.2% in 2019 (Chart 2.9).

Chart 2.9 Economic growth rate of Mainland China



Note: Figure for 2019 is an IHS Markit estimate.
Sources: National Bureau of Statistics of China and IHS Markit (2019/5/15).

Chart 2.10 CPI Inflation rate of Mainland China



Source: National Bureau of Statistics of China.

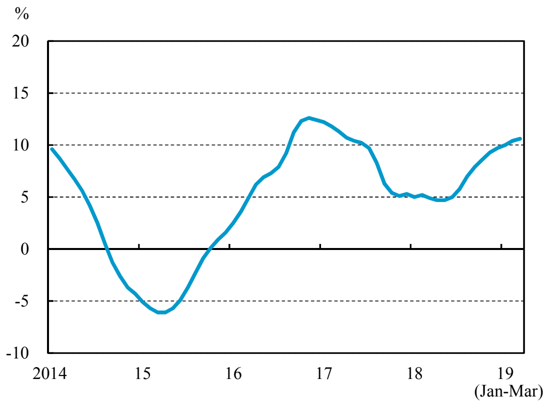
Prices rose mildly, while the growth of housing prices rebounded

Affected by an increase in food, gasoline and diesel prices, the CPI inflation rate of Mainland China was 2.1% throughout 2018, an increase of 0.5 percentage points compared to a year earlier. In March 2019, the CPI inflation rate rose to 2.3%, reflecting mild inflation outlook. IHS Markit projects the annual CPI inflation rate of 2019 to climb slightly to 2.3% (Chart 2.10).

In the first half of 2018, the average growth rate of housing prices in 70 medium-large cities held steady at 5% year on year. In the second half of 2018, thanks to the reduction in inventory of unsold residential properties, as well as a shift toward easier monetary policy by the PBC aiming to keep market liquidity at an adequate level, the annual growth rate of housing prices significantly rebounded to 9.7% in December. In March 2019, the annual growth rate rose further to 10.6% (Chart 2.11).

The PBC continued to implement sound monetary policies

Chart 2.11 Average annual growth rate of building sales prices in 70 medium-large cities of Mainland China



Source: Thomson Reuters Datastream.

From 2018 onwards, in an effort to address the downward pressure on the economy and avoid financial risks, the PBC continued to implement sound monetary policies and left policy rates unchanged. However, the PBC adopted targeted or across-the-board cuts in reserve requirement ratios a total of six-times, coupled with the launch of monetary policy tools such as the MLF and targeted MLF, to help the financing needs of privately owned, small and micro-enterprises by offering stable liquidity in the medium and long term.

Mainland China's government adopted an expansionary fiscal policy

In the second half of 2018, Mainland China's government actively implemented an expansionary fiscal policy. In 2019, the government has further raised its budget deficit target to RMB2.76 trillion, or 2.8% of GDP, increasing by 0.2 percentage points year on year. The expansionary fiscal policy primarily includes: (1) proposing cuts in taxes and fees worth RMB2 trillion; and (2) raising local government's budget for the issuance of special bonds[16] to RMB2.15 trillion, and expanding the scope of their application.

SSE Composite Index and RMB FX rate both fell sharply before dramatically rebounding

From 2018 Q2 onwards, affected by the escalation of the US-China trade dispute and a sharp depreciation of the renminbi against the US dollar, the SSE Composite Index fluctuated with a downward trend. At the end of the year, the Index stood at 2,494, markedly plunging by 24.59% year on year, hitting the lowest level since 2015. In 2019 Q1, stimulated by the progress of US-China trade negotiations and the weighting increase of Mainland China A-shares in the MSCI indexes,[17] the SSE Composite Index rebounded sharply and reached 3,091 at the end of March (Chart 2.12). However, as a result of the escalating US-China trade

[16] Special bonds refer to bonds issued by local governments to fund the construction of specific projects, but they are not included in their general budgets and can be repaid by future income of the construction.

[17] In March 2019, MSCI announced that it would increase the weight of Mainland China A-shares from 5% to 20% in three phases.

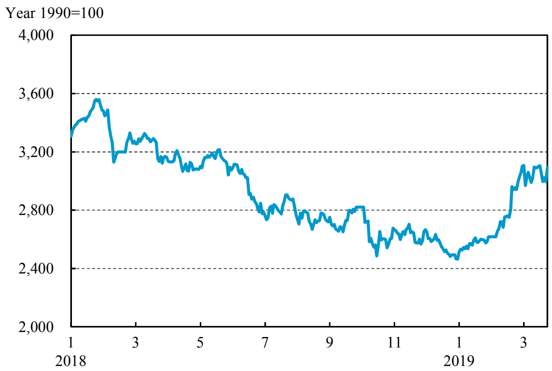
dispute in early May, the SSE Composite Index significantly fell again.

Regarding the FX market, the renminbi exchange rate against the US dollar depreciated substantially from 2018 Q2 onwards and reached 6.9734 at the end of October. Afterwards, owing to market expectations for a slower pace of the Fed's rate hikes, the renminbi turned to appreciate against the US dollar and stood at 6.6858 at the end of December; however, it still depreciated by 5.15% year on year. In the beginning of 2019, the renminbi saw a continual appreciation against the US dollar and the exchange rate registered 6.7202 at the end of March (Chart 2.13). It turned to depreciate in early May.

The increment in aggregate financing to the real economy moderated slightly, but NPLs of banks elevated

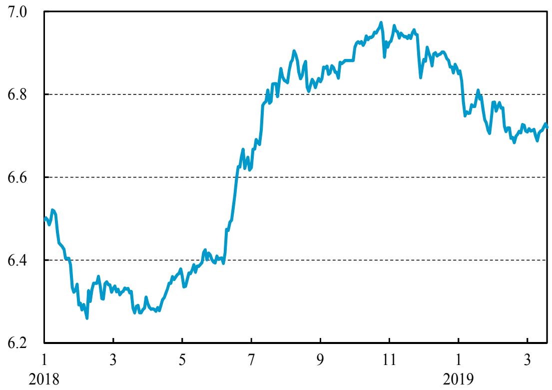
In 2018, against a backdrop of the implementation of sound monetary policies by the PBC, the annual growth rate of broad money supply M2 leveled off at 8.1%. Meanwhile, the increment in aggregate financing to the real economy slightly decreased to RMB19.3 trillion compared to a year earlier. Among them, the increment in off-balance sheet credit significantly declined, while bank loans increased owing to more stringent supervision on shadow banking (Chart 2.14). The annual growth rate of the outstanding amount continued its upward trajectory, rising by 9.8% to RMB200.8 trillion from a year earlier.

Chart 2.12 Shanghai Stock Exchange Composite index



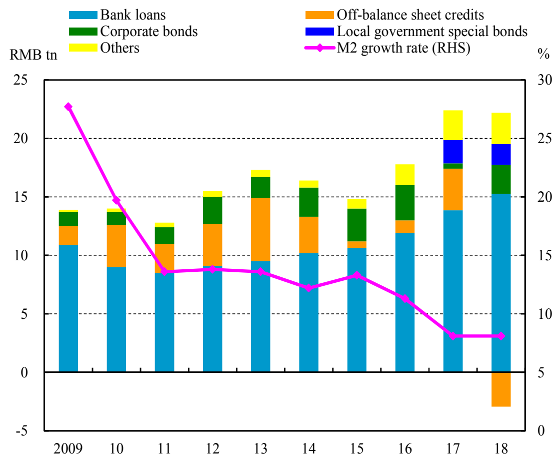
Source: Bloomberg.

Chart 2.13 RMB/USD exchange rate



Source: CBC.

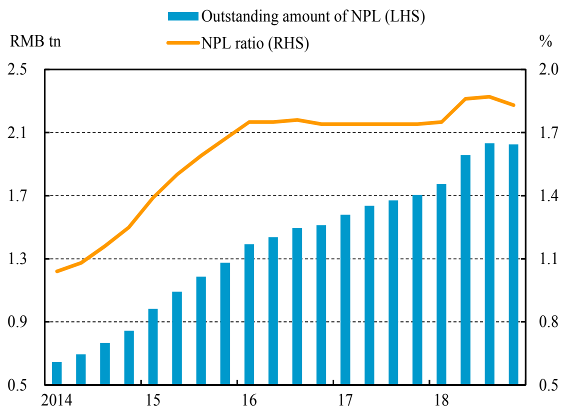
Chart 2.14 Aggregate financing to the real economy and annual growth rate of M2 in Mainland China



Source: PBC.

At the end of 2018, the NPLs of commercial banks in Mainland China stood at RMB2.03 trillion, an annual increase of 18.74%, while the NPL ratio significantly rose to 1.83% (Chart 2.15). Additionally, the outstanding amount of special-mention loans also rose to RMB3.46 trillion. In sum, the outstanding amount of classified assets expanded to RMB5.49 trillion.

Chart 2.15 NPL of Mainland China's commercial banks

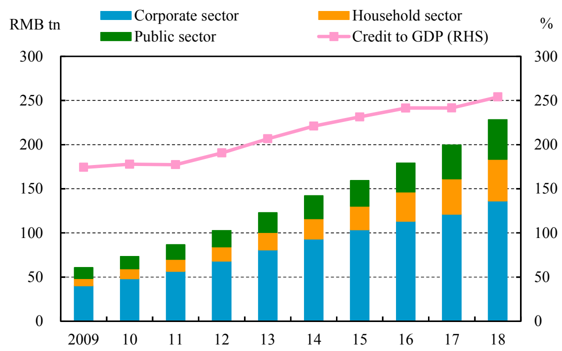


Source: China Banking and Insurance Regulatory Commission.

Mainland China's potential risks mounted with its continual debt build-up

According to the statistics of the BIS, the outstanding debt for nonfinancial sectors[18] in Mainland China has constantly increased in the last 10 years, reaching a record high of RMB223.9 trillion[19] (252.7% of GDP) at the end of September 2018 (Chart 2.16). Meanwhile, the deleveraging schedule has been delayed and the potential risks have ascended as the Chinese government has adopted a series of measures to promote steady economic growth. The analyses on each sector's debt are shown as follows.

Chart 2.16 Outstanding amount of nonfinancial debts and credit-to-GDP ratio in Mainland China



Source: BIS.

The deleveraging progress for enterprises was slower than expected, increasing the risk of corporate debt defaults

According to the statistics of the Ministry of Finance (MOF) of Mainland China, the outstanding debt for state-owned enterprises (SOEs), which is the main focus of deleveraging efforts, substantially grew to RMB115.65 trillion (128.45% of GDP) at the end of 2018. Mounting debt in SOEs could considerably affect the deleveraging schedule, inducing a surge in corporate debt defaults.[20]

[18] The nonfinancial sectors include corporate, household and public sectors.
[19] Among nonfinancial sector debt, the outstanding amount of corporate sector debt registered the highest at RMB135.4 trillion (152.9% of GDP), followed by RMB45.7 trillion (51.5% of GDP) for the household sector and RMB42.8 trillion (48.3% of GDP) for the public sector.
[20] The OECD warned that corporate debt repayments in Mainland China will peak in the next three years, which warrants close attention (OECD (2019), *OECD Interim Economic Outlook*, March).

With rapid growth of household mortgages, the housing bubble risk rose

According to the statistics of the PBC, personal house-purchasing loans kept hitting record highs and rose by 17.58% year on year to RBM25.75 trillion (28.60% of GDP) at the end of 2018. Moreover, household assets were highly concentrated in real estate and housing prices continued to rise, reflecting an elevated asset bubble risk in the real estate market. Given that the risk potentially transmits to the financial system, it may pose a threat to financial stability.

The potential risk of local government debt default increased

According to the statistics of the MOF of Mainland China, the outstanding amount of local government debt reached a high point of RBM18.39 trillion (20.42% of GDP) at the end of 2018, posting an increase of 11.63% year on year. Furthermore, with a serious maturity mismatch of debt, the potential default risk of local government debt elevated.

2.2 Domestic macro environment

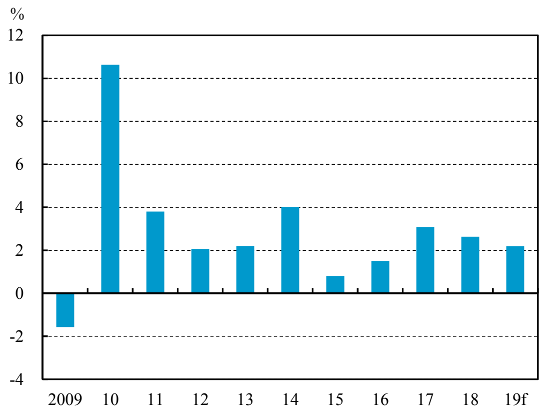
2.2.1 Domestic economic and fiscal conditions

Although the growth of exports saw a downtrend in 2018, the domestic economy grew moderately and inflation remained stable, thanks to modest momentum in private consumption and investment. Short-term external debt servicing ability remained strong on the back of a persistent surplus in the balance of payments and ample FX reserves. Although the scale of external debt slightly increased, overall external debt servicing capacity stayed robust. While the government's fiscal deficits rebounded and outstanding government public debt marginally leveled up, total government debt stayed within a manageable level.

Domestic economy grew soundly

Although the growth of Taiwan's exports experienced a slowdown in 2018, the domestic economy grew steadily, underpinned by the continual improvement of employment and modest momentum in both private consumption and investment. As a result, the annual economic growth rate in Taiwan reached 2.63%, lower than the 3.08% of the previous year (Chart 2.17).

Chart 2.17 Economic growth rate in Taiwan



Note: Figure for 2019 is forecast by CBC.
Sources: DGBAS and CBC.