HONG KONG MONETARY AUTHORITY
香港金融管理局

HALF-YEARLY MONETARY AND FINANCIAL STABILITY REPORT

March 2025

This Report reviews statistical information between the end of August 2024 and the end of February 2025.

Half-Yearly Monetary and Financial Stability Report
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1. Summary and overview

While global economic growth has been relatively steady, the world is bracing for more policy and economic outlook uncertainty as the Trump presidency begins in the US. Along with rising trade tensions, the uncertainty surrounding the US interest rate outlook has edged up, as the escalation of tit-for-tat tariff hikes has increased both the upside risk to US inflation and the downside risk to US economic growth. For emerging Asia, these uncertainties are posing significant headwinds to the regional economies and to fund flows.

Hong Kong's exchange rate and interbank markets continued to trade in a smooth and orderly manner. Total deposits increased during the review period, while bank credit declined, reflecting subdued credit demand driven in part by the high interest rate environment. Meanwhile, the residential property market was subdued in the third quarter of 2024 before showing signs of stabilisation after the initiation of the interest rate cut cycle in September. Looking ahead, uncertainties surrounding US trade policies and the future path of US interest rates may pose challenges to the Hong Kong banking sector on various fronts. Banks should remain vigilant and carefully assess the potential impacts of these risk factors on the asset quality of their loan portfolios.

The external environment

US trade policy uncertainty has risen notably under the new US administration. In view of the tariff hikes, the upside risk to the US inflation outlook has increased. Meanwhile, the escalation of tit-for-tat tariff hikes has increased the downside risk to US economic growth. These developments have increased the uncertainty surrounding the pace of the US Federal Reserve (Fed)'s interest rate cuts.

Meanwhile, the artificial intelligence (A.I.) development race has intensified among the major economies, and there are concerns that the increasing adoption of A.I. by investment funds may add to financial market volatilities, as they may be more prone to collective asset sales during times of market stress. Box 1 illustrates our in-house application of generative A.I. (GenA.I.) to examine this issue.

In emerging Asia, increased uncertainty surrounding US trade policy and the pace of the US Fed's interest rate cuts are weighing on the economic outlook for the region. Following the US presidential election in November 2024, Asian currencies have faced downward pressures, prompting several regional central banks to intervene to prevent excessive depreciation. The increased risk of trade conflicts has caused downside risks to the regional economic outlook to edge up, given the region's increased export dependence, reduced fiscal buffers, and constrained scope for regional central banks to cut rates amid concerns over fund flow volatility.

In Mainland China, economic growth picked up in the fourth quarter of 2024, riding on a comprehensive package of policies introduced since September 2024. Front-loaded orders arising from tariff concerns also supported the merchandise exports of Mainland China in the final quarter while the housing market showed some signs of stabilisation (Box 2 introduces a novel index developed to track the housing market sentiment, leveraging the HKMA's in-house GenA.I.). For 2024 as a whole, the economy grew by 5%, in line with the official target.

Moving into 2025, the official economic growth target has been set at around 5% for the third consecutive year. However, the economic outlook continues to face multiple challenges and uncertainties which include rising policy uncertainty and trade protectionism (e.g. tariff hikes from the US). In response, the authorities have vowed to adopt a more proactive fiscal policy and a moderately loose monetary policy, strengthen unconventional countercyclical adjustments, support private enterprises and expand domestic demand (especially consumption).

The domestic economy

In Hong Kong, economic growth stayed moderate in the second half of 2024, with real gross domestic product (GDP) increasing by 1.9% and 2.4% year-on-year in the third and fourth quarters respectively. Exports of services improved sequentially as cross-border financial activities improved and inbound tourism continued to recover. Goods exports slowed down compared to the first half of 2024, partly due to a softening economic environment in some major markets. Domestically, investment spending improved during the period despite a fall in the fourth quarter alongside a contraction in building and construction activities. Meanwhile, the changes in residents' consumption patterns persisted as a headwind to private consumption, although the fourth quarter saw initial signs of stabilisation. For 2024 as a whole, real GDP increased by 2.5%, following a growth of 3.2% in 2023.

Looking ahead, the Hong Kong economy is expected to grow further at a moderate pace in 2025. While merchandise exports may be impacted by the intensifying trade conflicts, services exports are expected to benefit from the ongoing recovery of inbound tourism amid the supportive measures from the Mainland authorities and the Government's strenuous efforts to revitalise Hong Kong's tourism sector. Box 3 analyses the potential economic benefits of digitalising trade documents in Hong Kong, which could further consolidate the city's status as an international trading hub by enhancing the efficiency of its trade ecosystem. In addition, Mainland's proactive policies to boost its economy should bolster Hong Kong's business sentiment, thereby strengthening private investment. That said, the shift in residents' consumption patterns may continue to restrain the recovery of private consumption. Against this backdrop, the Government forecasts real GDP growth for the whole of 2025 in the range of 2%–3%, with the growth outlook being subject to a number of risks and uncertainties, including those related to global growth prospects, the US trade policy and the pace of the US Fed's interest rate cuts.

The labour market continued to be resilient, with the unemployment rate remaining low at 3.2% in February 2025. Looking ahead, sustained economic growth is expected to underpin labour demand, although some sectors could be exposed to risks associated with intensifying trade tensions.

Underlying inflation has remained mild over the past few months despite some upward pressure from rising housing rentals. Looking ahead, overall inflation is expected to stay modest as external price pressures are likely to be contained, despite uncertainties surrounding global commodity market developments, mitigating the upward pressure on domestic costs amid continued economic growth.

Monetary conditions and capital flows

The Hong Kong dollar (HKD) strengthened in late September 2024, mainly supported by a surge in local stock market activities following the announcement of a series of economic stimulus measures in Mainland China. The HKD softened in early 2025 but strengthened thereafter amid strong performance of the local stock market. As the Convertibility Undertakings (CUs) have not been triggered since May 2023, the Aggregate Balance of the banking system remained little changed at HK$44.7 billion at the end of February 2025, and the day-to-day and interbank operations and settlement activities among banks have continued to operate in a smooth and orderly manner.

Hong Kong's interbank market also continued to trade in a smooth and orderly manner. Short-term Hong Kong Interbank Offered Rates (HIBORs) tightened temporarily in late September 2024 due to buoyant equity market and quarter-end funding demand, firmed up again amid thinner liquidity ahead of the year-end, and then softened in early 2025 as seasonal liquidity tightness eased. On the retail front, following the US policy rate cuts, many banks reduced their Best Lending Rates three times or by a total of 62.5 basis points from September to December 2024. At the end of the review period, the Best Lending Rates in the market ranged from 5.25%–5.75%. Meanwhile, the average lending rate for new mortgages decreased from 4.14% in July 2024 to 3.51% in January 2025. Banks will decide when and by how much to adjust their lending and savings rates, taking into account factors such as funding supply and demand in the interbank market, the level of interbank rates and their own funding cost structures.

Following the expansion in the first half of 2024, Hong Kong's offshore renminbi (CNH) liquidity pool declined modestly during the review period, with the total outstanding amount of renminbi customer deposits and certificates of deposit decreasing to RMB1,131.8 billion at the end of January 2025. Both the amounts of outstanding renminbi loans and renminbi trade settlement continued to grow steadily. The average daily turnover of the renminbi Real Time Gross Settlement (RTGS) system stayed high at RMB3,097.5 billion in 2024.

Looking ahead, the continuing development of Hong Kong's CNH ecosystem will further reinforce Hong Kong's role as the leading CNH business hub. On liquidity, the HKMA's new RMB Trade Financing Liquidity Facility, which was launched in February 2025, will further enhance the liquidity of Hong Kong's CNH market by providing banks with a stable source of relatively lower-cost RMB funds to support trade finance services. On products, the continuous efforts to upgrade and expand the family of Connect schemes between the Mainland and Hong Kong, which include Swap Connect, Stock Connect, Bond Connect, and Cross-boundary Wealth Management Connect, will widen the spectrum of RMB products and tools available for asset allocation and risk management, facilitating greater two-way traffic between the two markets. As for financial infrastructure, CMU OmniClear and Hong Kong Exchanges and Clearing Limited (HKEX) signed a Memorandum of Understanding (MOU) in March 2025 to deepen their collaboration in enhancing the post-trade securities infrastructure of Hong Kong's capital markets, and will explore and pursue cooperation in areas such as expanding the use of Mainland bonds as collateral. The HKMA and the People's Bank of China (PBoC) are working closely together to implement the linkage of faster payment systems in the Mainland and Hong Kong (i.e. the Mainland's Internet Banking Payment System (IBPS) and Hong Kong's Faster Payment System (FPS)), supporting broader economic cooperation and exchange between the two places. With these developments, Hong Kong will continue to play a unique role in supporting Mainland's capital account opening, as well as the Guangdong-Hong Kong-Macao Greater Bay Area and the Belt and Road initiatives.

Asset markets

The Hong Kong equity market rose notably between September and early October 2024, driven by the Mainland's supportive policy measures and the first interest rate cut by the US Fed in more than four years. Although the local equity market softened subsequently, it performed strongly from the middle of January 2025, boosted by the positive market sentiment following China's recent advancements in A.I.. From the end of August 2024 to the end of February 2025, the Hang Seng Index increased by 27.5%, outperforming the MSCI World Index, which rose moderately by 3.9% during the same period.

Despite an interest rate cut by the US Fed in September 2024, the yield of the US 10-year Treasury Notes reversed its downward trend and rose from the middle of September on concerns over rising inflation risks in the US under the new US administration. The yield declined notably in February 2025 as soft economic data sparked concerns over the US economic outlook. The yield of the 10-year HKD Hong Kong Special Administrative Region Government Bonds mirrored the movements of its US counterpart. The average yield of HKD corporate bonds also followed the movements of the yield of the US Treasury Notes of similar maturity, maintaining a narrow yield spread since 2024. Despite volatility in interest rates, new issuances of CNH debt securities in Hong Kong and HKD debt securities continued to grow steadily in 2024.

Looking ahead, developments in the external environment will continue to influence the performance of the local equity market. Changes in fiscal and trade policies under the new US administration may lead to higher uncertainties over inflation risks and thus the future trajectory of interest rates in the US. This could have significant implications for capital flows in the global financial market. Additionally, the potential resurgence of trade tensions and growing geoeconomic fragmentation could pose downside risks to the global financial market, including Hong Kong's equity market. As for the debt market, the interest rate paths of major advanced economies will continue to influence the issuance of HKD debt securities in the near term. Meanwhile, CNH debt securities issuance in Hong Kong could benefit from a moderately loose monetary policy in Mainland China in 2025.

During the review period, policy initiatives were introduced to foster local debt market developments. These include The Hong Kong Mortgage Corporation Limited's second issuance of infrastructure loan-backed securities, the first CNH bond issuance in Hong Kong by the People's Government of Guangdong Province, and the Digital Bond Grant Scheme, launched by the HKMA, which aims to foster the growth of the digital securities market and promote wider adoption of tokenisation technology in capital market transactions. Furthermore, the official launch of direct linkage between the Central Moneymarkets Unit of Hong Kong and the Central Securities Depository System of Macao in January 2025 will provide a cross-border investment and financing channel, enabling investors from both markets to participate in each other's bond market with greater ease and efficiency.

After a subdued third quarter in 2024, the residential property market regained its footing in the fourth quarter, primarily driven by the initiation of the interest rate cut cycle in September. Notably, average monthly housing transactions increased to 5,033 units in the fourth quarter from 3,408 units in the preceding quarter, while secondary-market housing prices also stabilised and increased mildly in the fourth quarter. For the full year of 2024, the market recorded a significant 23.5% year-on-year increase in total housing transactions to 53,099 units. However, residential property prices declined by 7.1% amid continued adoption of competitive pricing strategies by developers in launching new projects. As the market entered 2025, transaction volumes edged down in the first two months of the year, reflecting softened market sentiment amid concerns over a slower pace of the US Fed's interest rate cuts and the holiday effect. In tandem, housing prices also eased down slightly by 1.6% during the same period. Nevertheless, the market turned active in early March following the adjustments to stamp duties for properties at lower values as announced in the 2025–26 Budget.

Taking into account the latest market developments and the stability of the banking system, the HKMA announced further adjustments to the countercyclical macroprudential measures for property mortgage loans on 16 October 2024 with immediate effect. Specifically, the maximum loan-to-value (LTV) ratio and the debt-servicing ratio (DSR) limit have been reverted to the pre-2009 levels before the countercyclical macroprudential measures were first introduced, and standardised at 70% and 50%, respectively, for all properties.

To support stage payment homebuyers who purchased uncompleted residential properties during 2021 to 2023 to complete their transactions, while continuing to ensure the proper risk management of banks' property mortgage lending business, the HKMA also introduced a one-off special scheme on 4 December 2024, under which banks would be allowed to offer mortgage loans with a maximum LTV ratio of 80% and a DSR limit of 60% to eligible homebuyers. Notwithstanding these adjustments, the average LTV ratio and DSR for mortgages remained in check, and the HKMA considered that the Hong Kong banking sector continued to have ample buffers to cope with any challenges arising from a sharp correction in property prices.

The near-term outlook for the residential property market is subject to a host of uncertainties and risks. On one hand, the existing inventories in the primary market, together with increasing uncertainty surrounding the pace of the US Fed's interest rate cuts, may continue to exert downward pressure on housing prices in the near term. On the other hand, the Government's ongoing initiatives to attract businesses and talents should provide some support for housing demand. Over the longer term, the outlook for the residential property market will depend on the supply-demand gap. According to the Government's projections, the private housing supply is expected to remain abundant in the coming years.

The commercial real estate market continued to be sluggish in the second half of 2024, characterised by low transaction volumes and subdued prices and rentals across all segments. The near-term outlook for the market is expected to remain challenging. Specifically, the office segment is likely to continue facing significant headwinds due to the persistently high vacancy rate and the prevalence of remote working. Meanwhile, the retail premises segment may continue to be impacted by shifting consumption patterns among visitors and residents. Nevertheless, the supportive measures introduced by the Mainland authorities to boost Hong Kong's tourism sector and Mainland's economic stimulus measures may provide some relief to the market. Taking into account the high vacancy rates of offices in recent years and the relatively ample supply in the next few years, the Government announced the suspension of commercial site sales in the upcoming fiscal year, as well as the consideration of rezoning some of the commercial sites into residential use and allowing greater flexibility of land use.

Banking sector performance

The pre-tax operating profits of retail banks grew by 10.9% year-on-year in the second half of 2024, which improved the return on assets to 1.05% compared with 0.99% in the same period of 2023. The improvement was mainly attributable to increases in income from investment held for trading and income from foreign exchange and derivatives operations, as well as a decrease in loan impairment charges. These factors helped offset the decline in net interest income alongside a narrowing of the net interest margin of retail banks.

As credit demand remained subdued amid a still relatively high interest rate environment, total loans and advances of all authorized institutions (AIs) edged down by 0.9% in the second half of 2024, driven by decreases in both domestic loans (comprising loans for use in Hong Kong and trade financing) and loans for use outside Hong Kong. Meanwhile, the classified loan ratio of all AIs increased to 1.96% at the end of 2024, hovering around the long-term average of 2%, but the overall asset quality of the banking sector remained manageable.

Overall, the Hong Kong banking sector remained robust and resilient, underpinned by strong capital and liquidity positions. The total capital ratio of locally incorporated AIs stood high at 21.8% at the end of 2024, well above the international minimum requirement of 8%. The average Liquidity Coverage Ratio of category 1 institutions and the average Liquidity Maintenance Ratio of category 2 institutions were 178.4% and 67.0% respectively in the fourth quarter of 2024, well above their statutory minimum requirements.

Box 4 introduces a framework that utilises GenA.I. tools to extract useful insights from banks' earnings call transcripts, in a way that can enhance monitoring tools for assessing systemic risks and emerging vulnerabilities in the banking sector. The framework is shown to be capable of identifying key and emerging risks facing the global banking sector. Our latest assessment suggests that geopolitical risks and credit risks are two important risk factors that have attracted increasing attention in the global banking industry at the current juncture. Therefore, a closer monitoring of these areas may be warranted.

Looking ahead, a number of downside factors, including uncertainties surrounding US trade policies and the future path of US interest rates may pose challenges to the Hong Kong banking sector on various fronts. Banks should remain vigilant and carefully assess the potential impacts of these risk factors on the asset quality of their loan portfolios.

The Half-yearly Report on Monetary and Financial Stability is prepared by the staff of the Research Department of the Hong Kong Monetary Authority

2. Global setting and outlook

The global trade environment is facing heightened policy uncertainty as the new US administration imposes higher tariffs on its major trading partners. These developments have also increased the uncertainty surrounding the US interest rate outlook, as the escalation of tit-for-tat tariff hikes has increased both the upside risk to US inflation and the downside risk to US economic growth.

Emerging Asian economies are confronting mounting pressures stemming from uncertainty around US trade and monetary policies. Given the increased dependence of these economies on exports, their reduced fiscal buffers due to pandemic-related spending, and their limited scope for monetary policy manoeuvres, the economic outlook for the region is facing strong headwinds.

In Mainland China, economic growth picked up in the fourth quarter of 2024, riding on a comprehensive package of policies rolled out from September 2024 onwards. The official economic growth target for 2025 has been set at around 5% for the third consecutive year. However, the economic outlook continues to face multiple challenges and uncertainties, which include rising policy uncertainty and trade protectionism (e.g. tariff hikes from the US). In response, the authorities have vowed to adopt a more proactive fiscal policy and a moderately loose monetary policy, strengthen unconventional countercyclical adjustments, support private enterprises and expand domestic demand (especially consumption).

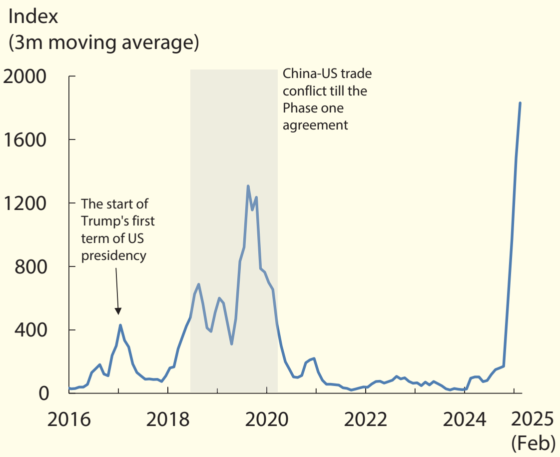
2.1 External environment

The global economy has maintained steady growth. The US economy has grown at a relatively robust pace relative to the other major advanced economies, while the Asia Pacific region has continued to be a key driver of global economic growth.

However, the global growth outlook has become more uncertain with the new US administration. In particular, uncertainty surrounding US trade policy has risen to levels over to those observed during the 2018–2020 China-US trade conflict (Chart 2.1). The tariff hikes[1] have also increased both the upside risk to the US inflation outlook and the downside risk to the US growth outlook.

[1] The new US administration imposed a total of 20% additional tariff on imported goods from Mainland China on February and March 2025. Additionally, a 25% tariff on all imports of steel and aluminum, as well as imported goods from Mexico and Canada. The administration has also threatened to impose new reciprocal tariffs on countries that tax US exports, and a 25% tariff on imports from the Euro area.

Chart 2.1
US trade policy uncertainty index



Source: Economic Policy Uncertainty.

The US Fed maintained its policy rate unchanged at the Federal Open Markets Committee (FOMC) meeting in January and March 2025, following a cumulative rate cut of 100 basis points in 2024. While the latest FOMC dot plot continued to indicate a total rate cuts of 50 basis points in 2025, the latest Fed funds futures indicate that markets now anticipate around two to three 25-basis-point rate cuts in 2025, up from only one projected in February, reflecting increased concerns about economic growth.

Meanwhile, the A.I. development race has intensified among the major economies, and there are concerns that the increasing adoption of A.I. by investment funds may add to financial market volatilities, as they may be more prone to collective asset sales during times of market stress. Box 1 illustrates our in-house application of GenA.I. to examine this issue.

The increased uncertainty surrounding US trade policy and the pace of the US Fed's interest rate cuts are weighing on the economic outlook for emerging Asia. Regional currencies have generally weakened since the US presidential election in November 2024, although some of the losses have been recouped since the beginning of 2025. The South Korean won has been particularly affected, not only by external pressures but also by domestic political unrest. Other regional currencies, such as the Indonesian rupiah and Malaysian ringgit, have also faced downward pressures in recent months. To prevent excessive depreciation, several central banks in the region have taken actions to support their currencies.

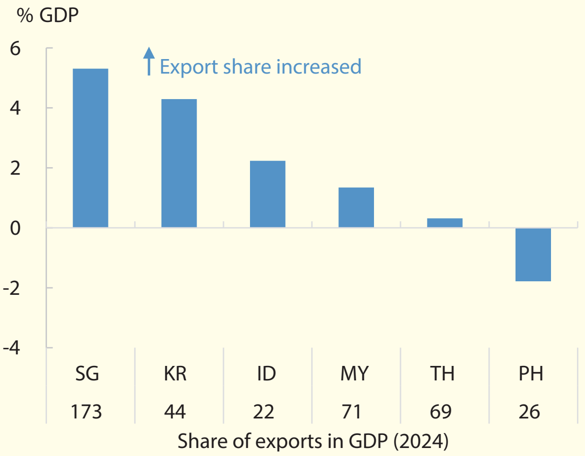
Unlike in 2018, the region now faces potential Trump 2.0 trade conflicts from a position of heightened vulnerability:

— Export dependence has increased, with export-to-GDP ratios surpassing pre-Trump 1.0 levels, therefore increasing the vulnerability of economies to external shocks (Chart 2.2).

— Pandemic-driven spending has reduced the fiscal buffers of many regional economies, restricting their governments' capacity to counter trade-related downturns.

— The uncertainty surrounding the pace of the US Fed's rate cuts continues to constrain the scope for regional central banks to implement rate cuts, as this could precipitate currency depreciation and fund flows volatility.

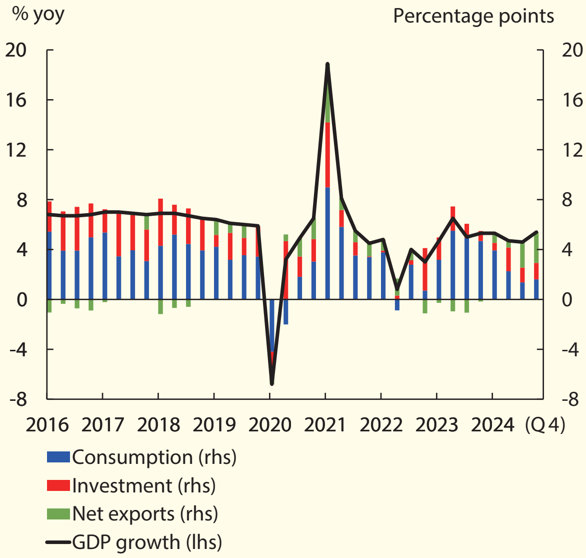
Chart 2.2
Emerging Asia: Change in the exports-to-GDP ratio (2016–17 average vs. 2023–24 average)



Note: The exports-to-GDP ratio is calculated as: (*Nominal goods and services exports/ Nominal GDP*) ×*100%*. Both exports and GDP figures are obtained from the expenditure-based GDP accounts. The 2024 figure represents the sum from Q4 2023 to Q3 2024.

Sources: CEIC and HKMA staff calculation.

Chart 2.3
Mainland China: Contribution to GDP growth by demand component



Sources: NBS, CEIC and HKMA staff estimates.

2.2 Mainland China

Economic performance and policy responses

Mainland China's year-on-year real GDP growth rebounded to 5.4% in the fourth quarter of 2024 from 4.6% in the third quarter (Chart 2.3). Specifically, domestic demand was boosted by a comprehensive package of policies introduced since late September 2024, which included monetary easing, fiscal support, housing market stimulus and capital market measures.[2] Front-loaded orders arising from tariff concerns also supported Mainland China's merchandise exports in the fourth quarter. For 2024 as a whole, real economic growth was 5%, in line with the official growth target.

Looking ahead, Mainland China's economic recovery is anticipated to continue in 2025, with the authorities pledging to adopt a more proactive fiscal policy and a moderately loose monetary policy, strengthen unconventional countercyclical adjustments, support private enterprises and expand domestic demand (especially consumption). That said, the economic outlook for 2025 continues to face multiple challenges and uncertainties, partly due to a challenging external environment (e.g. rising policy uncertainty in the US, additional tariffs announced by the Trump administration and rising trade protectionism elsewhere). The Two Sessions held in March 2025[3] set the official growth target for 2025 at around 5% for the third consecutive year, while the latest consensus forecasts expected the Mainland economy to expand by 4.5% in 2025.

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[2] These policies include the reduction in required reserve ratio and policy interest rates, a resolution plan to replace existing local government hidden debt, a large scale equipment upgrade and consumer goods trade-in programme, and the introduction of the Securities, Funds and Insurance companies Swap Facility and the Central Bank Lending Facility for Share Buybacks and Shareholding Increases to boost capital market liquidity.

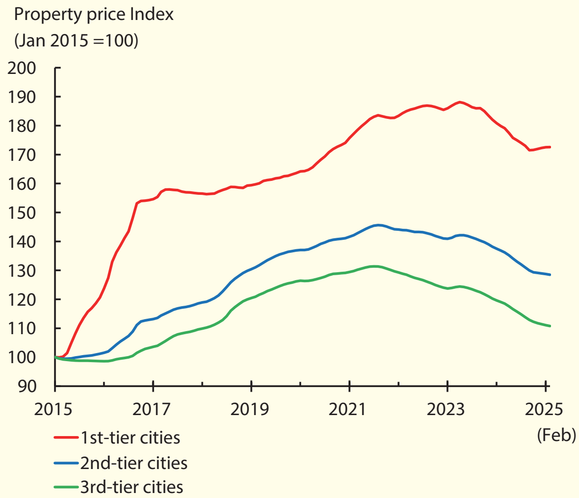
[3] In the Government Work Report, the authorities notably strengthened fiscal policy support by raising the official budget deficit target to a record high of around 4% of GDP in 2025 from 3% of GDP in 2024, while also increasing the fiscal spending and issuance of government bonds.

Headline consumer price index (CPI) inflation edged down in the second half of 2024 and early 2025, as both food and energy prices generally moderated. Core CPI inflation, which excludes food and energy prices, also remained soft during the same period.[4] The headline unemployment rate edged up to 5.4% in February 2025, with the unemployment rates for the 16–24 and 25–29 age groups standing at 16.9% and 7.3% respectively.

Asset and credit markets

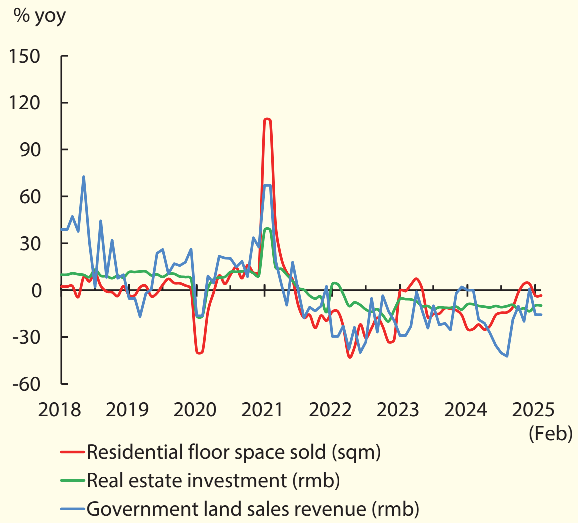
The housing market remained soft in the third quarter of 2024 amid still-weak demand and ample supply, but has shown more signs of stabilisation following the rollout of the comprehensive policy package from September 2024. In particular, the authorities called for "stabilising the housing market and halting its decline", and implemented more comprehensive measures to lower financing costs, relax buying restrictions and reduce inventory.[5] Consequently, housing prices have shown signs of stabilisation since late 2024, led by higher-tier cities (Chart 2.4). The residential floor space sold also returned to positive year-on-year growth in November and December 2024, before edging down in early 2025. Meanwhile, upstream activities such as property investment remained weak (Chart 2.5). Box 2 presents a novel index developed to track the housing market sentiment, leveraging the HKMA's in-house GenA.I. application.

Chart 2.4
Mainland China: Residential property prices by tier of cities



Sources: CEIC and HKMA staff estimates.

Chart 2.5
Mainland China: Property market activities



Sources: CEIC and HKMA staff estimates.

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4 In view of market concerns about deflation risks, the People's Bank of China (PBoC) stated that promoting a reasonable rise in prices will be an important consideration for monetary policy. The Mainland authorities also emphasised their commitment to a reasonable rebound in consumer prices in 2025.

5 These measures include reducing mortgage rates, down payment ratios and property-related taxes, increasing funding support for the "white list" projects and the PBoC's relending facility for destocking, allowing special local government bonds to be used for purchasing commercial properties for affordable housing and acquiring idle land, and renovating urban village and dilapidated housing.

The overall risk in the banking sector remained under control in the second half of 2024, with the average non-performing loan (NPL) ratios edging lower across the board (Table 2.A). Meanwhile, a rally in the bond market and an associated decline in the Central Government bond yields have prompted the People's Bank of China (PBoC) to strengthen its communications with the market to contain potential financial risks driven by herd behaviour.[6] The authorities also announced a combined RMB 10 trillion debt relief programme to replace local government hidden debts over the coming years, which will reduce the financial pressures on local governments and mitigate the debt risks of local government financing vehicles.

Table 2.A
Mainland China: NPL ratio by bank type

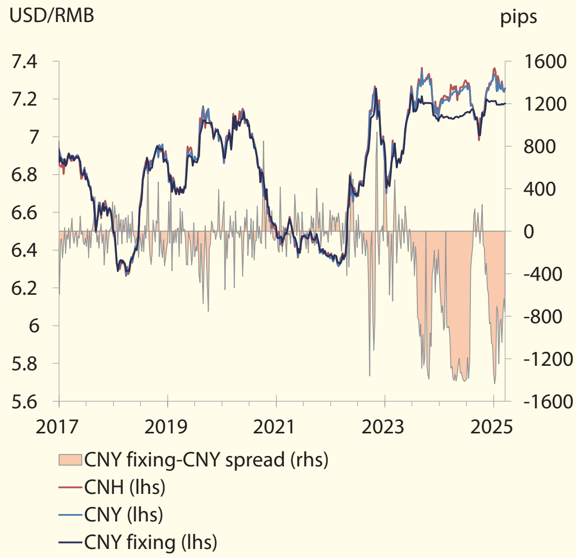
NPL ratio (%)	Dec 2023	Jun 2024	Dec 2024
State-owned commercial banks	1.26	1.24	1.23
Joint-stock commercial banks	1.26	1.25	1.22
City commercial banks	1.75	1.77	1.76
Rural commercial banks	3.34	3.14	2.80

Source: CEIC.

Exchange rate and fund flow indicators

Both the onshore (CNY) and offshore renminbi (CNH) softened against the US dollar from October to December 2024, leading to a wider gap with the largely stable CNY fixings (Chart 2.6). This in part reflected the strengthening of the US dollar, first driven by expectations of a "high for longer" US interest rate environment, and later as a result of market concerns about the US tariff hikes. Since mid-January 2025, the renminbi (RMB) has generally strengthened against the US dollar. Meanwhile, the PBoC reiterated its goal of keeping the RMB exchange rate basically stable, and pledged to prevent the risk of exchange rate overshooting and to take firm action against market-disrupting behaviour.[7] As for cross-border fund flows,[8] the onshore Mainland bond market generally registered net inflows in recent months, while the outstanding foreign holdings of Mainland bonds declined during most of the review period, as the amount of matured bonds more than offset the amount of net buying flows (Table 2.B).

Chart 2.6
Mainland China: Onshore and offshore renminbi exchange rates against the US dollar



Sources: Bloomberg and HKMA staff estimates.

Table 2.B
Mainland China: Foreign fund flow indicators

(RMB bn)	H2 2024	2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025
Northbound Bond Connect	69	492	–40	14	38	24	84
CIBM Direct and QFI	459	1135	50	32	57	69	149
Change in foreign holdings in the interbank market	–148	492	–142	–102	15	–23	70

Notes: Fund flows are measured by net buying flows for the Northbound Bond Connect and the CIBM Direct and QFI. "CIBM Direct and QFI" refers to the China Interbank Bond Market Direct Scheme and the Qualified Foreign Investor Scheme.
Sources: Wind, CFETS and HKMA staff estimates.

6 In view of the continued shortage of government bonds, the PBoC announced on 10 January 2025 the temporary suspension of its government bond purchases in the open market.

7 On 13 January 2025, the PBoC and the State Administration of Foreign Exchange lifted the cross-border macroprudential adjustment ratio for corporates and financial institutions to 1.75, from 1.5 previously, effectively loosening restrictions on offshore US dollar financing.

8 Daily data of net investment flows for Northbound Stock Connect has not been available since 19 August 2024. Meanwhile, Mainland stock prices surged in September and October 2024, but consolidated somewhat thereafter. On 23 January 2025, the authorities unveiled plans to steer medium- and long-term funds, such as insurance funds and publicly offered funds to invest in A-shares.

Box 1
Does A.I. lead to analogous investment decisions and collective asset sales among investors under market stress? Evidence from A.I.-driven investment funds

Introduction[9]

The widespread adoption of A.I.[10] has been transforming practices in financial markets. For instance, investment funds can now leverage A.I. to predict asset values and gauge market sentiment to guide their investment decisions. While the application of A.I. can improve operational efficiency and facilitate advanced data analytics, it also raises financial stability concerns. A particular concern is that funds employing similar A.I. models could make analogous investment decisions, which could lead to collective sales of similar assets among these funds in times of market stress, potentially exacerbating the pro-cyclical dynamics of asset prices.

To examine this issue, it is first necessary for us to identify whether and how investment funds are applying A.I. into their investment strategies. Such information is usually only disclosed in fund prospectuses. However, the vast number of investment funds globally[11] makes it challenging for us to manually examine all these documents.

This box describes how, to overcome this challenge, we leveraged GenA.I. to analyse prospectuses and identify investment funds that used A.I.. As detailed in the next section, our method is a practical and efficient one for identifying investment funds that leverage A.I. in their decision-making processes, as well as for classifying their A.I.-driven investment strategies.

By comparing the portfolio changes of A.I.-driven investment funds with their non-A.I.-driven counterparts, we could empirically examine whether the use of A.I. by investment funds leads to analogous investment decisions and collective asset liquidations among them during periods of market stress.

GenA.I.-powered identification of A.I.-driven investment funds and strategies

1) A.I.-driven investment funds

We retrieved a large sample of actively-managed equity open-ended funds (OEFs) from Morningstar Direct, representing an estimated 70% of the total assets of these funds in 2023. We also downloaded the funds' prospectuses from the Morningstar Document Library and analysed them in four steps:[12]

i. *Keyword screening:* We established a bank of keywords related to various A.I. subfields.[13] Those OEFs whose prospectuses contained at least one of these keywords (e.g. A.I., machine learning, natural language processing, deep learning, reinforcement learning, decision tree, etc.) were selected for further analysis in the next step, while the rest were presumed to be making no use of A.I..

ii. *Prospectus truncation:* For each selected OEF, we truncated its prospectus to include only the pages containing the keywords, as well as the immediately preceding and following pages, to ensure that the sentences containing

[9] For details, please refer to Leung et al. (forthcoming): "Implications of A.I. usage for financial stability: Evidence from A.I.-driven investment funds identified by generative A.I.", *HKIMR Working Paper*.

[10] A.I. generally refers to the simulation of human intelligence by machines, encompassing various subfields, including machine learning, natural language processing, and GenA.I..

[11] There are currently 278,660 surviving actively-managed open-ended funds around the world, according to Morningstar Direct.

[12] Morningstar Direct's data providers do not guarantee the accuracy, completeness or timeliness of any information provided by them and shall have no liability for their use.

[13] Each prospectus is written in different languages, with a total of 28 languages in use across all prospectuses. To facilitate effective analysis, we used keywords that matched the language of each respective prospectus.

the keywords were fully extracted.[14]

iii. *GenA.I.-powered prospectus analysis:* We imported each truncated prospectus into ChatGPT-4o-latest. We then prompted it to classify the respective OEF as one that employs A.I. to guide its investment decisions or not, and to extract relevant sentences from the prospectus that support its classification.

iv. *GenA.I.-powered and manual validations:* We imported each classification and its corresponding supporting sentences into Claude 3.5 Sonnet and prompted it to evaluate whether the classification was acceptable in relation to the supporting sentences. Any classification deemed not acceptable subsequently underwent manual evaluation.

This approach enabled us to identify a total of 4,827 OEFs that employ A.I. to guide their investment decisions, representing an estimated 1% of the global actively-managed equity mutual fund sector in terms of total assets in 2023.

2) A.I.-driven investment strategies

After identifying A.I.-driven OEFs, we prompted ChatGPT-4o-latest to analyse the supporting sentences to determine the A.I.-driven investment strategies for each A.I.-driven OEF. These strategies are summarised below:

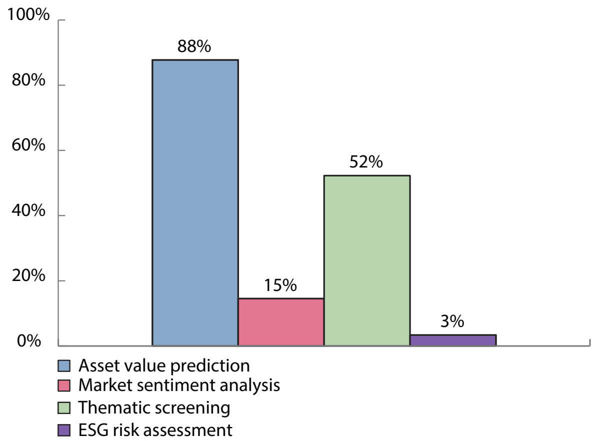
i. *Asset value prediction:* OEFs may employ machine learning techniques to predict asset values, often to identify assets that are undervalued.

ii. *Market sentiment analysis:* OEFs may leverage natural language processing techniques to gauge market sentiment from news and social media, often to track the momentum of certain assets.

iii. *Other strategies:* This category includes thematic screening and environmental, social, and governance (ESG) risk assessment. For the former, OEFs may use natural language processing techniques to analyze written documents in order to identify assets aligned with specific investment themes (e.g. sustainable energy, A.I., and semiconductors, etc.). For the latter, OEFs may apply the same techniques to evaluate the ESG risks of assets.

In our sample, some A.I.-driven OEFs employed more than one of these strategies. Among A.I.-driven OEFs, A.I. was applied to asset value prediction by 88% of the sample (Chart B1.1, blue bar), making it the most popular strategy, followed by thematic screening (green bar), market sentiment analysis (pink bar), and ESG risk assessment (purple bar).

Chart B1.1
Proportions of A.I.-driven investment strategies



Notes:
i. Each bar represents the share of A.I.-driven OEFs adopting the respective A.I.-driven investment strategy at the end of 2023, in terms of total net assets;
ii. The sum of the shares can exceed 100% as an OEF may adopt more than one strategy.
Sources: Morningstar Direct and HKMA staff estimates.

Empirical assessment of the financial stability implications of A.I.

To examine the implications of A.I. for financial stability, we compared the monthly portfolio changes of A.I.-driven and non-A.I.-driven OEFs between January 2022 and June 2024 retrieved from Morningstar Direct. To avoid distortion in

[14] Truncation was essential for the subsequent GenA.I.-powered analysis, as the word count of entire prospectuses often exceeded the capacity, referred to as the context window in jargon, of all the GenA.I. models available at the time of this study.

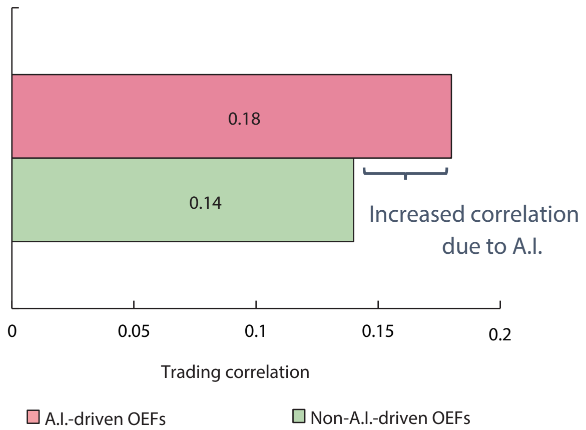
the comparison due to differences other than the use of A.I., we matched 2,698 A.I.-driven OEFs with 2,374 non-A.I.-driven OEFs with similar characteristics.[15]

1) Does the use of A.I. by OEFs contribute to similar investment decisions among them?

We measured the degree of similarity in investment decisions among OEFs by analysing their trading correlation. Specifically, a higher trading correlation among OEFs reflects that they adjust their holdings of the same asset more similarly, and vice versa.

We found that the use of A.I. contributes to more similar investment decisions. Specifically, the trading correlation among A.I.-driven OEFs (Chart B1.2, pink bar) was measured at 0.18, almost one-third higher than the 0.14 correlation observed among their non-A.I.-driven counterparts (green bar).

Chart B1.2
Estimated trading correlations of A.I.-driven and non-A.I.-driven OEFs



Notes:
i. Each bar represents the trading correlation in investment decisions of the OEFs estimated by a fixed-effects regression model, with the colour indicating the given OEF types;
ii. Each unit of trading correlation is equal to a 1 percentage change in an OEF's asset holdings in response to a 1 percentage change in the holdings of the same asset by other OEFs in the respective group;
iii. The bar is solid if the estimated correlation is statistically significant at the 1% level.
Sources: Morningstar Direct and HKMA staff estimates.

2) Does the use of A.I. by OEFs lead to collective asset sales among them under market stress?

While we have observed a higher trading correlation among A.I.-driven OEFs, their collective behaviors may not necessarily lead to simultaneous asset sales among them during times of market stress. This is because different A.I.-driven strategies may respond differently to stock market cycles. For instance, OEFs employing A.I. for asset value prediction may focus on identifying market bottoms to buy the dip. Conversely, OEFs employing A.I. for market sentiment analysis may aim to track downward market trends and adopt a risk-off approach. In line with this conjecture, our analysis showed mixed responses of A.I.-driven OEFs to market stress. Specifically:

i. OEFs employing A.I. for asset value prediction: These funds were generally found to buy the dip by using their cash-like assets (Chart B1.3, left blue bar) to acquire risky assets (left orange bar) during times of market stress.

ii. OEFs employing A.I. for market sentiment analysis: These funds were generally observed to be in a risk-off mode by reallocating into cash-like assets (right blue bar) and away from risky assets (right orange bar) during times of market stress. Their asset sales were also found to be more than five times greater in size than those of non-A.I.-driven OEFs.[16]

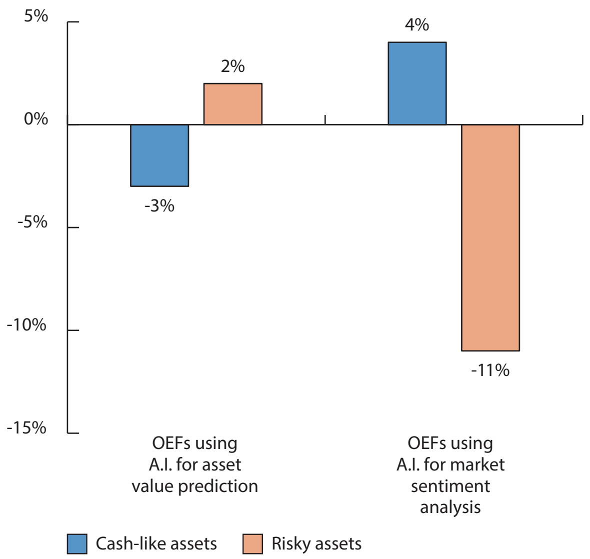
These findings indicate that the use of A.I. does not necessarily lead to collective asset sales among OEFs during times of market stress,

[15] Each A.I.-driven OEF was matched with a non-A.I.-driven OEF that was incepted in the same year, had the same investment focus, and was closest in asset size.

[16] The difference was estimated to be statistically significant at the 1% level. As for OEFs employing A.I. for thematic screening or ESG risk assessment, estimations indicated that their investment decisions were uncorrelated with one another and insensitive to market stress. A possible reason is that these strategies focus on diverse investment themes or ESG risks, which are arguably less responsive to stock market cycles. Consequently, these strategies led to mixed investment decisions across these OEFs.

as the responses of these OEFs to market stress largely depend on the particular use of A.I. in their investment strategies. Specifically, only OEFs that use A.I. for market sentiment analysis were found to be more susceptible to the possibility of amplifying market stress. Importantly, their market reactions were estimated to be stronger than those of OEFs not using A.I..

Chart B1.3
Percentage changes of OEFs' asset holdings in times of market stress



Notes:
i. Each bar represents the percentage change in asset holdings of the respective OEF types during times of market stress estimated by a fixed-effects regression model, with the colour indicating the given asset category;
ii. A month was classified as under market stress if the VIX index of the month exceeded the upper quartile of the sample period, primarily covering the recent interest rate hikes in major economies;
iii. Cash-like assets include currencies, time deposits, certificates of deposit, money market funds (MMFs), and US Treasuries, while risky assets encompass equities, corporate bonds, and non-MMF mutual funds.
iv. The bar is solid if the estimated percentage change is statistically significant at the 1% level.

Sources: Morningstar Direct and HKMA staff estimates.

Conclusion and implications

In conclusion, our analysis confirms the conjecture that A.I. can contribute to analogous investment decisions across OEFs if they incorporate A.I. for the same investment strategies. However, these strategies do not necessarily trigger collective asset liquidations among OEFs during times of market stress, as they exhibit significant variations in their responses to such market conditions.

These findings carry two important financial stability implications. First, while a wider use of A.I. in financial markets could be a potential source of financial stability risks, assessing such risks should take into account the nuances across its diverse applications. Second, pro-cyclical investment strategies powered by A.I., such as market sentiment analysis, warrant closer monitoring due to their potentially greater adverse impacts on market dynamics.

At the same time, this box demonstrates the potential of GenA.I. for improving financial risk surveillance. In particular, GenA.I.'s strong capacities in textual analysis enable it to effectively extract important qualitative information related to financial stability risks. Such information can complement quantitative data, contributing to a more comprehensive assessment of financial stability.

Box 2
Tracking Mainland China's housing market sentiment using social media big data and GenA.I.

Introduction

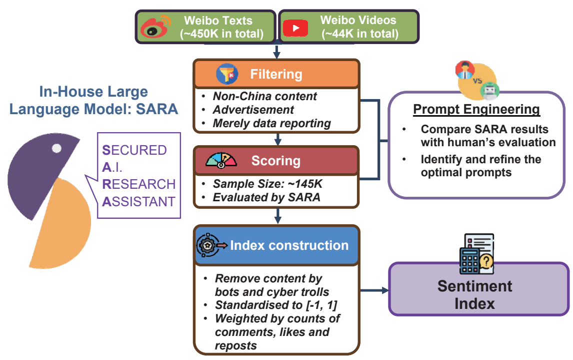
Following a strengthening of policy support, Mainland China's housing market has shown some signs of stabilisation recently. However, the sustainability of the recovery remains uncertain, with much depending on homebuyer sentiment. Leveraging the HKMA's first in-house GenA.I. application, we developed a novel daily index to track housing market sentiment on the Mainland using social media big data.[17] Our in-house GenA.I., called SARA (Secured A.I. Research Assistant), is built on open-source models and hosted entirely on-premises to ensure security, privacy, and control. Tailored for our needs, SARA excels in understanding and analysing Chinese language content.

Data and methodology

Chart B2.1 illustrates our workflow. We begin by gathering data through web-scraping posts and videos from Weibo, a major social media platform in Mainland China. We then employ SARA to convert video content into text and filter out irrelevant materials, such as advertisements. Third, we leverage SARA's capabilities to perform sentiment analysis, instructing SARA to assume the role of a property market analyst and rate each social media post on a scale from 0 to 10. In this scale, 0 represents a very pessimistic outlook, while 10 signifies a very optimistic one. This granular rating system allows us to capture a wide range of sentiments expressed by users. After scoring, we remove microblogs posted by suspicious social bots and cyber trolls to reduce sentiment bias.[18] Finally, the sentiment index is standardised into a range between -1 and 1, taking into account the influence of each post based on the number of comments, likes, and reposts. By integrating all these steps, we are able to generate a daily sentiment index.

Throughout the process, a human-in-the-loop approach is adopted to ensure the accuracy and reliability of our findings. In particular, we compare SARA's ratings with evaluations done by human analysts using two random samples of 600 posts. With respect to raw data filtering, SARA shows a good classification performance, with an overall accuracy rate (i.e. the proportion of correctly identified results among the total number of cases examined) of over 80% in our sample. Regarding sentiment evaluation, the scores evaluated by SARA, on average, are positively correlated with those of humans.

Chart B2.1
The development process of the GenA.I.-driven housing market sentiment index



Source: HKMA staff illustration.

Tracking property market sentiment in Mainland China

Our GenA.I.-driven sentiment index is shown as the blue line in Chart B2.2. The sentiment index effectively captures shifts in sentiment in response to key landmark events. Specifically, the index improves notably in response to

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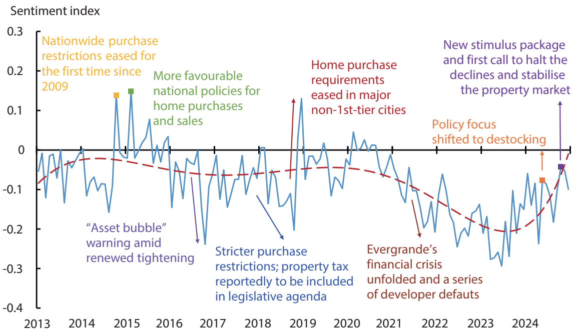
17 For more details, see Wu et al. (2025) "A generative artificial intelligence approach to tracking Mainland China's housing market sentiment using social media data", *HKMA Research Memorandum 05/2025*.

18 In particular, we flag an account as a target poster of social bots and cyber trolls if it publishes (i) more than five posts on the same day it is created, (ii) more than five posts between 2:00 a.m. and 6:00 a.m. on any day, a period when humans are typically inactive, or (iii) identical posts within five-second intervals.

favourable events such as major policy easing. For example, in late 2014 and early 2015 (see yellow and green labels), the index surged following the first nationwide easing of purchase restrictions since 2009 and the introduction of favourable policies to boost housing transactions. On the other hand, the index declines when unfavourable events occur. For instance, it declined in 2021 (see brown arrow), highlighting potential drivers such as the rising default risks from certain developers. In a more recent episode, the index showed some improvement in housing sentiment following the new stimulus packages being rolled out from September 2024, but it saw some consolidation towards the end of 2024.

Chart B2.2
GenA.I.-driven housing market sentiment index for Mainland China

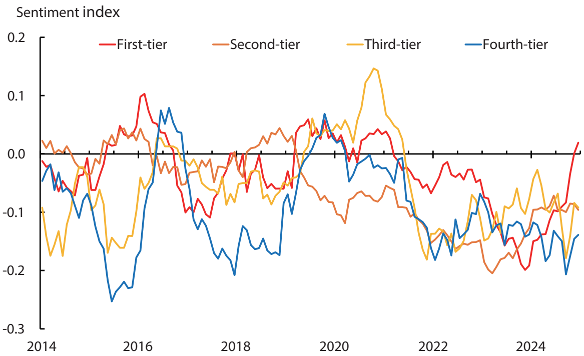


Notes: Data converted into a monthly frequency. The red dashed line indicates the 12-month moving average of the sentiment index.
Sources: Weibo, SARA and HKMA staff estimates.

Apart from creating a national sentiment index, we also leveraged GenA.I.'s strong comprehension and reasoning capability to develop regional sentiment indices. As far as we know, such granular sentiment indices represent a novel contribution to the literature. Indeed, we find that GenA.I. can not only infer the appropriate cities even when the city names are not explicitly stated, but also recognise the city being focused on even when multiple cities are mentioned.[19]

As illustrated in Chart B2.3, our city-tier level sentiment indices display similar cyclical patterns across various city tiers. However, we also observe disparities during specific periods. For instance, in early 2015, first- and second-tier cities experienced a boost in sentiment, driven by nationwide easing policies such as lower down payment ratios and tax benefits. By contrast, lower-tier cities saw a softening in sentiment during the same period, largely due to their high inventory-to-sales ratios. Subsequently, the sentiment in third- and fourth-tier cities surged sharply. This increase coincided with the large-scale implementation of monetised resettlement for urban renewal, alongside varying city-specific policies that reportedly favoured lower-tier cities the most. In late 2024, the sentiment in first-tier cities surged following the latest round of supportive measures, while the indices remained somewhat sluggish in lower-tier cities.

Chart B2.3
GenA.I.-driven housing market sentiment index by city tier



Notes: Data converted into a monthly frequency. All series are smoothed using a 12-month moving average to facilitate visualisation.
Sources: Weibo, SARA and HKMA staff estimates.

Concluding remarks

In sum, our GenA.I.-driven sentiment indices, based on social media big data, are able to effectively capture the sentiment in Mainland China's housing market, both at the national and city-tier levels. This research helps us better identify trends, understand complex developments, and detect and respond to emerging risks.

[19] For more details, see Wu et al. (2025).

3. Domestic economy

The Hong Kong economy continued to grow moderately in the second half of 2024, with sequential improvements in exports of services. Looking ahead, merchandise exports are likely to face challenges from intensified trade conflicts, while inbound tourism should improve further on the back of various tourism-related supportive measures. Although domestic consumption may remain under pressure, the Mainland's proactive policies to boost its economy are expected to bolster business sentiment. The outlook is clouded by various external risks and uncertainties, particularly those related to global growth prospects, the US trade policy and the pace of the US Fed's interest rate cuts. Meanwhile, the unemployment rate has continued to stay low, indicating a resilient labour market. Inflation has remained mild despite some upward pressure from rising housing rentals.

3.1 *Real activities*

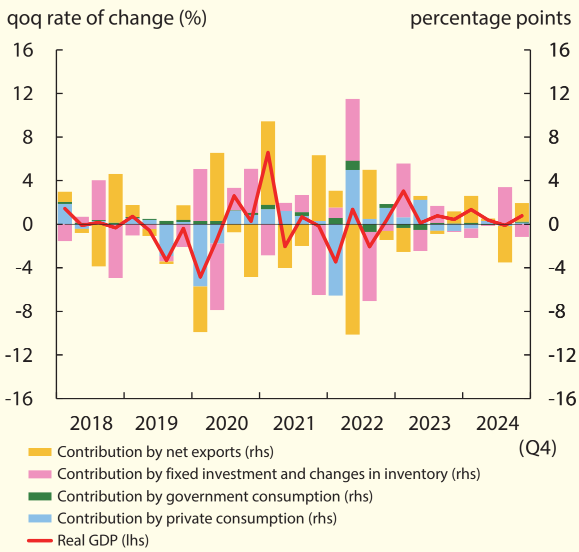
The Hong Kong economy maintained a moderate growth in the second half of 2024, with real GDP posting a year-on-year growth of 1.9% and 2.4% in the third and fourth quarters respectively (Table 3.A). On a seasonally adjusted quarter-on-quarter basis, real GDP experienced a mild contraction of 0.1% in the third quarter, followed by modest growth of 0.8% in the fourth quarter (Chart 3.1).

Table 3.A
Real GDP growth

		Year-on-year growth rate (%)	Seasonally adjusted quarter-on-quarter growth rate (%)
2023	Q1	+2.7	+3.1
	Q2	+1.6	+0.1
	Q3	+4.2	+0.8
	Q4	+4.3	+0.4
2024	Q1	+2.8	+1.3
	Q2	+3.1	+0.4
	Q3	+1.9	–0.1
	Q4	+2.4	+0.8

Source: Census and Statistics Department (C&SD).

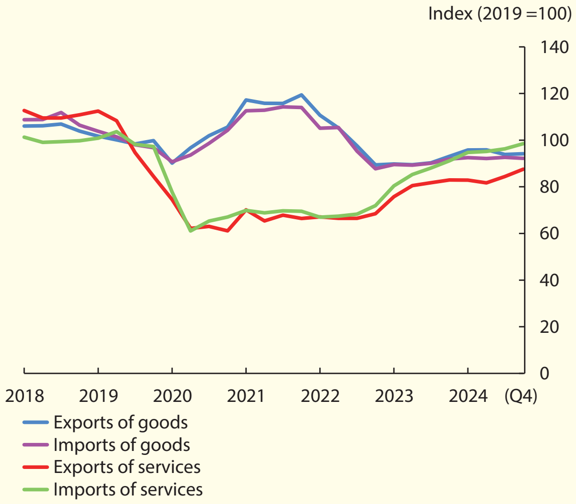
Chart 3.1
Real GDP growth and contributions by major expenditure components



Note: Growth rates are seasonally adjusted.
Sources: C&SD and HKMA staff estimates.

Externally, the second half of 2024 saw a pickup in exports of services, driven by strengthened cross-border financial activities and steady growth in visitor arrivals.[20] By contrast, exports of goods moderated alongside a softening economic environment in some major markets (Chart 3.2). Domestically, while showing signs of stabilisation in the fourth quarter, private consumption remained weak due to the ongoing impact of shifting consumption patterns among local residents. Investment spending showed an overall improvement in the second half of 2024, despite a modest decline in the fourth quarter driven mainly by a contraction in building and construction activities. For 2024 as a whole, real GDP increased by 2.5%, following the 3.2% growth recorded in the preceding year.

Chart 3.2
Export and import volumes



Note: The data are seasonally adjusted.
Source: C&SD.

Looking ahead, Hong Kong's economy is expected to maintain moderate growth. On the external front, the increasing risk of trade conflicts is likely to pose headwinds to merchandise exports growth, although ongoing demand for electronics may partly mitigate the impact.[21] Box 3 evaluates the potential economic impact of digitalising trade documents in Hong Kong, a move which could enhance the efficiency of Hong Kong's trade ecosystem and ultimately sustain its competitiveness as an international trading hub. Meanwhile, inbound tourism is expected to improve further on the back of strenuous efforts by the Government to revitalise Hong Kong's tourism industry[22] as well as other tourism-related support from the Mainland authorities.[23] On the domestic front, Mainland's proactive policies to boost its economy will help bolster Hong Kong's business sentiment,[24] thereby supporting private investment. However, changes in local residents' spending patterns may continue to restrain the recovery of private consumption, albeit with some offsetting support from a resilient labour market.

[20] Visitor arrivals into Hong Kong amounted to about 45 million persons in 2024, equivalent to 80% of the level in 2019. In 2024, Hong Kong resident departures amounted to about 105 million persons, exceeding the corresponding pre-pandemic numbers in 2019 by 11%.

[21] The Hong Kong Trade and Development Council has forecasted Hong Kong's merchandise exports to grow moderately by 4% in 2025.

[22] On 30 December 2024, the Government released the Development Blueprint for Hong Kong's Tourism Industry 2.0, outlining four major development strategies for the industry: (i) nurturing and developing tourism products and initiatives with local and international characteristics; (ii) developing a diversified portfolio of visitor source markets; (iii) promoting smart tourism; and (iv) enhancing service quality and support.

[23] On 1 December 2024, the Central Government resumed the multiple-entry Individual Visit Scheme (IVS) for Shenzhen permanent residents and expanded the new arrangement to include residence permit holders in Shenzhen.

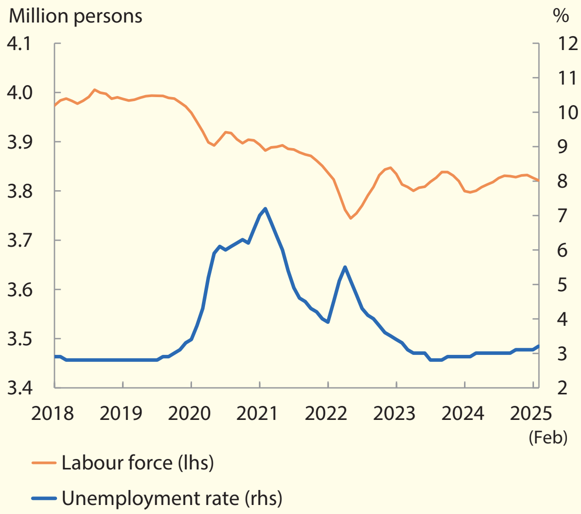
[24] The Purchasing Managers' Index (PMI) stayed in the expansionary zone (above 50) from October 2024 to January 2025 before falling to 49 in February 2025 amid rising trade tensions.

For 2025 as a whole, the Government forecasts real GDP growth in the range of 2% to 3%.[25] This growth outlook is subject to the risks and uncertainties discussed in previous chapters, particularly those associated with global growth prospects, the US trade policy, and the pace of the US Fed's interest rate cuts.

3.2 Labour market conditions

The labour market continued to be resilient, with the unemployment rate staying within a low range of 3.0%–3.2% since March 2024. The size of the labour force has also been broadly stable since August 2024, although it has remained below its pre-pandemic level (Chart 3.3). Looking ahead, labour demand is expected to be supported by ongoing economic growth, although some sectors may be adversely affected by escalating trade tensions. Meanwhile, the Government's various talent attraction initiatives and labour importation schemes[26] will continue to help address manpower demand from various sectors[27].

Chart 3.3
Labour market conditions



Source: C&SD.

3.3 Inflation

Consumer price inflation stayed mild over the past few months. On a year-on-year basis, the underlying composite consumer price index increased slightly by 1.1% and 1.2% in the third and fourth quarters of 2024 respectively, and by 1.3% in January and February 2025 combined (Chart 3.4). A breakdown of its components reveals that the housing rental component has continued to increase gradually, reflecting the feed-through of rising fresh-letting private residential rentals in previous quarters. Meanwhile, upward price pressure from food continued to dissipate, whereas prices of energy-related items remained well contained.

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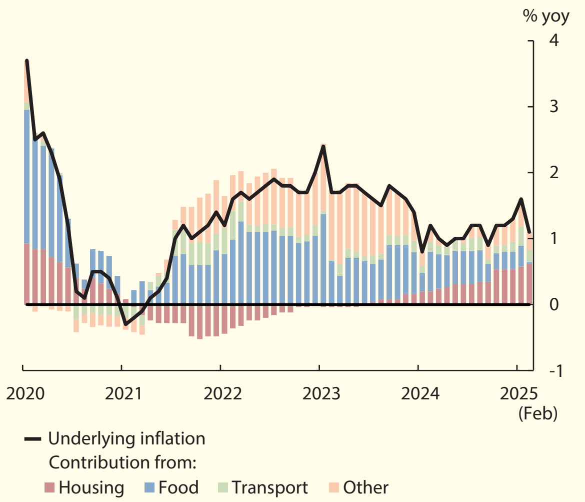
25 The private-sector analysts' consensus forecast on Hong Kong's real GDP growth for 2025 averaged at 2.2%.

26 Following the announcement in the 2024 Policy Address, the Government enhanced the Top Talent Pass Scheme and the Quality Migrant Admission Scheme by expanding the list of eligible universities, extending the validity period of the visas and enhancing the assessment criteria. Furthermore, the Government has also temporarily exempted full-time non-local undergraduate students from part-time work restrictions. In the 2025–26 Budget, the Government announced further initiatives on talent attraction, including inviting top and leading talents to come to Hong Kong for development under the Quality Migrant Admission Scheme, and allowing eligible young non-degree talents to come to Hong Kong to join skilled trades facing manpower shortage through the Admission Scheme for Mainland Talents and Professionals and the General Employment Policy.

27 As at of the end of February 2025, over 450,000 applications under these schemes had been received. Over 290,000 applications have been approved, with over 196,000 of the approved applicants having arrived in Hong Kong with their families. This surpasses the Government's target of attracting 105,000 talents altogether over the three years from 2023 to 2025.

Looking ahead, overall inflation is expected to remain soft. External price pressures are likely to be contained despite uncertainties surrounding global commodity market developments, mitigating the upward pressure on domestic costs alongside ongoing economic growth. The Government projects the underlying and headline inflation rates to be 1.5% and 1.8% respectively in 2025.[28]

Chart 3.4
Underlying consumer price inflation and its drivers



Sources: C&SD and HKMA staff estimates.

[28] The market consensus forecasts for the headline inflation rate for 2025 is 1.8%.

Box 3
Assessing the potential economic impact of digitalising trade documents in Hong Kong

Introduction

The evolving supply chain landscape underscores the need for Hong Kong to maintain its competitive edge as an international financial and trade centre. Upgrading the trade ecosystem and lowering trade costs through the digitalisation of trade is widely recognised as a key strategy to promote trade growth. Nevertheless, trade processes, particularly in maritime shipping, remain highly paper-based, hindering the progress of trade digitalisation. This is largely because the existing legal framework does not currently consider the digital versions of negotiable documents as having the same legal status as their physical counterparts.[29] Consequently, a number of critical trade documents, such as the bill of lading (a legally binding document in shipping that confers ownership of the corresponding cargo on the holders), have to be physically delivered to various parties throughout the entire trade process.[30]

The United Nations Commission on International Trade Law (UNCITRAL) took an essential step towards trade digitalisation in 2017 by publishing the Model Law on Electronic Transferrable Records (MLETR) in 2017. This is a standardised legal framework that aims to facilitate the adoption of paperless trade by enabling the legal use of electronic records in negotiable documents. To align with this international standard, the Government announced in its 2025–26 Budget that it would consider legislative amendments with reference to MLETR, with the goal of introducing the proposed amendments to the Legislative Council within 2026.

Against this background, this box presents an assessment of the potential economic impact of digitalising trade documents in Hong Kong. Specifically, we attempt to quantify the immediate net savings in trade costs[31], and further estimate the potential increase in trade value arising from these net cost savings.

A cost-benefit analysis of digitalising trade documents

Benefits:

The major immediate benefit of digitalising trade documents lies in the reduction of trade costs, as the use of digital documents can streamline the administrative tasks at various stages of a trade (e.g. sales, insurance, payment and finance, customs).[32] In the context of Hong Kong, given that the legislative amendments affect the negotiable trade documents in shipping, we assume that only the costs associated with marine and river trade businesses would be reduced.

29 The key trade documents for airfreight and land transport (i.e. air waybill (AWB) and waybill) are non-negotiable in nature. Hence, their digitalisation is not restricted by the existing legal framework. Indeed, the digitalisation of AWBs began as early as 2010. According to the latest available data from the International Air Transport Association, the penetration rate of e-AWBs in Hong Kong had exceeded 80% by December 2020.

30 According to the International Chamber of Commerce, a typical shipping trade transaction involves approximately 40 types of trade documents, of which around 20% are negotiable and are therefore required to be presented in paper form. Some of these negotiable trade documents, such as bill of lading, bill of exchange, and promissory note, are widely used in various parts of a trade process. Other negotiable trade documents include ship's delivery order, warehouse receipt, mate's receipt, marine insurance policies and cargo insurance certificate.

31 Our methodology follows the study conducted by the Department for Digital, Culture, Media & Sport of the Government of the United Kingdom (2022), "Impact assessment of the Electronic Trade Documents Bill".

32 Based on the estimation of the United Nations electronic Trade Documents Project, paper-handling costs account for about 5–10% of total trade value, and at least 50% of these costs could be saved by digitalisation.

Other significant benefits highlighted by the trade and logistics industry as well as by several other studies[33] include more secure and efficient flows of trade finance payments, reduced risk of fraud and human error, enhanced customer experience, and environmental benefits arising from the reduced use of paper and courier services. However, these benefits are difficult to quantify at this stage and have therefore been excluded from this cost-benefit analysis.

Costs:

As with many other digital transformation processes, relevant firms will incur some transition costs as they shift to using digital trade documents. These costs comprise expenses related to the development of new internal processes, staff training, technology upgrades, and familiarisation with new regulations and guidelines.[34]

Net benefits:

The net benefits, i.e. the net cost savings, are estimated by comparing the monetised values of the aforementioned immediate benefits and costs based on a set of evidenced assumptions. We have further conducted a sensitivity analysis on the net benefits using two different sets of assumptions on the transition progress in Hong Kong, measured by the rate of businesses' adoption of the digital trade document system. Specifically, we assume the adoption rate to follow the pace as set out by the global industry target, increasing to 50% in 2031 and 100% in 2033 in the base-case scenario.[35] To account for a slower transition progress, we also consider an alternative scenario with the adoption rate reaching only half of the industry's targeted scenario.

The results, based on a 10-year appraisal period from 2027 to 2036 and a real social discount rate of 4%[36], are summarised in Table B3.1. Our estimation suggests that the digitalisation of trade documents enabled by the legal amendments could yield a total net cost savings of HK$16.4 billion–HK$34.9 billion at present value over the next decade[37], equivalent to 0.05–0.11% of GDP per year on average.

Table B3.1
Estimated net benefits of digitalising trade documents

Scenarios based on different transition progress	Total net cost savings over 2027–2036	As % of GDP per year on average
Industry's targeted scenario: reaching 50% in 2031 and 100% in 2033	HK$ 34.9 billion	0.11%
Alternative scenario with a slower transition progress: reaching 25% in 2031 and 50% in 2033	HK$ 16.4 billion	0.05%

Note: Net cost savings are measured in present value in 2025.
Source: HKMA staff estimates.

An estimation of the potential increase in trade flows

A lower trade cost could enhance the competitiveness of Hong Kong's ports and increase the access of small and medium-sized enterprises (SMEs) to the global market, thereby boosting the amount of trades flowing through Hong Kong. To estimate the potential increase in

33 Including (i) Asian Development Bank (2023), "ADB Briefs — Driving digitalisation of global trade: UNCITRAL Model Law on Electronic Transferable Records"; (ii) European Bank for Reconstruction and Development (2023), "Enabling digital trade through legal reform"; and (iii) Commonwealth Secretariat (2022), "Quantitative analysis of the move to paperless trade".

34 This analysis excludes costs that are difficult to quantify, such as the potential revenue loss of the courier firms that are currently involved in the paper-based trading processes, and the environmental costs arising from the increased energy consumption by blockchain or other digital platforms.

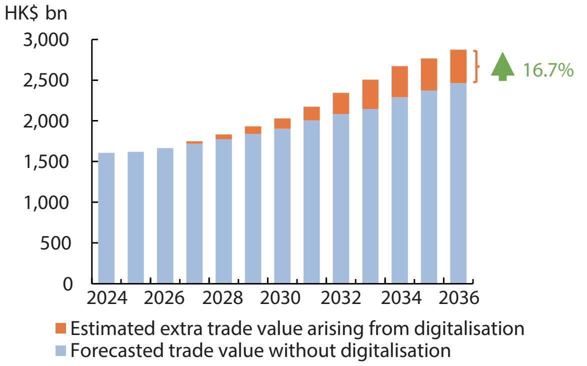
35 The nine major ocean carrier members of the Digital Container Shipping Association, a non-profit organisation driving standardisation and digital innovation in the container shipping sector, set an industry target in February 2023 to digitalise 50% of the bills of lading by 2028 and 100% by 2030.

36 The real social discount rate of 4% is generally used by government work projects in Hong Kong from 2018 to 2026. For details, see https://www.legco.gov.hk/yr07-08/english/fc/pwsc/papers/p08-31e.pdf; https://www.eeb.gov.hk/sites/default/files/en/node67/Study_on_the_Feed-in_Tariff_Rates_for_RE_in_HK.pdf

37 The estimated net cost savings for Hong Kong are comparable to those for the UK, which were estimated to be around £1,137 million over a 10-year appraisal period in the best-estimate scenario.

trade value, we follow a study conducted by the International Chamber of Commerce on the same issue[38] by using the concept of cost elasticity of trade, which measures the responsiveness of trade flows to changes in trade cost. According to the literature, the cost elasticity of trade is typically estimated to range from four to ten, depending on the data sources and estimation techniques employed.[39] With this estimated range, we follow the methodology adopted in the ESCAP-World Bank trade cost database and assume an elasticity of eight in our study. Our results indicate that the net reduction in trade costs resulting from the digitalisation of trade documents could increase the value of Hong Kong's shipping trade by 16.7% in 2036 in the base-case scenario (Chart B3.1).

Chart B3.1
Forecasted value of Hong Kong's shipping trade



Note: The forecasted values of Hong Kong's shipping trade without digitalisation of trade documents for the years up to 2029 are calculated based on the forecasted values from the Consensus Forecast and the International Monetary Fund. For the subsequent years, the forecasted values are calculated using the corresponding 10-year rolling average growth rates.

Source: HKMA staff estimates.

It is worth noting that our estimation provides only a conservative assessment of the direct quantifiable economic benefits that may result from the digitalisation of trade documents, without taking into account a range of significant indirect benefits that are difficult to quantify at this stage. These benefits include enhanced access to trade finance for SMEs facilitated by streamlined banks' credit assessment processes, the development of more innovative trade finance solutions driven by the adoption of Hong Kong's next-generation financial infrastructure (e.g. the Commercial Data Interchange), as well as seamless trade settlement empowered by the use of tokenisation under Project Ensemble.

Concluding remarks

Our study suggests that the digitalisation of the trade process in maritime shipping has the potential to unlock substantial direct and indirect benefits for the Hong Kong economy. This assessment is subject to certain limitations due to data constraints. In addition to excluding the aforementioned indirect benefits, this study also relies on a simplifying assumption that the cost savings are directly proportional to the value of the traded goods, rather than to the number of trades, due to the unavailability of data on the number of shipping trades handled by the ports in Hong Kong.

38 International Chamber of Commerce (2021), "G7: Creating a modern digital system".

39 See (i) Simonovska and Waugh, "The elasticity of trade: Estimates and evidence", Journal of International Economics 92.1 (2014): 34–50; and (ii) ESCAP-World Bank Trade Cost Database: Explanatory Note for Users (July 2017).

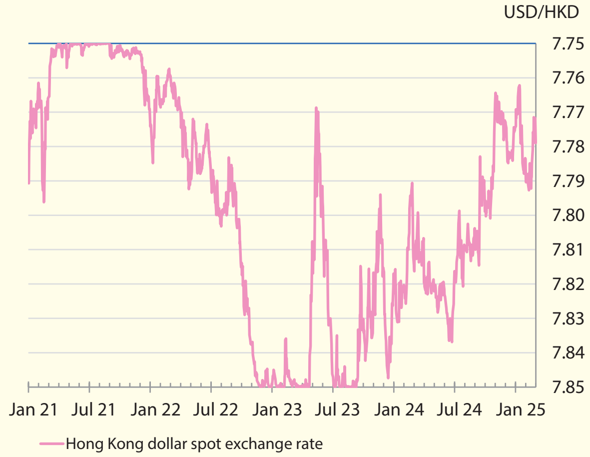
4. Monetary and financial conditions

The Hong Kong dollar (HKD) strengthened in late September 2024, mainly supported by a surge in local stock market activities following the announcement of a series of economic stimulus measures in Mainland China. The HKD softened in early 2025 but strengthened thereafter amid strong performance of the local stock market. Hong Kong Interbank Offered Rates (HIBORs) generally tracked their US dollar (USD) counterparts while shorter-tenor rates were also being affected by local supply and demand. Short-term HIBORs tightened temporarily in late September 2024 due to buoyant equity market and quarter-end funding demand, firmed up again amid thinner liquidity ahead of the year-end, and then softened in early 2025 as seasonal liquidity tightness eased. Total deposits increased in the seven months from end-June 2024, while bank credit declined, reflecting subdued credit demand driven in part by the high interest rate environment. Overall, the HKD exchange and money markets continued to trade in a smooth and orderly manner. Looking ahead, rising trade tensions between the US and its major trading partners and heightened uncertainty surrounding the US interest rate outlook may increase fund flow volatility. Nonetheless, with its ample foreign reserves position and robust financial system, Hong Kong is well able to withstand the volatilities in fund flows without compromising its financial stability.

4.1 Exchange rate and capital flows

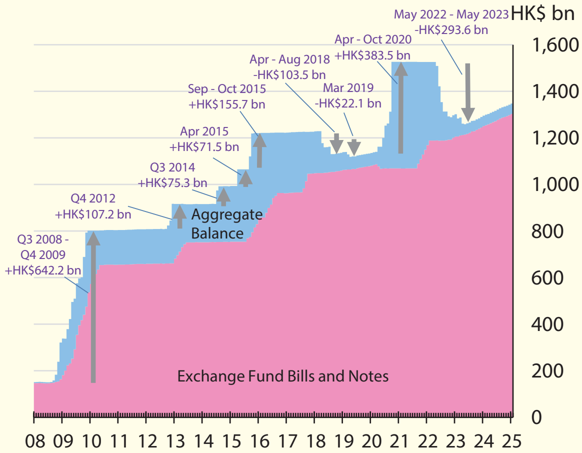
The HKD strengthened in late September 2024, mainly supported by a surge in local stock market activities following the announcement of a series of economic stimulus measures in Mainland China. The HKD softened in early 2025 but strengthened thereafter amid strong performance of the local stock market. During the review period, the HKD traded within a range of 7.7622 and 7.8010 against the USD (Chart 4.1). As the CUs have not been triggered since May 2023, the Aggregate Balance of the banking system remained little changed at HK$44.7 billion at the end of February 2025, and the day-to-day interbank operations and settlement activities among banks continued to operate in a smooth and orderly manner (Chart 4.2).

Chart 4.1
Hong Kong dollar exchange rate



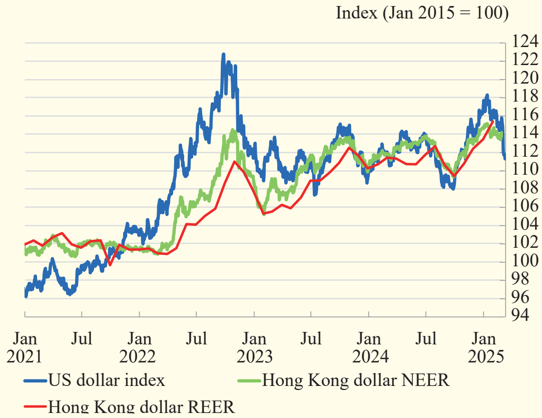
Source: HKMA.

Chart 4.2
Aggregate Balance and Exchange Fund Bills and Notes (EFBNs)



Source: HKMA.

Chart 4.3
Nominal effective exchange rate index (NEER) and real effective exchange rate index (REER)



Note: The REER is seasonally adjusted and available only on a monthly basis.
Sources: CEIC, C&SD and HKMA staff estimates.

Broadly tracking the movements of the US dollar, the Hong Kong dollar nominal effective exchange rate index (NEER) strengthened from late September 2024 before stabilising towards the end of the review period (Chart 4.3). Meanwhile, the Hong Kong dollar real effective exchange rate index (REER) generally followed the movement of the NEER.

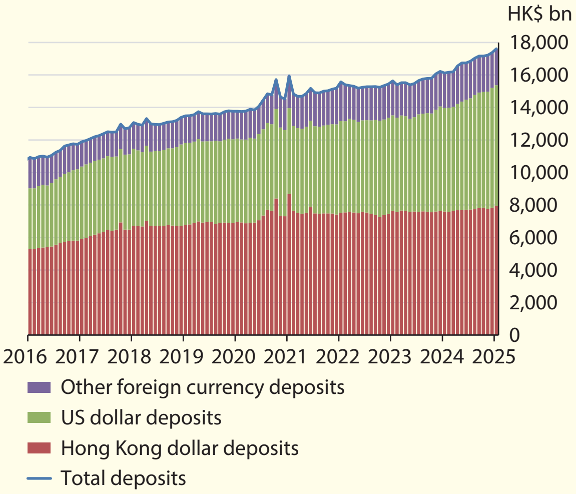
Going forward, rising trade tensions between the US and its major trading partners and heightened uncertainty surrounding the US interest rate outlook may increase fund flows volatility. However, with its ample foreign reserves position and robust financial system, Hong Kong has the ability to withstand the volatilities in fund flows without compromising its financial stability.

4.2 Monetary environment and interest rates

Hong Kong's monetary environment stayed accommodative during the review period. The HKD Monetary Base remained sizeable and broadly stable, at HK$1,975.9 billion as at the end of February 2025.

During the seven-month period since end-June 2024, total deposits with authorized institutions (AIs) increased by 5.2%. Among the total, HKD and foreign currency deposits increased by 3.0% and 7.1% respectively (Chart 4.4). It should be noted that monetary statistics are subject to volatility due to a wide range of transient factors, such as seasonal and initial public offering (IPO) related funding demand as well as business and investment related activities. Therefore, it is more appropriate to observe the longer-term trends.

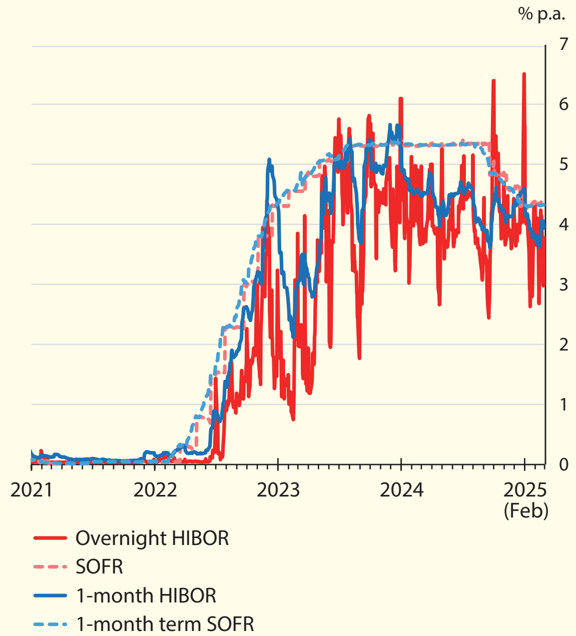
Chart 4.4
Deposits with authorized institutions (AIs) by currency



Source: HKMA.

Overall, Hong Kong's interbank market continued to trade in a smooth and orderly manner during the review period. In accordance with the expectation and the design of the Linked Exchange Rate System (LERS), HKD interbank interest rates generally tracked their USD counterparts[40] while shorter-tenor rates were also being affected by local supply and demand. Short-term HIBORs tightened temporarily in late September 2024 due to buoyant equity market and quarter-end funding demand. In view of the pick-up of payment flows as the capital market turned vibrant, the HKMA temporarily extended the operating hours of the Real Time Gross Settlement (RTGS) systems for several days as precautionary measures, allowing more time for banks to process payments and manage funding for client flows in late hours. Short-term HIBORs firmed up again amid thinner liquidity ahead of the 2024 year-end, and then softened in early 2025 as seasonal liquidity tightness eased (Chart 4.5).

Chart 4.5
Hong Kong Interbank Offered Rates (HIBORs) and US dollar Secured Overnight Financing Rates (SOFRs)



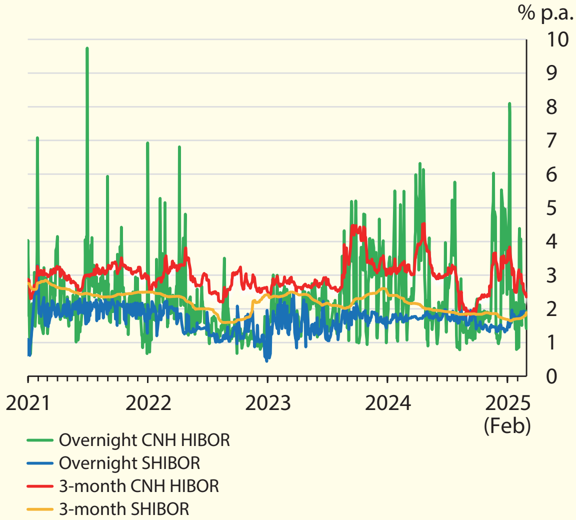
Sources: Bloomberg and HKMA.

On the retail front, following the US policy rate cuts, many banks reduced their Best Lending Rates three times or by a total of 62.5 basis points from September to December 2024. At the end of the review period, the Best Lending Rates in the market ranged from 5.25%-5.75%. Meanwhile, the average lending rate for new mortgages decreased from 4.14% in July 2024 to 3.51% in January 2025. Banks will decide when and by how much to adjust their lending and savings rates, taking into account factors such as funding supply and demand in the interbank market, the level of interbank rates and their own funding cost structures.

[40] The USD London Interbank Offered Rate (LIBOR) has been discontinued since 1 July 2023 and replaced by the Secured Overnight Financing Rate (SOFR) as its alternative reference rate.

In the near term, HKD interest rates may remain at relatively high levels. The HKMA continues to closely engage with banks, reminding them to properly manage their liquidity, including keeping in close contact with their large clients to understand their HKD funding plans and arrangements. This helps banks to plan and avoid any hoarding of HKD. The HKMA has also reminded banks not to be concerned about the perceived "stigma effect" of tapping into its liquidity facilities. Indeed, banks should feel free to use the HKMA's various liquidity facilities whenever required. The recent use of the Discount Window shows that banks are adapting to changing market developments and are willing to make good use of these liquidity facilities.

Chart 4.6
Overnight and 3-month offshore renminbi (CNH) HIBOR fixings



Sources: CEIC and Treasury Markets Association.

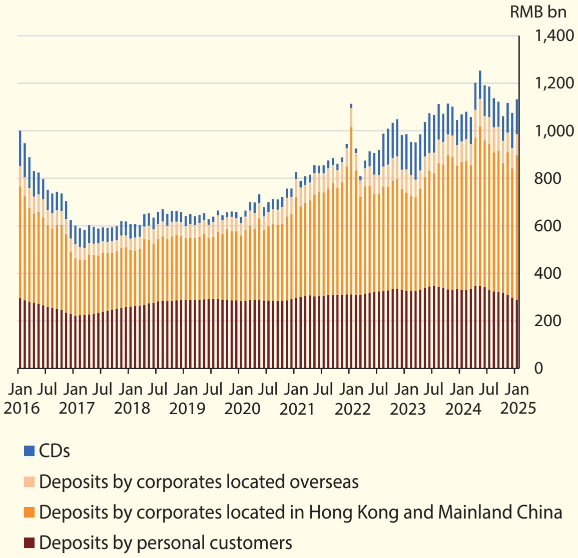
Offshore RMB banking business

The offshore renminbi (CNH) interbank market continued to function normally during the review period.[41] The three-month CNH HIBOR rose above 3% in November 2024 amid an increase in funding demand. While the overnight CNH HIBOR witnessed some fluctuations, it mostly traded below 6% (Chart 4.6). Liquidity conditions in the CNH interbank market remained broadly stable over the review period.

Following the expansion in the first half of 2024, Hong Kong's CNH liquidity pool declined modestly during the review period. The total outstanding amount of renminbi (RMB) customer deposits and certificates of deposit (CDs) decreased by 4.5% in the six-month period since the end of July 2024 to RMB1,131.8 billion at the end of January 2025 (Chart 4.7 and Table 4.A). Among the total, RMB customer deposits fell by 6.7%, mainly led by a decline in personal customers' deposits. Meanwhile RMB CDs expanded, increasing by 13.2% during the same period.

41 See section 2.2 of Chapter 2 for the development of offshore and onshore renminbi exchange rates.

Chart 4.7
Renminbi customer deposits and certificates of deposits (CDs) in Hong Kong



Source: HKMA.

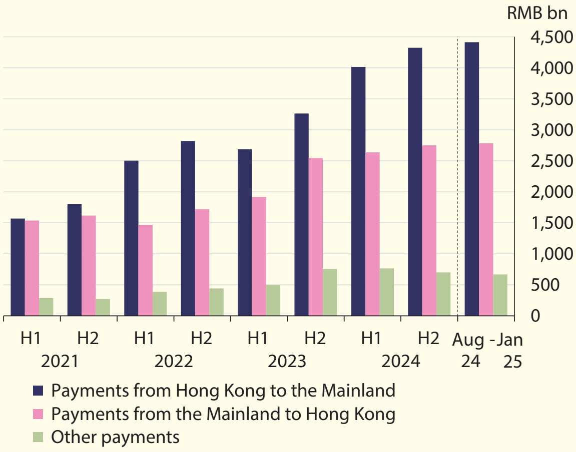
Table 4.A
Offshore renminbi banking statistics

	Dec 2023	Jan 2025
Renminbi deposits & CDs (RMB bn)	1,045.3	1,131.8
Of which:		
Renminbi deposits (RMB bn)	939.2	986.8
Share of renminbi deposits in total deposits (%)	6.3	6.0
Renminbi CDs (RMB bn)	106.1	145.0
Renminbi outstanding loans (RMB bn)	441.2	744.9
Number of participating banks in Hong Kong's renminbi clearing platform	208	206
Amount due to overseas banks (RMB bn)	121.7	143.3
Amount due from overseas banks (RMB bn)	114.5	119.9
	2023	**2024**
Renminbi trade settlement in Hong Kong (RMB bn)	11,668.6	15,184.6
Of which:		
Inward remittances to Hong Kong (RMB bn)	4,462.9	5,384.5
Outward remittances to Mainland China (RMB bn)	5,951.2	8,336.3
Turnover in Hong Kong's RMB real time gross settlement (RTGS) system (Daily average during the period; RMB bn)	2,063.6	3,097.5

Source: HKMA.

Other CNH business continued to grow. The outstanding aggregate amount of RMB loans expanded by 27.4% in the six-month period from July 2024. Hong Kong's RMB trade settlements also continued to pick up. Transactions handled by banks in Hong Kong amounted to RMB7,865.7 billion between end-July and end-January 2025 (Chart 4.8), up by 13.3% compared with RMB6,943.1 billion during the same period last year, with outward trade remittances to the Mainland increasing more than inward trade remittances to Hong Kong. The deep RMB liquidity pool in Hong Kong and the capabilities and extensive network of Hong Kong banks continued to support a large volume of RMB payments and financing transactions. For 2024 as a whole, the average daily turnover of the RMB RTGS system stayed high at RMB3,097.5 billion, compared with RMB2,063.6 billion recorded in 2023.

Chart 4.8
Flows of renminbi trade settlement payments



Source: HKMA.

Moving forward, the continuing development of Hong Kong's CNH ecosystem will further reinforce Hong Kong's role as the leading CNH business hub. On liquidity, the HKMA's new RMB Trade Financing Liquidity Facility, which was launched in February 2025, will further enhance the liquidity of Hong Kong's CNH market by providing banks with a stable source of relatively lower-cost RMB funds to support trade finance services. On products, the continuous efforts to upgrade and expand the family of Connect schemes between the Mainland and Hong Kong[42], which include Swap Connect, Stock Connect, Bond Connect, and Cross-boundary Wealth Management Connect, will widen the spectrum of RMB products and tools available for asset allocation and risk management, facilitating greater two-way traffic between the two markets. As for financial infrastructure, CMU OmniClear[43] and Hong Kong Exchanges and Clearing Limited (HKEX) signed a Memorandum of Understanding (MOU) in March 2025 to deepen their collaboration in enhancing the post-trade securities infrastructure of Hong Kong's capital markets, and will explore and pursue cooperation in areas such as expanding the use of Mainland bonds as collateral. The HKMA and the PBoC are working closely together to implement the linkage of faster payment systems in the Mainland and Hong Kong (i.e. the Mainland's Internet Banking Payment System (IBPS) and Hong Kong's Faster Payment System (FPS)), supporting broader economic cooperation and exchange between the two places. With these developments, Hong Kong will continue to play a unique role in supporting Mainland's capital account opening, as well as the Guangdong-Hong Kong-Macao Greater Bay Area and the Belt and Road initiatives.

[42] The HKMA and the PBoC announced new policy measures to deepen the financial market connectivity between Hong Kong and the Mainland, and consolidate Hong Kong's status as the global CNH business hub. For details, see the press release "New Measures to Deepen Financial Cooperation between Hong Kong and the Mainland" on 13 January 2025. (https://www.hkma.gov.hk/eng/news-and-media/press-releases/2025/01/20250113-4/)

[43] CMU OmniClear was established in October 2024 to operate the Central Moneymarkets Unit (CMU) on behalf of the HKMA, and is a wholly-owned subsidiary of the Exchange Fund.

Asset markets

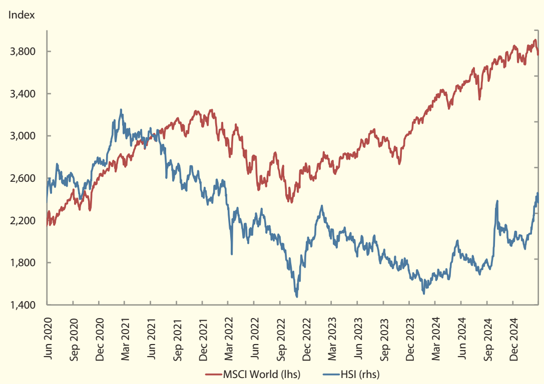
The Hong Kong equity market experienced substantial growth during the review period, driven by the Mainland's supportive policy measures, the first interest rate cut by the US Federal Reserve (Fed) in more than four years, and the positive market sentiment following China's recent advancements in A.I.. Despite volatility in interest rates, new issuances of CNH debt securities in Hong Kong and HKD debt securities continued to grow steadily in 2024. Housing prices showed signs of stabilisation following the commencement of the interest rate cut cycle in September 2024, while the commercial real estate market remained under pressure.

4.3 Equity market

The Hong Kong equity market rose notably between September and early October 2024, driven by the Mainland's supportive policy measures and the first interest rate cut by the US Fed in more than four years (Chart 4.9). Although the local equity market softened subsequently, it performed strongly from the middle of January 2025, boosted by the positive market sentiment following China's recent advancements in A.I.. Meanwhile, after being on an upward trajectory for most of the review period, the global equity market encountered a notable correction in late February 2025 due to concerns over economic outlook and the impact of US's trade policies. From the end of August 2024 to the end of February 2025, the Hang Seng Index surged by 27.5%, outperforming the MSCI World Index, which rose moderately by 3.9% during the same period.

Volatility in the local equity market picked up in early October 2024 alongside the sharp rise in the Hang Seng Index (the blue line in Chart 4.10). The option-implied volatilities of the S&P 500 Index fluctuated and rose notably in mid-December 2024 amid market concerns over a slower pace of US interest rate cuts in 2025. Meanwhile, the SKEW Index remained at a high level despite experiencing substantial fluctuations, reflecting that investors remained cautious of abrupt equity market corrections on concerns over stretched asset valuation[44].

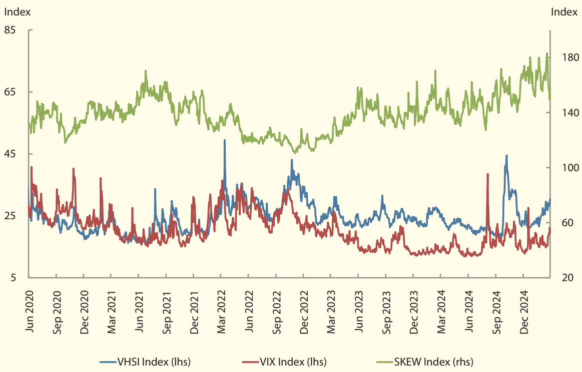
Chart 4.9
The Hang Seng Index and the MSCI World Index



Source: Bloomberg.

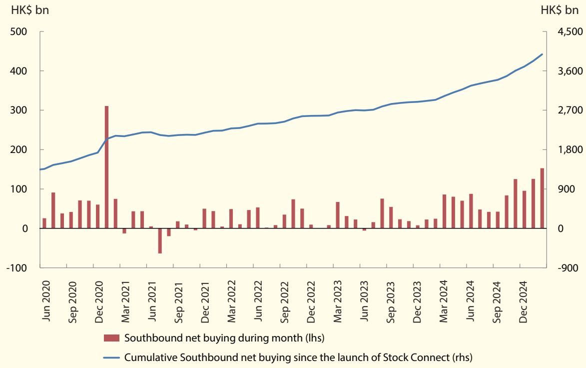
[44] The SKEW Index is calculated by the Chicago Board Options Exchange from the prices of the S&P 500 out-of-the-money options. A SKEW value of 100 means that the probability of outlier negative returns on a 30-day horizon is negligible. As the SKEW rises above 100, the left tail of the S&P 500 returns distribution acquires more weight, suggesting that the probability of outlier negative returns has become more significant. For details, see https://www.cboe.com/products/vix-index-volatility/volatility-indicators/skew.

Chart 4.10
Option-implied volatilities of the Hang Seng Index (VHSI Index) and the S&P 500 Index (VIX Index), and the SKEW Index



Source: Bloomberg.

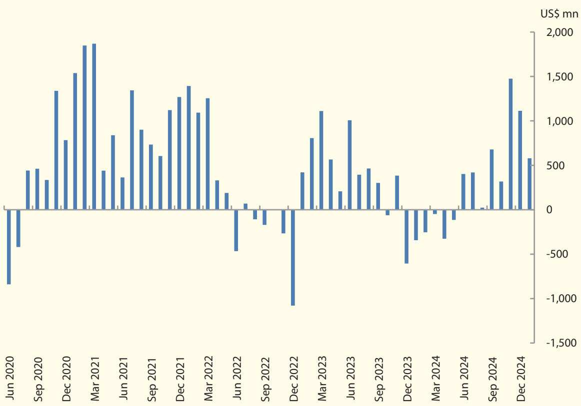
Chart 4.12
Net buying through Southbound Stock Connect over time



Note: Southbound net buying is the sum of such buying on the Shanghai-Hong Kong Stock Connect and the Shenzhen-Hong Kong Stock Connect.
Sources: CEIC and HKMA staff estimates.

The local equity market registered net inflows through equity market funds between August 2024 and January 2025, with the amount of net inflows totaling US$4,187.9 million (Chart 4.11).

Chart 4.11
Equity market fund flows into Hong Kong



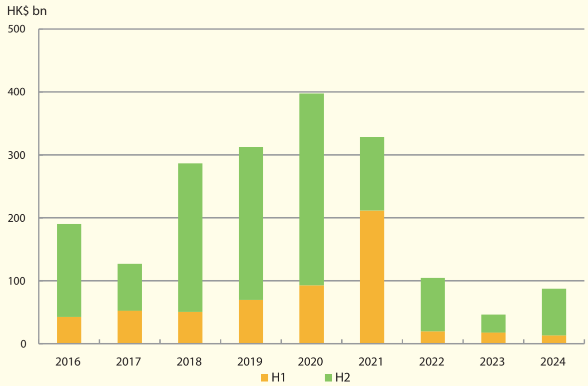
Source: EPFR Global.

There were steady net inflows into the local equity market through the Southbound Stock Connect, with net buying by Mainland investors amounting to HK$625.0 billion from the end of August 2024 to the end of February 2025 (Chart 4.12). The cumulative Southbound net buying amount since the launch of Stock Connect increased by 18.6% during the review period and stood at HK$3,976.9 billion at the end of February 2025.

Primary market activity in Hong Kong experienced a strong rebound in the second half of 2024. For 2024 as a whole, the amount of funds raised through IPOs increased by 89% from 2023 to reach HK$87.5 billion (Chart 4.13), making Hong Kong one of the world's top four IPO venues in 2024.

In October 2024, the Hong Kong Exchanges and Clearing Limited, together with the Securities and Futures Commission, announced an enhanced timeframe for the new listing application process. The initiative, which also features an accelerated processing timeframe for eligible companies listed in Mainland China, will provide greater certainty and transparency for potential applicants and their advisers in formulating their listing plans.

Chart 4.13
IPO market in Hong Kong



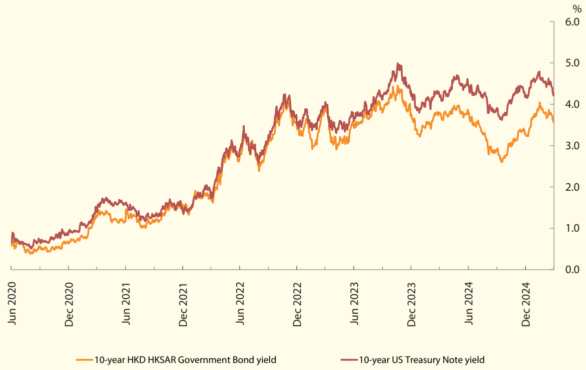
Source: Hong Kong Exchanges and Clearing Limited.

Developments in the external environment will continue to influence the performance of the local equity market. Changes in fiscal and trade policies under the new US administration may lead to higher uncertainties over inflation risks and thus the future trajectory of interest rates in the US. This could have significant implications for capital flows in the global financial market. Additionally, the potential resurgence of trade tensions and growing geoeconomic fragmentation could pose downside risks to the global financial market, including Hong Kong's equity market.

4.4 Debt market[45]

Despite the interest rate cut by the US Fed in September 2024, the first in over four years, the yield of the US 10-year Treasury Notes reversed its downward trend and rose from the middle of September (Chart 4.14) on concerns over rising inflation risks in the US under the new US administration. The yield declined notably in February 2025 as soft economic data sparked concerns over the US economic outlook. The yield of the 10-year HKD Hong Kong Special Administrative Region Government (HKSAR Government) Bond mirrored the movements of its US counterpart.

Chart 4.14
Yields of US 10-year Treasury Notes and 10-year HKD HKSAR Government Bond

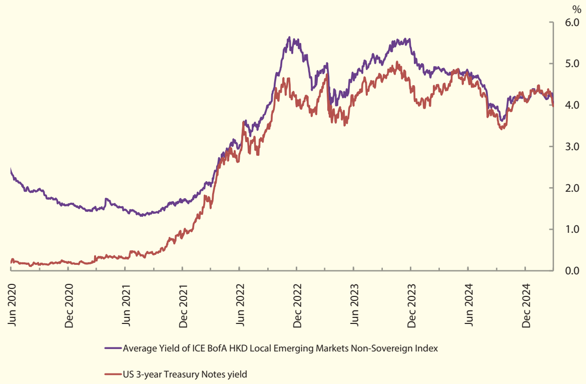


Note: Starting from 15 January 2025, the yield of the 10-year HKD HKSAR Government Bond refers to the yield of the benchmark 10-year HKD Bond issued under the Infrastructure Bond Programme and Government Sustainable Bond Programme. Before this date, the yield refers to the benchmark 10-year HKD Bond issued under the Government Bond Programme.

Sources: Bloomberg and HKMA.

The average yield of HKD corporate bonds also followed the movements of the yield of the US Treasury Notes of similar maturity, maintaining a narrow yield spread since 2024 (Chart 4.15).

Chart 4.15
Yields of US 3-year Treasury Notes and HKD corporate bonds



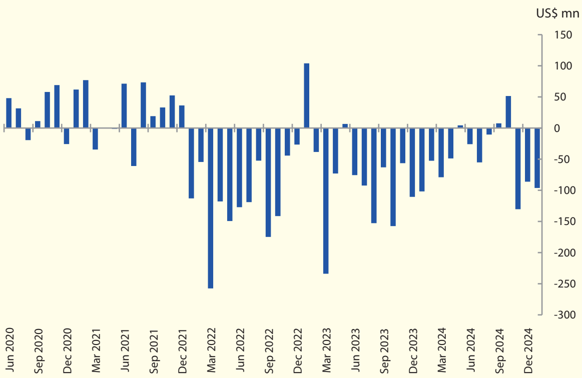
Notes: The ICE BofA HKD Local Emerging Market Non-Sovereign Index, which covers HKD bonds issued by corporates and quasi government entities, captures the movement in yields of HKD corporate bonds. The average effective duration of the ICE BofA HKD Local Emerging Market Non-Sovereign Index is around 3 years.

Sources: ICE Data Indices and Bloomberg

[45] Debt securities statistics reported in this section include bills, bonds, notes, negotiable certificates of deposit, commercial paper, debentures, asset-backed securities, and similar instruments normally traded in the financial markets that serve as evidence of a debt. Figures of outstanding amounts of debt securities are estimated based on the maturity date of individual debt securities issued. The estimations take into account early redemptions if sufficient information is available. Figures of outstanding amounts of debt securities may be subject to overestimation. All debt securities figures are subject to revision.

There were net outflows from Hong Kong by bond market funds between August 2024 and January 2025 (Chart 4.16).

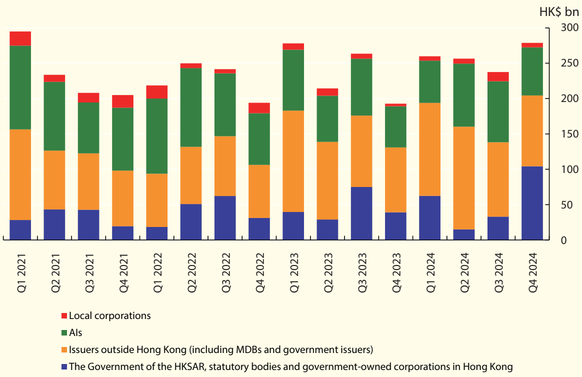
Chart 4.16
Bond market fund flows into Hong Kong



Source: EPFR Global.

The total issuance of HKD debt in the whole year of 2024 increased by 4.2% year-on-year to HK$5,135.1 billion. The issuance of non-Exchange Fund Bills and Notes (EFBN) HKD debt securities rose by 8.8% year-on-year to HK$1,032.5 billion (Chart 4.17).

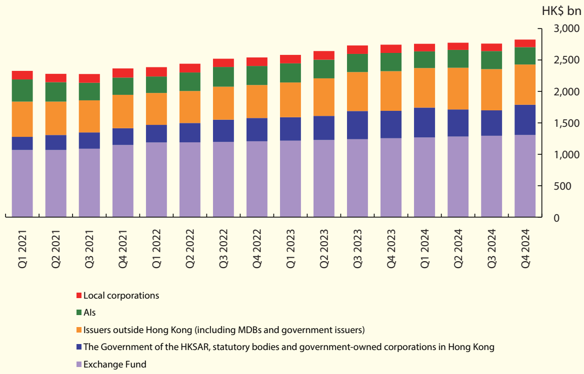
Chart 4.17
New issuance of non-EFBN HKD debt securities



Source: HKMA staff estimates based on data from Bloomberg, CMU, Dealogic and Reuters.

The outstanding amount of HKD debt securities increased by 3.0% year-on-year to HK$2,825.1 billion at the end of 2024 (Chart 4.18). This amount was equivalent to 33.3% of HKD M3, and 28.2% of the HKD-denominated assets of the banking sector. Meanwhile, the outstanding amount of non-EFBN HKD debt securities increased by 2.1% year-on-year to HK$1,518.4 billion at the end of 2024.

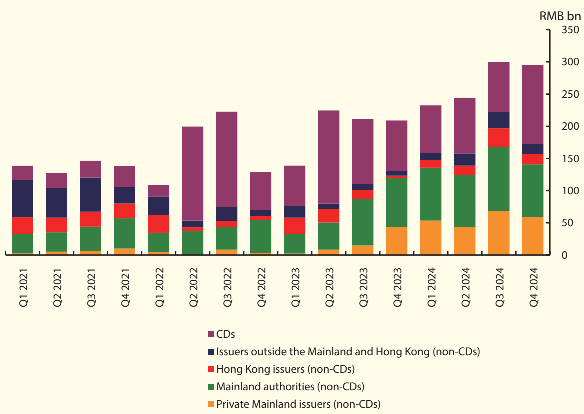
Chart 4.18
Outstanding HKD debt securities by issuer



Source: HKMA staff estimates based on data from Bloomberg, CMU, Dealogic and Reuters.

The issuance of CNH debt securities in Hong Kong rose by 36.7% year-on-year to RMB1,071.6 billion in 2024 (Chart 4.19). This was mainly driven by the issuance of debt securities other than certificates of deposit (CDs), the issuance of these securities recorded a year-on-year increase of 79.4% to RMB710.8 billion. The total outstanding amount of CNH debt securities issued in Hong Kong grew by 36.0% year-on-year to RMB1,264.4 billion at the end of 2024.

Chart 4.19
New issuance of CNH debt securities in Hong Kong



Source: HKMA staff estimates based on data from Bloomberg, CMU, Dealogic and Reuters.

The near-term outlook of the HKD debt market will continue to be influenced by the interest rate paths of major advanced economies. The recent narrowing of the yield spread between HKD corporate bonds and US Treasury Notes (see Chart 4.15) may support HKD bond issuance.

Meanwhile, the CNH debt market in Hong Kong will be shaped by the monetary policies of Mainland China and the US, as well as by RMB exchange rates. In particular, a moderately loose monetary policy in Mainland China in 2025 could benefit CNH debt securities issuance in Hong Kong.

During the review period, policy initiatives were introduced to foster local debt market developments. On 11 September 2024, the Hong Kong Mortgage Corporation Limited announced the successful completion of its second infrastructure loan-backed securities issuance, with a total value of approximately US$423.3 million. The issuance further supports the development of Hong Kong as an infrastructure financing hub, facilitating inflows of market capital to high-quality infrastructure projects, and expanding the securitisation market in Asia.

In addition, the People's Government of Guangdong Province issued RMB 5 billion worth of CNH bonds in Hong Kong for the first time on 20 September 2024. The issuance further solidifies Hong Kong's position as a global offshore RMB business hub, contributes to the prudent and solid advancement of RMB internationalisation, and enables the GBA to better serve as the momentum for high-quality development.

On 28 November 2024, the HKMA launched the Digital Bond Grant Scheme (DBGS), which was announced in the 2024 Policy Address. The DBGS aims to promote the development of the digital securities market and encourage broader adoption of tokenisation technology in capital market transactions.

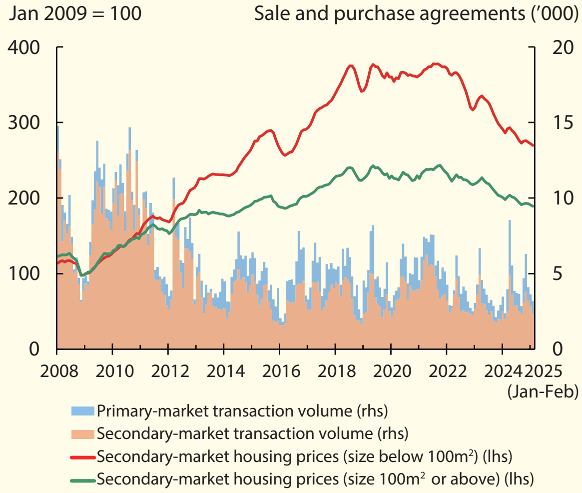
To promote the development of the bond markets in Hong Kong and Macao, the HKMA and the Monetary Authority of Macao (AMCM) jointly announced on 21 January 2025 the official launch of the direct linkage between the CMU operated by CMU OmniClear Limited (a subsidiary of the Exchange Fund), and the central securities depository operated by Macao Central Securities Depository and Clearing Limited, a subsidiary of the AMCM. The connection between the bond market infrastructures in Hong Kong and Macao will provide a cross-border investment and financing channel, enabling investors from both markets to participate in each other's bond market with greater ease and efficiency. The direct linkage also signifies a new milestone in financial cooperation between Hong Kong and Macao, leveraging the strengths of both regions and demonstrating the synergistic development of the GBA.

4.5 Property markets

Residential property market

The residential property market was subdued in the third quarter of 2024, before regaining momentum after the initiation of the interest rate cut cycle in September 2024. Flat-viewing activities and market transactions increased, while property developers also stepped up new launches alongside improved market sentiment. As a result, average monthly housing transactions saw a significant increase, rising from 3,408 units in the third quarter to 5,033 units in the fourth quarter. For 2024 as a whole, total housing transactions rebounded to 53,099 units from 43,002 units in the preceding year (Chart 4.20).

Chart 4.20
Residential property prices and transaction volumes

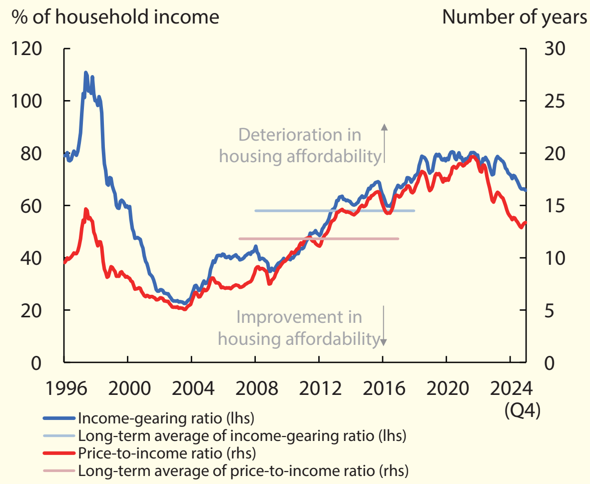


Sources: R&VD and Land Registry.

Amid continued adoption of competitive pricing strategies by developers in launching new projects, secondary-market housing prices remained under pressure in the second half of 2024 despite signs of stabilisation towards the end of the year for both large flats (with a saleable area of $100m^2$ or above) and small-and-medium-sized flats (with a saleable area of less than $100m^2$) (Chart 4.20). For the full year of 2024, residential property prices fell by 7.1%, the third consecutive year of decline. Entering into 2025, housing prices recorded a mild decline of 1.6% in the first two months of the year, while transaction volumes edged down in January and February partly due to softened market sentiment amid concerns over a slower pace of US Fed interest rate cuts and the holiday effect. Nevertheless, the market turned active in early March following the adjustments to stamp duties for properties at lower values as announced in the 2025–26 Budget[46].

Housing affordability, despite remaining stretched, saw further improvement in the second half of 2024. Reflecting the downward adjustment of housing prices during the period, the housing price-to-income ratio decreased to 13.4 as at the end of December 2024. Meanwhile, the income gearing ratio also eased slightly to 65.8% alongside the decrease in interest rates, albeit still remaining above the long-term average (Chart 4.21).[47] In the leasing market, housing rentals rose by 3.4% in 2024 and continued to rise in early 2025 (Chart 4.22), driving residential rental yields up to 3.2% in January 2025.

Chart 4.21
Indicators of housing affordability

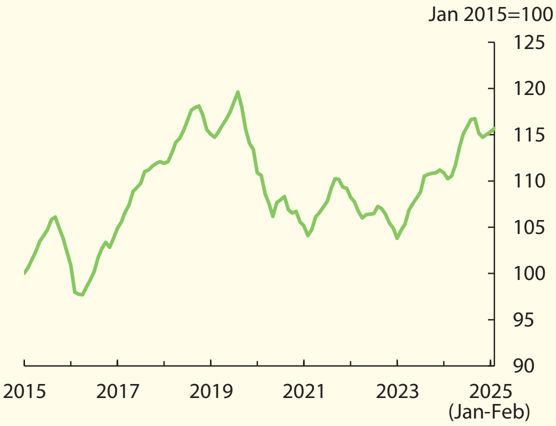


Sources: R&VD, C&SD and HKMA staff estimates.

[46] In the 2025–26 Budget, the Government announced that the maximum value of properties chargeable to a stamp duty of HK$100 would be raised from HK$3 million to HK$4 million with effect from 26 February 2025.

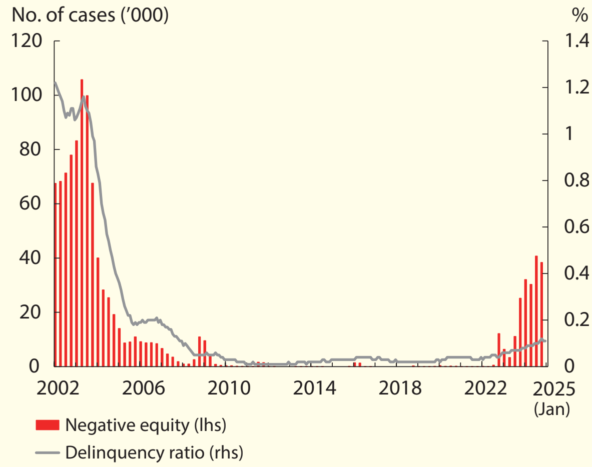
[47] The price-to-income ratio measures the average price of a typical $50m^2$ flat relative to the median income of households living in private housing. The income-gearing ratio compares mortgage payments for a typical $50m^2$ flat (under a 20-year mortgage scheme with a 70% loan-to-value ratio) to the median income of households living in private housing. The income-gearing ratio is not the same as a borrower's actual debt-servicing ratio, which is subject to a maximum cap under HKMA prudential measures.

Chart 4.22
Residential property rental index



Source: R&VD.

Chart 4.23
Negative equity and mortgage delinquency ratio



Source: HKMA.

Reflecting the movements in housing prices, the estimated number of residential mortgage loans (RMLs) in negative equity retreated to 38,389 cases at the end of December 2024 after rising to 40,713 cases at the end of September 2024 (Chart 4.23). These cases were mainly related to bank staff housing loans or RMLs under the Mortgage Insurance Programme, which generally have a higher LTV ratio. In addition, the mortgage delinquency ratio of all the outstanding RMLs stayed low at 0.12% in January 2025[48], suggesting that the systemic risks relating to banks' RMLs are being effectively managed through prudent underwriting standards. On the other hand, since the commencement of the US interest rate cut cycle in September 2024, local major banks have adjusted their Best Lending Rates downwards by a total of 62.5 basis points. As a result, the average mortgage interest rate for new loans fell to around 3.51% in January 2025, easing the debt-servicing burden of mortgage borrowers (see also section 4.2).

Taking into account the latest market developments and the stability of the banking system, the HKMA further adjusted the countercyclical macroprudential measures for property mortgage loans on 16 October 2024 by standardising the maximum LTV ratio and the debt-servicing ratio (DSR) limit at 70% and 50%, respectively, for all properties, having considered that there was room for the adjustments while continuing to maintain banking stability and ensuring the proper risk management of property mortgage loans.[49] Notwithstanding these adjustments, the average LTV ratio and DSR for new mortgages remained at about 61% and 39% respectively in January 2025. The HKMA considers that the Hong Kong banking sector continues to have ample buffers to cope with any challenges that may arise from a sharp correction in property prices.

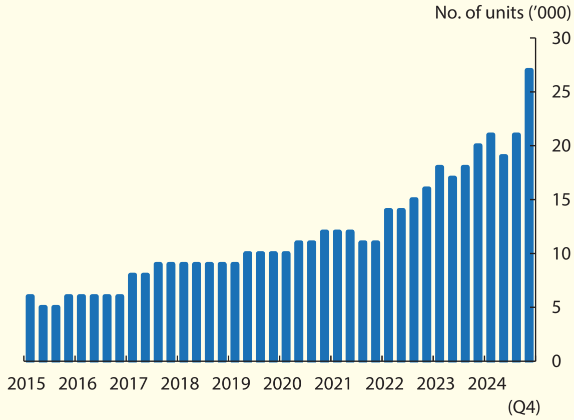
48 The delinquency ratio of RMLs in negative equity also remained at a low level of 0.15% at the end of December 2024.

49 The adjustments effective from 16 October 2024 include: (i) setting the maximum LTV ratio for all residential properties at 70%, regardless of the value of the property and whether it is for self-occupation; (ii) adjusting the maximum LTV ratio for net-worth based mortgage loans from 60% to 70%; (iii) adjusting the DSR limit for non-self-use properties from 40% to 50%; and (iv) lifting the requirement to lower the applicable maximum LTV ratio and DSR limit by 10 percentage points for mortgage applicants who have borrowed or guaranteed other outstanding mortgages. For details, see the circular "Prudential Measures for Property Mortgage Loans" issued by the HKMA on 16 October 2024.

To further assist stage payment homebuyers who bought uncompleted residential properties during 2021 to 2023 to complete their transactions, while continuing to ensure the proper risk management of banks' property mortgage lending business, the HKMA also introduced a one-off special scheme on 4 December 2024, allowing banks to provide mortgage loans with a maximum LTV ratio of 80% and a DSR limit of 60% to eligible homebuyers.[50] The HKMA will continue to monitor market developments closely and introduce measures to safeguard banking stability as conditions in the property market evolve.

The residential property market outlook is clouded by multiple uncertainties and risks. On the one hand, the accumulated inventories in the primary market[51] (Chart 4.24), coupled with growing uncertainty surrounding the pace of the US Fed's interest rate cuts, may continue to pose headwinds to housing prices in the near term. On the other hand, the Government's ongoing policies to attract businesses and talents should provide some support for housing demand.[52] Over the longer term, the outlook for the housing market will depend on the supply-demand gap. The Government projects that private housing supply will remain abundant in the coming years.[53]

Chart 4.24
Unsold units in completed projects



Source: Housing Bureau.

Commercial real estate market[54]

The commercial real estate market remained lacklustre in the second half of 2024. The average monthly transaction volume increased to a still low level of 292 units during the period, up from 264 units in the first half of 2024. Meanwhile, speculative activities also remained subdued (Chart 4.25). In line with the muted market sentiment, prices for office spaces, retail premises and flatted factories continued to decline throughout 2024 and into the first month of 2025 (Chart 4.26). In the leasing market, rentals generally remained soft, although rental yields across all three segments edged up to 3.4%–3.9% in January 2025 (Chart 4.27).

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50 The special scheme covers uncompleted residential properties for self-occupation where the provisional sale and purchase agreements were signed during the period from 1 January 2021 to 31 December 2023 and the buyers had opted for stage payment plans, with the property valuation at the time of mortgage application being lower than the purchase price. For details, see the circular "Prudential Measures for Property Mortgage Loans" issued by the HKMA on 4 December 2024.

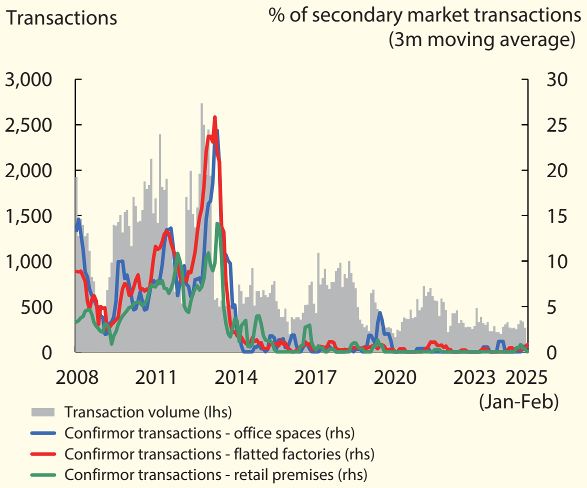
51 There were around 27,000 unsold units in completed projects as of the end of 2024. If uncompleted projects with pre-sale consents and those applying for pre-sale consents are also included, the outstanding inventory in the primary market amounted to around 46,000 units as of the end of 2024.

52 In the 2024 Policy Address, the Government announced enhancements to the various talent admission schemes and the New Capital Investment Entrant Scheme (CIES). With effect from 16 October 2024, investment in one single residential property with a transaction price of no less than HK$50 million can be counted as eligible investments under the New CIES, with the amount of real estate investment to be counted towards the total capital investment capped at HK$10 million. Furthermore, various enhancement measures, including relaxing the net asset assessment and calculation requirement, as well as allowing investments made through an eligible private company wholly owned by an applicant to be counted towards the applicant's eligible investment, have taken effect from 1 March 2025.

53 According to the Housing Bureau, the potential first-hand private housing supply for the next three to four years will remain elevated at around 107,000 units as estimated at the end of 2024.

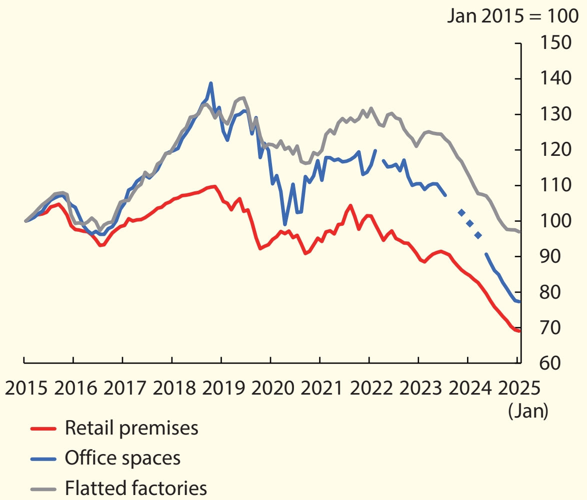
54 Commercial real estate refers to office spaces, retail premises and flatted factories.

Chart 4.25
Transactions in commercial real estates



Sources: R&VD and Centaline Property Agency Limited.

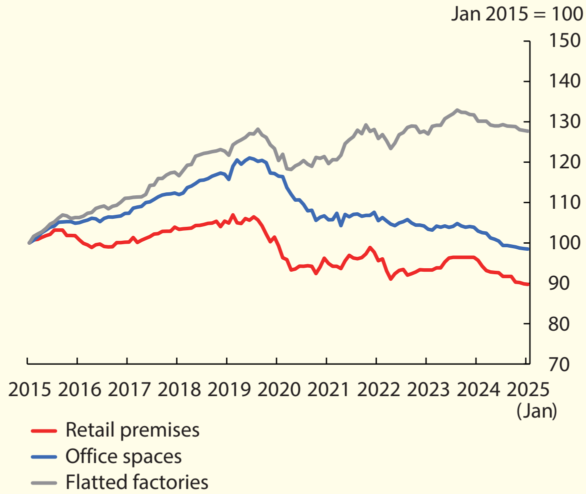
Chart 4.26
Commercial real estate price indices



Note: The price index of office spaces could not be compiled in certain months due to insufficient transaction data.

Source: R&VD.

Chart 4.27
Commercial real estate rental indices



Source: R&VD.

Looking ahead, the commercial real estate market is expected to face ongoing challenges, particularly in the office segment, given elevated vacancy rates[55] amid ample supply in recent years, as well as the prevalence of remote working. Meanwhile, shifts in consumption patterns among visitors and residents may persist, weighing on the performance of the retail premises segment. Nevertheless, some support may be provided to the market from the supportive measures introduced by the Mainland authorities to boost Hong Kong's tourism sector[56], as well as Mainland's economic stimulus measures. In view of the high vacancy rates of offices in recent years and the relatively ample supply in the next few years, the Government announced in the 2025–26 Budget the suspension of commercial site sales in the upcoming fiscal year, as well as the consideration of rezoning some of the commercial sites into residential use and allowing greater flexibility of land use.

55 Market data from surveyor firms indicates that Grade A office vacancy rates remained high at 13.3% in February 2025.

56 These measures include the resumption of the multiple-entry IVS, the increase in the number of IVS applicable cities, and the increase in the duty free shopping allowance for Mainland tourists.

5. Banking sector performance

Retail banks registered higher profits in the second half of 2024 compared to the same period in 2023. With credit demand remaining subdued amid a still relatively high interest rate environment, bank credit declined moderately during the review period. The classified loan ratio increased during the second half of 2024, but the overall asset quality of the banking sector remained manageable. Overall, the Hong Kong banking sector remained robust and resilient, underpinned by strong capital and liquidity buffers. Looking ahead, uncertainties surrounding US trade policies and the future path of US interest rates may pose challenges to the Hong Kong banking sector on various fronts. Banks should remain vigilant and carefully assess the potential impacts of these risk factors on the asset quality of their loan portfolios.

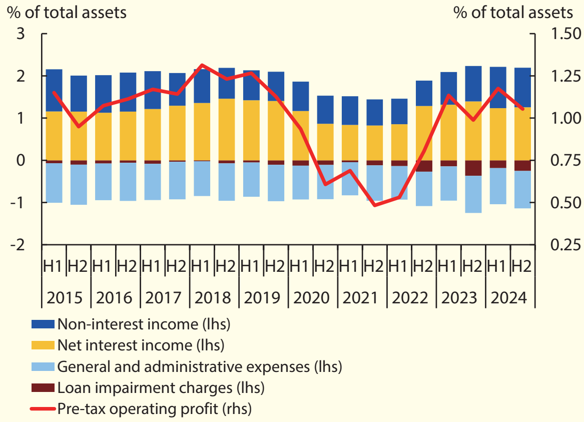
5.1 Profitability and capitalisation

Profitability

The aggregate pre-tax operating profit of retail banks[57] grew by 10.9% in the second half of 2024 compared with the same period in 2023. This was mainly attributable to increases in income from investment held for trading as well as income from foreign exchange and derivatives operations. A decrease in loan impairment charges also contributed to the improvement (Chart 5.1). These factors helped offset the decline in net interest income, with retail banks' net interest margin narrowing to 1.54% in the second half of 2024 from 1.73% in the same period in 2023 (Chart 5.2). Overall, retail banks' return on assets improved to 1.05% in the second half of 2024, compared with 0.99% in the same period in 2023.

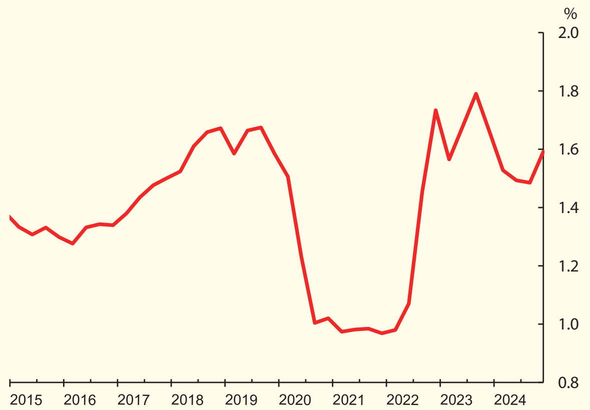
For 2024 as a whole, the aggregate pre-tax operating profit of retail banks increased by 8.4%, while their return on assets rose to 1.12% from 1.06% in 2023.

Chart 5.1
Profitability of retail banks



Note: Annualised semi-annual figures.
Source: HKMA.

Chart 5.2
Net interest margin of retail banks



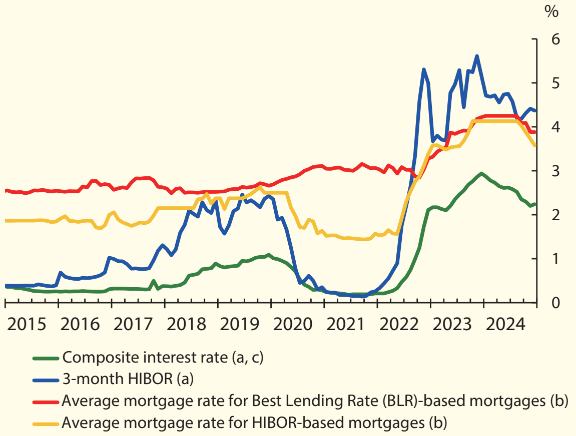
Note: Annualised quarterly figures.
Source: HKMA.

57 Throughout this chapter, figures for the banking sector relate to Hong Kong offices only, unless otherwise stated.

Hong Kong interbank offered rates (HIBORs) generally followed the downward trend of their US dollar (USD) counterparts during the review period, although there was a temporary liquidity tightness in shorter-tenor markets (e.g. 3-month HIBOR) in late 2024 due to seasonal funding demand. On the whole, the 3-month HIBOR decreased by 38 basis points in the second half of 2024 to 4.37% at the end of 2024 (blue line in Chart 5.3).

On the retail front, banks also adjusted their Hong Kong dollar (HKD) savings and time deposit rates alongside decreases in their best lending rates and HIBORs. Reflecting decreases in both wholesale and retail funding costs, the composite interest rate (a measure of the average cost of HKD funds for retail banks) lowered to 2.24% at the end of December 2024 (green line in Chart 5.3).

Chart 5.3
Interest rates

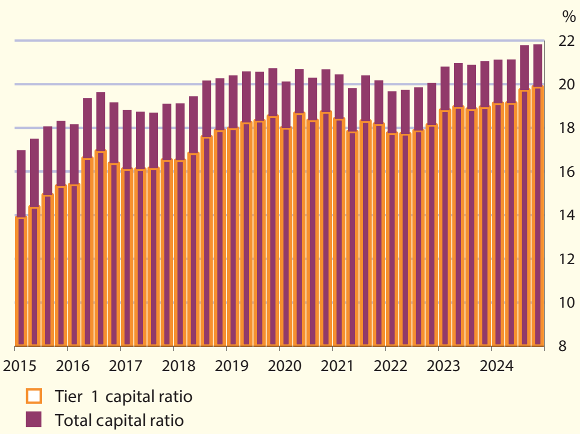


Notes:
(a) End-of-period figures.
(b) Period-average figures for newly approved loans.
(c) Since June 2019, the composite interest rate has been calculated based on the new local "interest rate risk in the banking book" framework. As such, figures from June 2019 onwards are not strictly comparable with those of previous months.
Sources: HKMA and staff estimates.

Capitalisation

The Hong Kong banking sector continued to be well-capitalised. The consolidated total capital ratio of locally incorporated authorized institutions (AIs) stood at a high level of 21.8% at the end of 2024 (Chart 5.4), well above the international minimum requirement of 8%. The Tier 1 capital ratio and the Common Equity Tier 1 (CET1) capital ratio were 19.9% and 17.9% respectively. In addition, the non-risk-based Leverage Ratio[58] of locally incorporated AIs stood at a healthy level of 8.0% at the end of 2024, exceeding the statutory minimum of 3%.

Chart 5.4
Capital positions of locally incorporated authorized institutions



Note: Consolidated basis.
Source: HKMA.

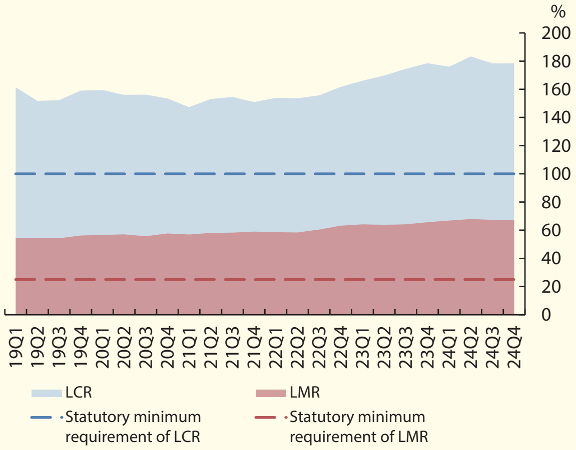
[58] The Basel III non-risk-based leverage ratio requirement acts as a "backstop" to restrict the build-up of excessive leverage in the banking sector. For details, see Banking (Capital) Rules (Cap. 155L).

5.2 Liquidity and interest rate risks

Liquidity and funding

The liquidity positions of the banking sector, as measured by the Basel III Liquidity Coverage Ratio (LCR),[59] remained sound during the review period. The average LCR of category 1 institutions and the average Liquidity Maintenance Ratio (LMR) of category 2 institutions were 178.4% and 67.0% in the fourth quarter of 2024 respectively (Chart 5.5), remaining well above their corresponding statutory minimum requirements of 100% and 25%.

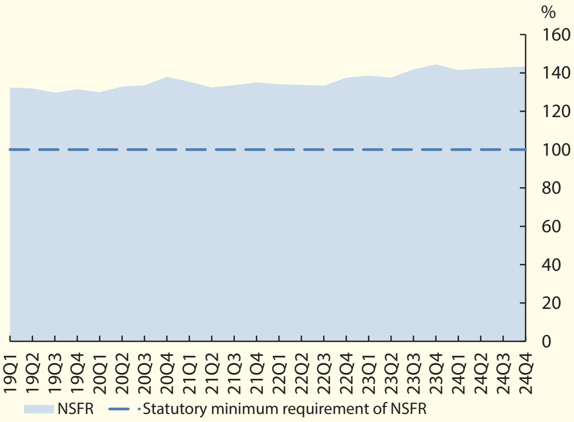
Chart 5.5
Liquidity Coverage Ratio and Liquidity Maintenance Ratio



Notes:
1. Consolidated basis.
2. Quarterly average figures.
Source: HKMA.

Funding positions of AIs also remained stable. The average Net Stable Funding Ratio of category 1 institutions remained at 143.4% at the end of December 2024 (Chart 5.6), well above the statutory minimum requirement of 100%. The average Core Funding Ratio of category 2A institutions also stayed at 186.7%, well above the statutory minimum requirement of 75%. The sound liquidity and funding positions of the Hong Kong banking sector suggest that it is well positioned to withstand liquidity shocks.

Chart 5.6
Net Stable Funding Ratio

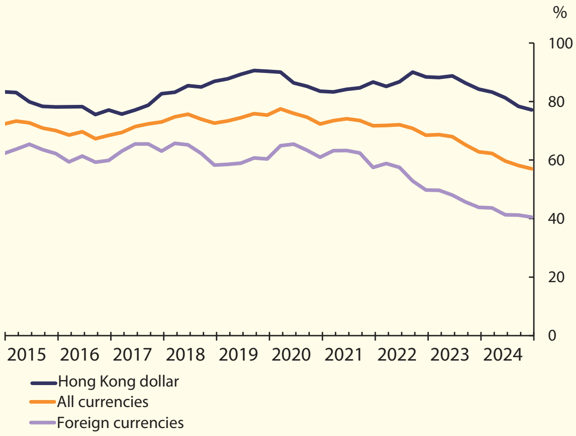


Note: Consolidated basis.
Source: HKMA.

The average all-currency loan-to-deposit (LTD) ratio of all AIs declined further to 57.0% at the end of 2024 from 59.7% at the end of June 2024 (Chart 5.7). The drop in the ratio was attributable to an increase in total deposits and a decrease in total lending during the same review period. The HKD and foreign-currency LTD ratios declined to 77.1% and 40.5% at the end of 2024 respectively, compared with 81.3% and 41.3% six months ago.

[59] The Basel III LCR requirement is designed to ensure that banks have sufficient high-quality liquid assets to survive a significant stress scenario lasting 30 calendar days. In Hong Kong, AIs designated as category 1 institutions adopt the LCR, while category 2 institutions adopt the LMR. For details, see the HKMA's Supervisory Policy Manual (SPM) LM-1, "*Regulatory Framework for Supervision of Liquidity Risk*".

Chart 5.7
Average loan-to-deposit ratios of all authorized institutions



Note: End-of-quarter figures.
Source: HKMA.

Interest rate risk

The interest rate risk exposure of banks in Hong Kong remained at a relatively low level in December 2024. Under a hypothetical shock of an across-the-board 200-basis-point increase in HKD and USD interest rates,[60] it is estimated that the economic value of locally incorporated licensed banks' interest rate positions would decrease by an amount equivalent to 2.75% of their total capital base at the end of December 2024.[61] The relatively moderate impact suggests that banks in Hong Kong are well positioned to withstand interest rate shocks.

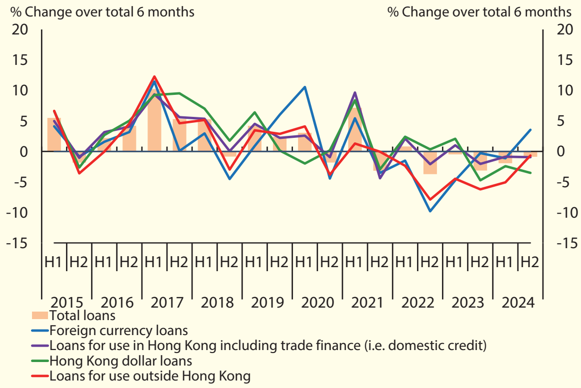
5.3 Credit risk

Overview

Credit demand continued to be subdued in 2024. Total loans and advances of all AIs declined by 2.8% in 2024, following a 3.6% decrease in 2023.

On a half-yearly basis, the total loans and advances of all AIs declined by 0.9% in the second half of 2024, after decreasing by 1.9% in the first half of the year (Chart 5.8). The decline was attributable to decreases in both domestic loans (comprising loans for use in Hong Kong and trade financing) and loans for use outside Hong Kong. Specifically, domestic loans and loans for use outside Hong Kong decreased by 0.9% and 0.7% respectively during the second half of 2024.

Chart 5.8
Loan growth



Note: Since December 2018, figures for loans for use in or outside Hong Kong have been restated to reflect AIs' reclassification of working capital loans. The reported percentage changes over six months for 2019 and onwards are calculated based on the reclassified loan data, while the historical percentage changes until the second half of 2018 are calculated based on the data without such reclassification.
Source: HKMA.

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60 The impact of the interest rate shock refers to its impact on the economic value of the banking and trading book, expressed as a percentage of the total capital bases of banks.

61 This estimation does not take into account the effects of any mitigating actions taken by banks in response to the shock. The impact will be smaller if mitigating action is taken.

Since the commencement of the US interest rate cut cycle in September 2024, banks have become slightly more optimistic about the demand for bank credit in the near-term. According to the results of the HKMA Opinion Survey on Credit Condition Outlook in December 2024, the share of surveyed AIs expecting higher loan demand in the next three months increased to 20% (Table 5.A) from 7% in June 2024, while the share expecting weaker loan demand decreased to 7% from 17%.

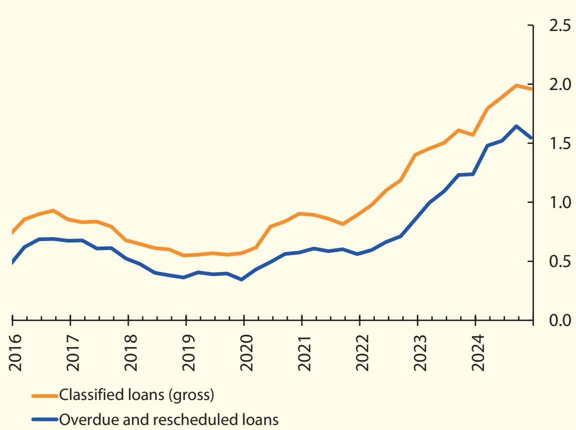
Table 5.A
Expectations of loan demand in the next three months

% of total respondents	Jun-24	Sep-24	Dec-24
Considerably higher	0	0	0
Somewhat higher	7	23	20
Same	77	73	73
Somewhat lower	17	3	7
Considerably lower	0	0	0
Total	100	100	100

Note: Figures may not add up to total due to rounding.
Source: HKMA.

The asset quality of the banking sector deteriorated during the review period, but still remained manageable. The gross classified loan ratio (CLR) of all AIs rose to 1.96% at the end of 2024 from 1.89% at the end of June 2024, hovering around the long-term average of 2%. The ratio of overdue and rescheduled loans of all AIs also rose from 1.52% at the end of June 2024 to 1.55% at the end of 2024 (Chart 5.9).

Chart 5.9
Asset quality of all authorized institutions



Note: Classified loans are those loans graded as "sub-standard", "doubtful" or "loss".
Source: HKMA.

Household exposure[62]

Household debt grew by 0.6% in the second half of 2024, after holding steady in the first half (Table 5.B). A breakdown of the data shows that growth in residential mortgage loans moderated to 0.6% in the second half of 2024. Over the same period, growth in personal loans rebounded to 0.5%, after decreasing by 1.7% in the first half of 2024.

Table 5.B
Half-yearly growth in loans to households by all authorized institutions

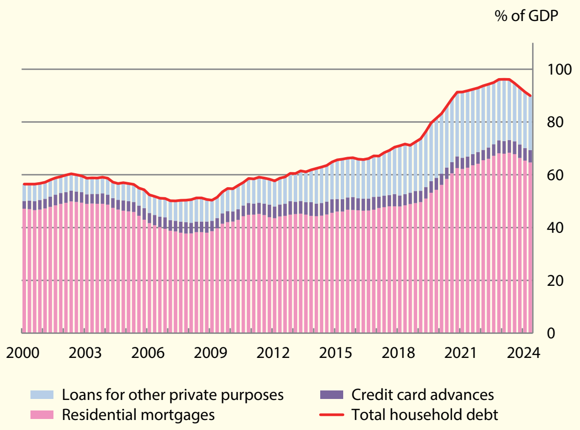
	2021		2022		2023		2024	
(%)	H1	H2	H1	H2	H1	H2	H1	H2
Residential mortgages	4.0	5.7	2.1	1.9	2.6	0.8	0.8	0.6
Personal loans	5.3	1.6	–2.5	–2.2	1.4	–0.3	–1.7	0.5
of which:								
Credit card advances	–0.4	8.1	–5.3	14.4	0.2	10.5	–5.3	6.7
Loans for other private purposes	6.4	0.4	–2.0	–5.1	1.6	–2.6	–0.9	–1.0
Total loans to households	4.4	4.4	0.7	0.7	2.2	0.5	0.0	0.6

Source: HKMA.

The household debt-to-GDP ratio decreased to 87.8% in the second half of 2024 (Chart 5.10), from 90.0% in the first half of 2024. During this period, the expansion of Hong Kong's nominal gross domestic product (GDP) contributed 2.7 percentage points of the 2.2-percentage-point decrease in the household debt-to-GDP ratio, while growth of household debt partially offset the decrease in the ratio by 0.5 percentage points.

62 Loans to households constitute lending to professional and private individuals, excluding lending for other business purposes. Mortgages account for the major proportion of household loans, while the remainder comprises mainly loans to private banking and wealth management customers secured by financial assets, credit card advances and unsecured personal loans. At the end of December 2024, household lending accounted for 37.3% of domestic lending. In this section, household debt is also referred to as loans to households.

Chart 5.10
Household debt-to-GDP and its components



Notes:
1. Only borrowings from AIs are covered.
2. GDP refers to the annualised GDP, which is the sum of the quarterly GDP in the trailing four quarters.
3. Since December 2018, the figure for household debt has been restated to reflect AIs' reclassification of their working capital loans.

Source: HKMA.

Due to its simplicity, the household debt-to-GDP ratio is widely used to gauge the financial soundness of households. When interpreting this ratio, it is important to take into account that: (i) the denominator of the ratio uses nominal GDP as a proxy for household income for ease of comparison across economies, and is thus not the actual income of the households with borrowings. Therefore, the household debt-to-GDP ratio does not reflect the actual debt servicing burden of households in the economy; and (ii) the numerator takes into account only the gross debts of households (rather than the net debts, which also reflect household assets).

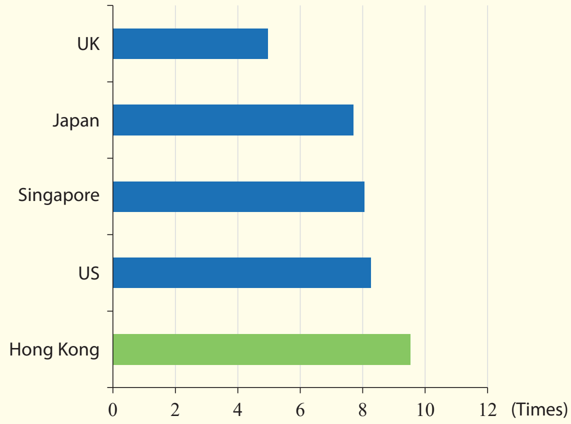
Consequently, a full and objective assessment of the risks associated with household debt requires other factors to be considered, including the actual debt servicing ratio (DSR) and the asset side of the household balance sheet. In fact, the average debt servicing ratio of new mortgages remained at a healthy level of 39.5% in January 2025. Household net worth has also stayed at a high level. Specifically, both the net worth-to-liabilities ratio and the safe asset-to-liabilities ratio of Hong Kong's household sector remained high at 9.5 times and 3.0 times respectively in 2023 (Charts 5.11 and 5.12), much higher than those of most other developed economies. This suggests that Hong Kong's households, on aggregate, are financially sound and have a strong buffer to cushion against potential financial and economic shocks.

The HKMA has been closely monitoring household indebtedness and regularly collects relevant data from the banks. The majority of household debts are residential mortgage loans, which are governed by the macroprudential policy framework, as well as collateralised loans to wealth management customers against financial assets. Coupled with the fact that household net worth has stayed at a high level, the HKMA considers that the household balance sheet to be healthy and the associated credit risk to be manageable.

For residential mortgages, the average loan-to-value (LTV) ratio and the average DSR of newly approved mortgage loans have stayed at healthy levels following successive rounds of countercyclical macroprudential measures introduced by the HKMA since 2009.[63] As for personal loans to wealth management customers secured by financial assets, the HKMA requires banks to adopt prudent and effective credit risk management measures for this type of business. Such measures include imposing a cap on LTV ratios for financial assets pledged as collateral, issuing prompt margin calls, and adopting forced liquidation mechanisms where necessary.

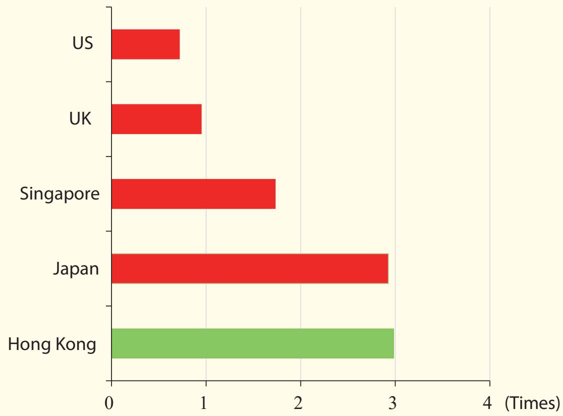
The HKMA also requires banks to adopt prudent underwriting standards for credit card advances and unsecured personal loan business. In reviewing credit applications, banks are required to understand borrowers' credit and financial conditions and carefully assess their repayment ability. As for post-lending, banks should implement effective monitoring that includes regular assessment of the asset quality of their loan portfolios.

Chart 5.11
Household net worth-to-liabilities ratio for selected economies



Note: Figures for Singapore, and the US refer to end-2024, while the figures for other economies (including Hong Kong) refer to end-2023.
Sources: Statistical agencies or central banks of selected economies, and HKMA staff estimates.

Chart 5.12
Safe assets-to-liabilities ratio for selected economies

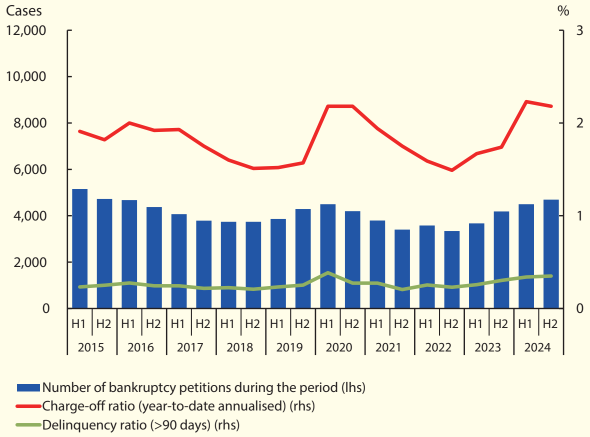


Note: Safe assets comprise deposits, as well as currencies if data is available. In the case of Hong Kong, safe assets refer to deposits only. Figures for Singapore, and the US refer to end-2024, while the figures for other economies (including Hong Kong) refer to end-2023.
Sources: Statistical agencies or central banks of selected economies, and HKMA staff estimates.

For unsecured household exposure, credit risk remained contained during the review period. The number of bankruptcy petitions presented increased by 4.3% in the second half of 2024 compared with the preceding six months. The year-to-date annualised credit card charge-off ratio edged down to 2.18% in the fourth quarter of 2024 from 2.23% in the second quarter of 2024 (Chart 5.13). The delinquency ratio stayed largely unchanged at 0.35% in December 2024.

[63] Taking into account the market developments, in October 2024, the HKMA adjusted the countercyclical macroprudential measures for property mortgage loans. The adjustments reverted the maximum LTV ratio and DSR limit for residential properties to the pre-2009 levels before the countercyclical macroprudential measures were first introduced. For details, see the press release "Countercyclical Macroprudential Measures for Property Mortgage Loans" on 16 October 2024 (https://www.hkma.gov.hk/eng/news-and-media/press-releases/2024/10/20241016-4/). The HKMA further introduced a one-off special mortgage scheme in December 2024, allowing for a relaxation of the supervisory requirements on the maximum LTV ratio and DSR limit to assist stage payment homebuyers who bought uncompleted residential properties during 2021 to 2023 to complete their property transactions. For details, see the press release "Special Mortgage Scheme for Uncompleted Residential Properties" on 4 December 2024 (https://www.hkma.gov.hk/eng/news-and-media/press-releases/2024/12/20241204-5/).

Chart 5.13
Charge-off ratio and delinquency ratio for credit card lending and bankruptcy petitions

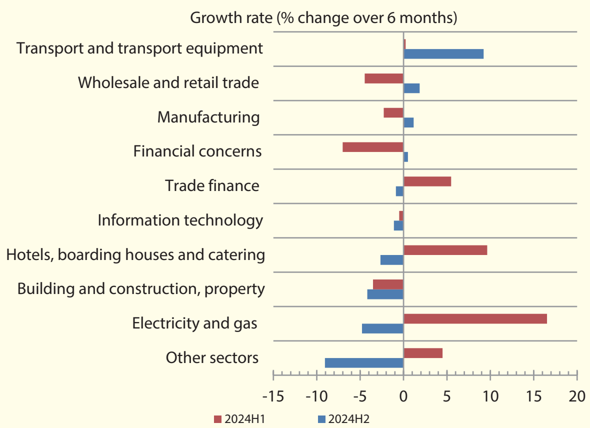


Sources: Official Receiver's Office and HKMA.

Corporate exposure[64]

Domestic corporate loans continued to contract, shrinking by 1.8% in the second half of 2024 following a decline of 1.4% in the first half. Lending to the electricity and gas, and building, construction and property sectors declined, while loans to the transport and transport equipment, wholesale and retail trade, and manufacturing sectors increased (Chart 5.14).

Chart 5.14
Growth in domestic corporate loans by selected sectors



Source: HKMA.

The demand-side survey on the credit conditions of small and medium-sized enterprises (SMEs) showed that SMEs' credit conditions remained broadly stable, with 70% of respondents perceiving a "similar" or "easier" banks' credit approval stance in the fourth quarter of 2024 (Chart 5.15).

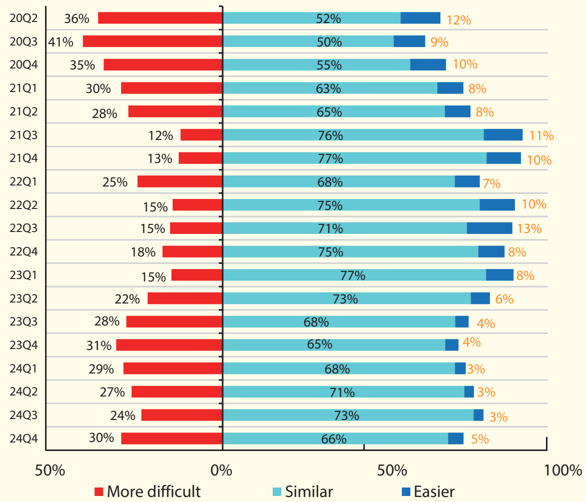
Meanwhile, among respondents with existing credit lines, 0% reported a "tighter" banks' stance in the fourth quarter of 2024, down further from 1% in the previous quarter (Chart 5.16). As a tighter stance on existing credit lines denotes a range of possible measures or arrangements (e.g. reducing unused and used credit lines, raising the interest rate, imposing additional collateral requirements, or shortening the loan tenor), respondents' indication of banks' stance on existing credit lines may not directly reflect banks' actual supply of credit to SMEs.

The HKMA has encouraged banks to be sympathetic in supporting the financing needs of corporates which are facing cash flow pressure under the overarching principle of prudent risk management. To better support SMEs in adapting to the changing market and business operating environment, the HKMA and the banking sector introduced five new measures in October 2024 to assist SMEs in their continuous development, upgrade and transformation. The 18 participating banks of the Taskforce on SME Lending[65] further announced in February 2025 that they have all agreed to help SMEs facing financial difficulties relieve their cash flow pressure through a collaborative mechanism.

64 Excluding interbank exposure. At the end of 2024, the share of corporate loans in domestic lending was 62.7%.

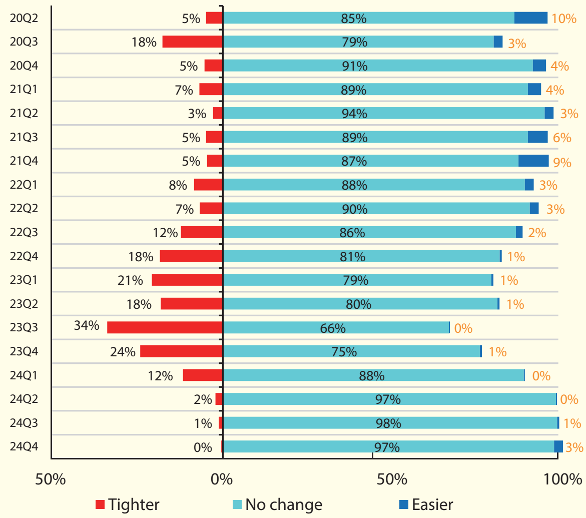
65 The Taskforce on SME Lending was jointly established by the HKMA and the Hong Kong Association of Banks in August 2024 to further strengthen the related work for supporting SMEs at both the individual case and the industry levels.

Chart 5.15
SMEs' perception of banks' credit approval stance relative to six months ago



Note: Excluding respondents who answered "no idea/don't know".
Source: HKMA.

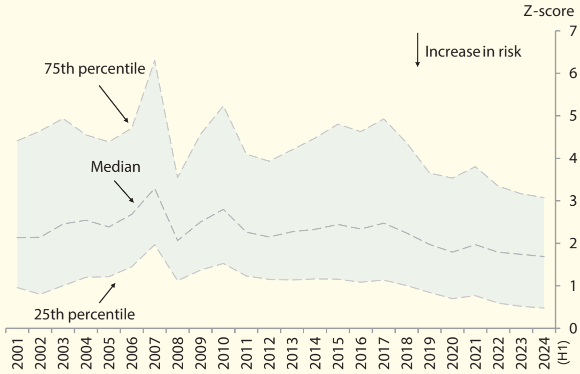
Chart 5.16
SMEs' reported change in banks' stance on existing credit lines



Note: The data covers only respondents with existing credit lines.
Source: HKMA.

Some credit risk indicators suggest signs of deterioration in the financial health of listed corporates. Based on accounting data for all non-financial corporates listed in Hong Kong up to the first half of 2024, the Altman's Z-score (a default risk measure for non-financial corporates based on accounting data) declined slightly (Chart 5.17).

Chart 5.17
Altman's Z-score of listed non-financial corporates in Hong Kong

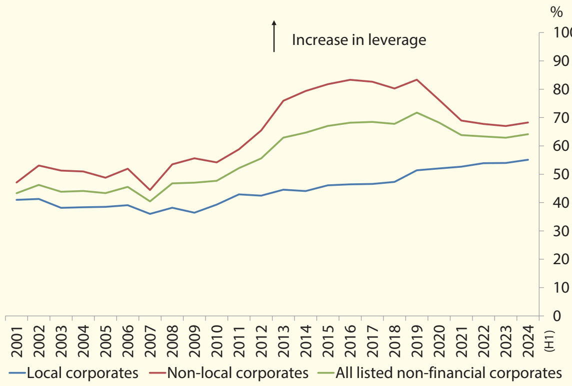


Notes:
1. All non-financial corporates listed on the Hong Kong Stock Exchange have been selected.
2. Figures are calculated based on information up to mid-February 2025.

Source: HKMA staff calculations based on estimates compiled by Bloomberg.

In addition, corporate leverage, as indicated by the weighted average debt-to-equity ratio, rose in the first half of 2024 (Chart 5.18). Nevertheless, the debt servicing ability of corporates, as indicated by the weighted average interest coverage ratio (ICR), saw some improvement (Chart 5.19).

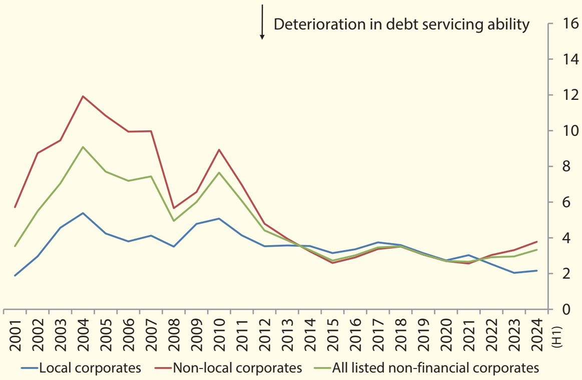
Chart 5.18
Leverage ratio of listed non-financial corporates in Hong Kong



Notes:
1. Weighted average figures.
2. The leverage ratio is defined as the ratio of debt to equity. A higher value indicates higher leverage.
3. All non-financial corporates listed on the Hong Kong Stock Exchange are selected. Local and non-local corporates refer to listed firms that are domiciled in and outside Hong Kong, respectively.
4. Figures are calculated based on information up to mid-February 2025.

Source: HKMA staff estimates based on data from Bloomberg.

Chart 5.19
Interest coverage ratio of listed non-financial corporates in Hong Kong



Notes:
1. Weighted average figures.
2. The ICR is calculated by dividing the earnings before interest and tax (EBIT) by total interest expenses. A lower value indicates a deterioration in debt servicing ability.
3. All non-financial corporates listed on the Hong Kong Stock Exchange are selected. Local and non-local corporates refer to listed firms that are domiciled in and outside Hong Kong, respectively.
4. Figures are calculated based on information up to mid-February 2025.

Source: HKMA staff estimates based on data from Bloomberg.

Mainland-related lending and non-bank exposures

The banking sector's total Mainland-related lending decreased by 4.5% to HK$3,859 billion (12.1% of total assets) at the end of 2024, from HK$4,042 billion (13.0% of total assets) at the end of June 2024 (Table 5.C). Other non-bank exposures decreased by 0.2% to HK$1,996 billion (Table 5.D). The gross CLR of Mainland-related lending of all AIs[66] decreased from 2.78% at the end of June 2024 to 2.38% at the end of 2024.

Table 5.C
Mainland-related lending

HK$ bn	Jun 2024	Sep 2024	Dec 2024
Mainland-related loans	4,042	3,988	3,859
Mainland-related loans excluding trade finance	3,797	3,762	3,636
Trade finance	245	226	223
By type of AIs:			
Overseas incorporated AIs	1,373	1,343	1,285
Locally incorporated AIs*	1,886	1,860	1,799
Mainland banking subsidiaries of locally incorporated AIs	783	785	774
By type of borrowers:			
Mainland state-owned entities	1,779	1,761	1,690
Mainland private entities	1,196	1,184	1,110
Non-Mainland entities	1,067	1,043	1,059

Notes:
1. * Including loans booked in Mainland branches of locally incorporated AIs.
2. Figures may not add up to the total due to rounding.

Source: HKMA.

Table 5.D
Other non-bank exposures

HK$ bn	Jun 2024	Sep 2024	Dec 2024
Negotiable debt instruments and other on-balance sheet exposures	1,466	1,549	1,440
Off-balance sheet exposures	534	545	556
Total	**2,000**	**2,094**	**1,996**

Note: Figures may not add up to the total due to rounding.

Source: HKMA.

66 Figures cover AIs' Hong Kong offices and Mainland branches and subsidiaries.

Macro stress testing of credit risk[67]

Results of the latest macro stress testing on retail banks' credit exposure suggest the Hong Kong banking sector remains resilient and should be able to withstand severe macroeconomic and corporate shocks. Table 5.E presents a simulated future credit loss rate of retail banks in the fourth quarter of 2026 under four specific macroeconomic shocks[68] and one corporate shock using information up to the fourth quarter of 2024. In stressed scenarios, the average expected credit losses two years after different shocks are estimated to be moderate, ranging from 0.99% (Property price shock and interest rate shock) to 1.39% (Hong Kong GDP shock).

Taking into account tail risk, the Value-at-risk (VaR) at the 99% confidence level (CL) of bank credit loss would increase in all five stressed scenarios, ranging from 2.59% (Property price shock) to 3.47% (Hong Kong GDP shock).

Table 5.E
The mean and value-at-risk statistics of simulated credit loss distributions[1]

Scenario	Estimated credit loss (% of the loan portfolio) Mean	VaR at 99% CL
Baseline[2]	0.76	2.02
Stressed scenarios[3]		
Hong Kong GDP shock	1.39	3.47
Property price shock	0.99	2.59
Interest rate shock	0.99	2.61
Mainland GDP shock	1.26	3.12
Corporate Shock	1.37	3.33

Notes:
1. The assessments assume the economic conditions in 2024 Q4 as the current environment. The Monte Carlo simulation method is adopted to generate the credit loss distribution for each scenario.
2. Baseline scenario: No shock throughout the two-year period.
3. Stressed scenarios:
   Hong Kong GDP shock: Reductions in Hong Kong's real GDP by 3.2%, 3.6%, 9.3% and 9.4% respectively in each of the four consecutive quarters starting from 2025 Q1.
   Property price shock: Reductions in Hong Kong's real property prices by an average of 12% in each of the four consecutive quarters starting from 2025 Q1.
   Interest rate shock: A rise in real interest rates by 0.1, 0.9, 1.8 and 3.2 percentage points respectively each of the four consecutive quarters starting from 2025 Q1.
   Mainland GDP shock: An average year-on-year real GDP growth rate of 2% for the four consecutive quarters starting from 2025 Q1.
   Corporate shock: Liquidity and earning shocks on listed corporates in Hong Kong are assumed such that all short-term debts of the corporates could not be rolled over together with a reduction in revenue for the corporates by 50% year-on-year in the first year of the stressed period. The impact of these shocks on the median default probability of corporates is estimated to serve as an input for the stress-testing exercise.

Source: HKMA staff estimates.

5.4 *Risks and resilience*

As shown in the previous sections, the Hong Kong banking sector stayed resilient during the review period. However, a number of downside risk factors, including uncertainties surrounding trade tensions between the US and its major trading partners and growing concerns over the pace of future US interest rate cuts because of the potential upside risks to inflation, could pose challenges to the Hong Kong banking sector going forward.

First, banks should remain vigilant in their credit risk management, especially with the potential for increased global trade conflicts. The recent announcements of US trade tariffs and the corresponding retaliatory measures by its trading partners have increased uncertainty in global trade. This will inevitably cast a shadow on the global growth outlook and weaken business confidence, which could adversely affect corporates' earnings and test their debt servicing ability.

67 Macro stress testing refers to a range of techniques used to assess the vulnerability of a financial system to "exceptional but plausible" macroeconomic shocks. The credit loss estimates presented in this report are obtained based on a revised framework presented in Box 4 of the *Half-Yearly Monetary and Financial Stability Report* published in September 2023. Estimates in the current report are not strictly comparable to estimates from previous reports.

68 These shocks are calibrated with reference to extreme episodes observed in the past. For instance, the Hong Kong GDP shock scenario replicates the severe economic downturn recorded between the third quarter of 2019 and the second quarter of 2020.

In addition, there have been growing concerns over both the upside risk of US inflation and downside risk to US economic growth under the new US administration due partly to its trade and immigration policies, adding to uncertainty over the pace and extent of future US interest rate cuts. The increased uncertainties surrounding the future path of US interest rates, and the subsequent impact on domestic interest rates, could create challenges for banks in managing their funding costs.

Nevertheless, the robust capital and liquidity positions of the Hong Kong banking sector should provide strong buffers to withstand shocks arising from these risk factors.

Box 4 introduces a framework that utilises GenA.I. tools to extract useful insights from banks' earnings call transcripts, in a way that can enhance the monitoring tools for assessing systemic risks and emerging vulnerabilities in the banking sector. The framework is shown to be capable of identifying key and emerging risks facing the global banking sector. Our latest assessment suggests that geopolitical risks and credit risks have attracted increasing attention in the global banking industry at the current juncture. Therefore, a closer monitoring of these areas may be warranted.

The countercyclical capital buffer for Hong Kong

The CCyB is part of the internationally agreed Basel III standards and is designed to enhance the resilience of the banking sector against system-wide risks. This buffer can be reduced in times of a downturn, allowing banks to continue providing credit to support the real economy. The latest applicable jurisdictional CCyB for Hong Kong, announced on 18 October 2024, is 0.5%.[69]

In setting the CCyB, the Monetary Authority considered a series of indicators (Table 5.F), including an "indicative buffer guide" produced by the Initial Reference Calculator (IRC). The IRC is a metric that provides a guide for the CCyB by combining information from the gap between the ratio of credit-to-GDP and its long term trend, the gap between the ratio of residential property prices to rentals and its long term trend,[70] and the Positive Neutral CCyB.[71] The setting of the CCyB for Hong Kong is, however, not a mechanical exercise and the Monetary Authority will consider a broad range of reference indicators ("Comprehensive Reference Indicators") and all relevant information available in addition to the indicative buffer guide produced by the IRC.[72]

69 For details, see the Announcement of the CCyB to AIs in October 2024 (https://www.hkma.gov.hk/eng/key-functions/banking/banking-legislation-policies-and-standards-implementation/countercyclical-capital-buffer-ccyb/).

70 The credit-to-GDP gap is the gap between the ratio of credit to GDP and its long-term trend, while the property price-to-rent gap is the gap between the ratio of residential property prices to rentals and its long-term trend.

71 The Positive Neutral CCyB, currently at 1% in Hong Kong effective from 1 April 2024, is a floor for the IRC and helps ensure the availability of sufficient buffer against possible exogenous system-wide shocks. Under the Positive Neutral CCyB approach, authorities aim for a positive CCyB when risks are judged to be neither subdued nor elevated. See https://www.bis.org/publ/bcbs_nl30.htm for more information.

72 These include measures of bank, corporate and household leverage; debt servicing capacity; profitability, asset quality and funding conditions within the banking sector and macroeconomic imbalances.

In the latest assessment based on the third quarter data of 2024 and the Positive Neutral CCyB according to the revised IRC formula,[73] the IRC was 1%. The projection based on all available data at the decision date suggests that the IRC would likely be 1% when all relevant data for the fourth quarter of 2024 become available.

When the information drawn from the series of Comprehensive Reference Indicators and all relevant information available at the time of the decision in March 2025 is also taken into account, the quantitative indicators suggested that the risk of economic overheating in the local economy is well contained. However, deleveraging and the property market correction may be continuing, taking into account the recent trends of the two primary gap indicators. Therefore, the Monetary Authority considered it appropriate to maintain the CCyB at its current level.

Table 5.F
Information related to the Hong Kong jurisdictional countercyclical capital buffer

	Q3-2024	18-Oct-24	Q1-2025
Announced CCyB		0.5%	
Date effective		18-Oct-24	
Initial Reference Calculator	1.00%	1.00%	1.00%
Basel Common Reference Guide	0.00%	0.00%	0.00%
Property Buffer Guide	0.00%	0.00%	0.00%
Composite CCyB Guide	0.00%	0.00%	0.00%
Positive Neutral CCyB	1.00%	1.00%	1.00%
Primary gap indicators			
Credit/GDP gap	–32.8%	–35.2%	-37.9%
Property price/rent gap	–21.5%	–25.6%	-29.2%

Notes:

1. The values of all CCyB guides and their respective input variables are based on public data available prior to the corresponding review/announcement date, and may not be the most recently available as of each quarter end (refer to SPM CA-B-1 for explanations of the variables). If there is a CCyB announcement, the date of the announcement is shown at the top of the respective column. Otherwise, the quarter in which a CCyB review takes place (normally close to quarter end) is shown at the top of the column.
2. Following the revised CCyB framework effective from 1 April 2024, the 2.5% cap is applied on the Composite CCyB Guide instead of the Basel Common Reference Guide and Property Buffer Guide (refer to SPM CA-B-1 for details of the formula and explanation).

Source: HKMA.

Key performance indicators of the banking sector are provided in Table 5.G.

[73] Under the new CCyB framework effective from 1 April 2024, the IRC will be the higher of two constituent components: a Composite CCyB Guide based on the credit-to-GDP gap and the property price-to-rent gap, and a Positive Neutral CCyB that sets a floor for the IRC.

Table 5.G
Key Performance Indicators of the Banking Sector[1] (%)

	Dec 2023	Sep 2024	Dec 2024
Interest rates			
1-month HIBOR fixing[2] (quarterly average)	5.19	4.19	4.32
3-month HIBOR fixing (quarterly average)	5.34	4.36	4.34
BLR[3] and 1-month HIBOR fixing spread (quarterly average)	0.69	1.66	1.16
BLR and 3-month HIBOR fixing spread (quarterly average)	0.54	1.49	1.13
Composite interest rate[4]	2.94	2.35	2.24
		All AIs	
Balance sheet developments[5]			
Total deposits	+2.8	+2.5	+1.2
Hong Kong dollar	+0.5	+1.3	+0.4
Foreign currency	+4.8	+3.5	+1.9
Total loans	–1.0	–0.2	–0.7
Domestic lending[6]	–0.1	–0.8	–0.1
Loans for use outside Hong Kong[7]	–3.5	+1.7	–2.3
Negotiable instruments			
Negotiable certificates of deposit (NCDs) issued	–2.5	+4.8	+2.4
Negotiable debt instruments held (excluding NCDs)	+2.5	+6.7	+1.4
Asset quality			
As a percentage of total loans[8]			
Pass loans	96.41	96.00	95.90
Special mention loans	2.03	2.01	2.14
Classified loans[9] (gross)	1.57	1.99	1.96
Classified loans (net)[10]	0.83	1.17	1.21
Overdue > 3 months and rescheduled loans	1.24	1.64	1.55
Classified loan ratio (gross) of Mainland related lending[11]	2.58	2.79	2.38
Liquidity ratios (consolidated)			
Liquidity Coverage Ratio — applicable to category 1 institutions (quarterly average)	178.5	178.4	178.4
Liquidity Maintenance Ratio — applicable to category 2 institutions (quarterly average)	65.7	67.3	67.0
Net Stable Funding Ratio — applicable to category 1 institutions	144.4	142.8	143.4
Core Funding Ratio — applicable to category 2A institutions	169.4	184.3	186.7
		Retail banks	
Profitability			
Loan impairment charges as a percentage of average total assets (year-to-date annualised)	0.26	0.19	0.22
Net interest margin (year-to-date annualised)	1.67	1.50	1.52
Cost-to-income ratio (year-to-date)	38.9	38.3	39.2
		Surveyed institutions	
Asset quality			
Delinquency ratio of residential mortgage loans	0.08	0.11	0.11
Credit card lending			
Delinquency ratio	0.30	0.35	0.35
Charge-off ratio — quarterly annualised	1.98	2.33	2.30
— year-to-date annualised	1.74	2.25	2.18
		All locally incorporated AIs	
Capital adequacy (consolidated)			
Common Equity Tier 1 capital ratio	17.2	18.0	17.9
Tier 1 capital ratio	18.9	19.7	19.9
Total capital ratio	21.1	21.8	21.8
Leverage ratio	7.9	8.0	8.0

Notes:
1. Figures are related to Hong Kong offices only except where otherwise stated.
2. The Hong Kong Interbank Offered Rates are released by the Hong Kong Association of Banks.
3. With reference to the rate quoted by The Hongkong and Shanghai Banking Corporation Limited.
4. The composite interest rate is a weighted average interest rate of all Hong Kong dollar interest-rate-sensitive liabilities, which include deposits from customers, amounts due to banks, negotiable certificates of deposit and other debt instruments, and all other liabilities that do not involve any formal payment of interest but the values of which are sensitive to interest rate movements (such as Hong Kong dollar non-interest bearing demand deposits) on the books of banks. Further details can be found on the HKMA website.
5. Quarterly change.
6. Loans for use in Hong Kong plus trade finance.
7. Including "others" (i.e. unallocated).
8. Figures are related to all AIs' Hong Kong offices, as well as locally incorporated AIs' overseas branches and major overseas subsidiaries.
9. Classified loans are those loans graded as "substandard", "doubtful" or "loss".
10. Net of specific provisions/individual impairment allowances.
11. Figures are related to all AIs' Hong Kong offices, as well as locally incorporated AIs' Mainland branches and subsidiaries.

Box 4
Utilising GenA.I. tools to monitor systemic risks in global banking: An analysis of earnings call transcript data

Introduction[74]

Generative AI (GenA.I.) is a powerful and efficient tool for analysing huge amounts of unstructured textual data. It is a useful tool for monitoring risks in the global financial markets, as textual information from market participants (e.g. transcripts of earnings calls) can provide timely and important insights into key and emerging vulnerabilities. Assessing such information can complement traditional monitoring approaches that rely heavily on quantitative data, data which may be subject to time lags.

Against this background, this box presents a framework that incorporates the use of large language modelling (LLM) to analyse banks' earnings call transcripts,[75] with the aim of generating insights into key and emerging risks facing the global banking industry.

We applied the framework to identify the key risk factors in three recent industry-wide stress episodes occurring between 2020 and 2023. Our findings suggest that the key risk factors identified by the framework are consistent with the actual risk drivers of these episodes. In addition, the findings show that the framework is able to provide early warning signals ahead of the actual deterioration in financial indicators that occur prior to the stress events. This suggests that the framework is effective for the global monitoring of systemic risks in global banking.

[74] For details, see Wong et al. (2025): "Utilising Generative AI tools to monitor systemic risks in global banking: An analysis of earnings call transcript data", *HKMA Research Memorandum*, forthcoming.

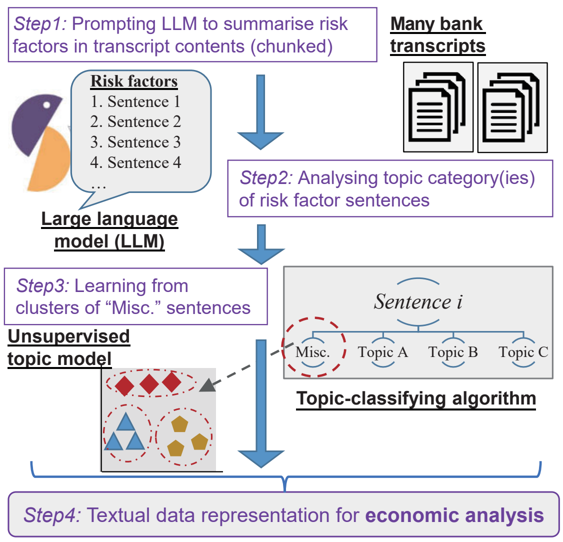
[75] The textual transcripts recorded the discussions in earnings conference calls, held between the board of a publicly listed bank, investors, analysts and the press to discuss financial results over a financial period. The transcripts in this analysis are sourced from S&P Capital IQ.

Lastly, we applied the framework to banks' earnings call transcripts in the second half of 2024 to examine the recent risk situations in the global banking sector.

Overview of textual transcript data and the analytical framework

We utilised GenA.I. tools to analyse over 11,600 earnings call transcripts of around 520 publicly listed commercial banks globally between 2019 and 2024.[76] These transcripts contain timely and rich qualitative information about a bank's current business performance and outlook, and risk concerns expressed by the bank's management, market analysts and investors.

Chart B4.1: Schematic diagram of the GenA.I.-powered monitoring framework



Note: "Misc." indicates the group of summarised risk sentences that the topic-classifying algorithm assigns as 'miscellaneous'.

[76] Around 42%, 25% and 21% of the sample banks are headquartered in North America, Asia-Pacific and Europe respectively.

Chart B4.1 is a schematic diagram summarising the four key steps of the framework, which can be broadly categorised as text summarisation, topic classification, topic learning, and quantitative analysis.

In the first step, the transcripts are processed by an LLM[77] to extract relevant risk discussions. The LLM condenses lengthy transcripts into shorter, more structured, and readable formats, while still retaining the key information. To guide the LLM in generating outputs in the desired format, a specific prompt template was designed instructing the LLM to generate up to seven sentences focused on the risk discussions from the transcripts. These outputs facilitate easier analysis in the subsequent steps.

In the second step, the summarised risk sentences are classified into 37 specific topics using a text classification algorithm. This enables us to measure the frequency of mention of different risk topics in an earnings call transcript. Since a risk sentence may be related to multiple topics[78], each sentence can be classified into a maximum of three out of the 37 pre-defined topics, if certain criteria are met.[79] These 37 pre-defined topics are further grouped into 13 broader risk categories (e.g. funding costs and interest rate outlook topics are grouped into the "interest rate risk" category) for easier interpretation. Any risk sentences that do not fit into the 37 pre-defined specific topics are classified as "miscellaneous" for further topic learning in the third step.

Next, the miscellaneous risk sentences are analysed using an unsupervised topic model to identify any new risk topics that are not covered by the pre-defined risk topics. In brief, these topic models identify clusters of sentences that share similar contexts, so that meaningful topic labels can be learned from the characteristics of sentences within each cluster.[80] The resulting topic labels could facilitate the identification of new emerging risk factors facing the global banking industry.

Finally, the classified risk topics from all risk sentences (i.e. the outputs from steps 2 and 3) are used to quantitatively assess their significance and trends, as well as to explore any interconnection between these risk topics in the global banking industry over time.

Examining the effectiveness of the framework based on recent stress episodes in the global banking industry

We applied the framework for the period from the second half of 2021 to the second half of 2024, covering three specific stress episodes in the banking industry, namely (i) the Russia-Ukraine conflict in the first half of 2022, (ii) the US banking turmoil in the first half of 2023, and (iii) stresses stemming from banking exposure to commercial real estate (CRE).

77 The analysis was conducted by the HKMA's in-house LLMs.

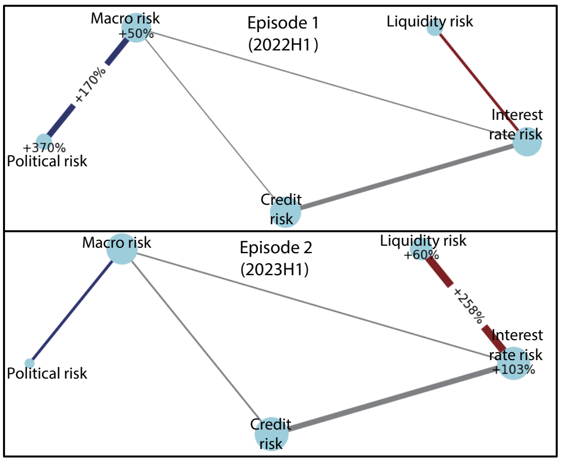
78 For example, the summarised risk sentence "Inflationary pressures remain significant in the near term, amplified by higher energy and food prices, largely due to the Russia-Ukraine war" is linked to political and macro risks.

79 Specifically, the algorithm will assign a sentence to a particular pre-defined topic if its sentence similarity score with a particular topic exceeds a certain threshold.

80 For instance, WordCloud(s) and LLM-labelling techniques can be applied to generate topic labels for these latent clusters.

Chart B4.2 summarises the results generated by the framework in terms of two simplified network charts showing the identified key risk topics and their linkages for the first two stress episodes respectively.[81] In the chart, a larger node size indicates a more significant risk topic as revealed by the transcripts (measured by the number of times the risk is mentioned in the transcripts, relative to the corresponding level in the second half of 2021), and a thicker line between two risks reflects a stronger linkage between the two risks (measured by the number of times the two risks are mentioned jointly in the transcripts).

Chart B4.2: Identified key risk factors and their interlinkages in two recent stress episodes



Note: Numbers reported in the nodes and the edges represent the percentage change in the number of mentions in the transcripts relative to their corresponding levels in 2021H2 respectively.

Source: HKMA staff estimates based on S&P Capital IQ transcript data.

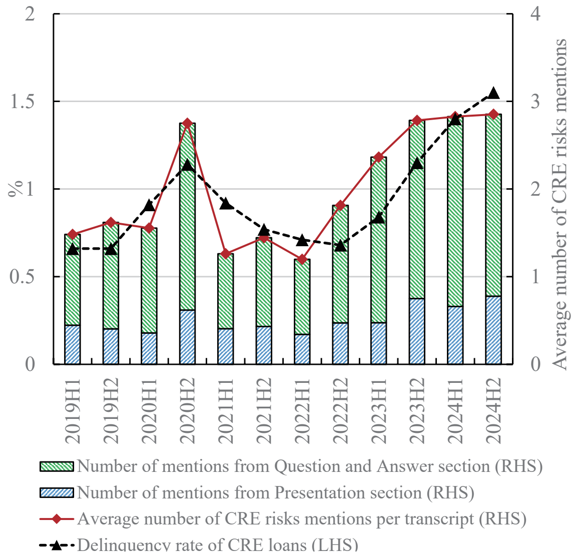
i.) For the first episode (the Russia-Ukraine conflict in the first half of 2022), we found a substantial increase in the number of mentions of political risk in the transcripts (mentioned 3.7 times more often compared to the corresponding level in the second half of 2021). Importantly, the increased concerns regarding political risk were closely linked with macroeconomic risks, with the number of joint mentions of both risks in the transcripts rising significantly (the blue edge in the upper chart). These findings are consistent with the increased concerns among banks about the potential negative impact of geopolitical tensions on global economic growth and inflation at that time.

ii.) For the second episode, when global interest rates rose rapidly to a high level in the first half of 2023, interest rate risk was identified as a key risk factor for banks. Furthermore, the increased concerns about interest rate risk were strongly connected with liquidity risk, with the number of joint mentions of these two risks surging by 2.6 times (the red edge in the lower panel of Chart B4.2). This finding reflects heightened market concerns related to banks' funding and liquidity positions following the failure of Silicon Valley Bank under the high interest rate environment.

In addition to identifying key risk factors in the transcripts, our framework was found to be capable of providing reliable early warning signals before the occurrence of a stress event. To demonstrate this, we take the stresses stemming from US banking exposure to CRE as an example. Chart B4.3 displays the average frequency of CRE risks mentioned in the earnings call transcripts of the sample of listed US-domiciled banks over time.

[81] For illustrative purposes, certain standard risk factors that are less relevant for financial stability risk monitoring (such as earnings risk and business growth risk) are excluded from the simplified network chart.

Chart B4.3: Average number of CRE risks mentioned per transcript for US-domiciled listed banks



Source: HKMA staff estimates based on S&P Capital IQ transcript data and Federal Reserve Economic Data.

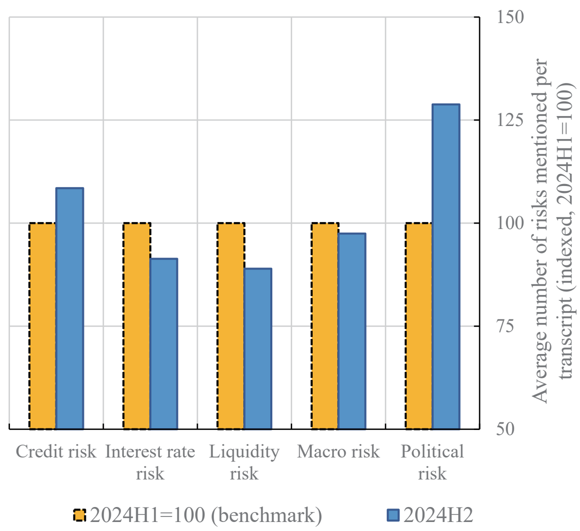
Two key observations are worth noting. First, amid the rapid rise in the US monetary policy interest rate from March 2022, there was a notable rise in the frequency that CRE-related risks were mentioned in the transcripts in the second half of 2022 (red line in Chart B4.3), indicating that such risk had emerged as one key concern. Importantly, the framework was able to flag the risk ahead of the actual deterioration in the delinquency ratio of US banks' CRE loans. This example suggests that the framework can provide reliable early warning of emerging risks.

Secondly, the increased frequency of CRE mentions primarily originated from the Question and Answer sections of the transcripts. This suggests that the framework is effective in extracting a wider range of information (e.g. views of and assessments by analysts and investors) than simply that provided by banks' management, thus offering additional timely and valuable insights into the potential risks and vulnerabilities faced by banks.

Latest assessment based on data for the second half of 2024

In this section, we applied our framework to the latest available earnings call transcripts in the second half of 2024 to identify key risks and trends facing the global banking industry.[82] Chart B4.4 presents the changes in the average frequency of mention of the five major risk topics examined in the previous section between the first half of 2024 and the second half of 2024. The figures in the chart have all been rebased to their corresponding values in the first half of 2024.

Chart B4.4: Latest assessment based on transcript data for the second half of 2024



Source: HKMA staff estimates based on S&P Capital IQ transcript data.

This assessment shows that concerns over interest rate and liquidity risks have decreased moderately in the second half of 2024, in part because several major central banks in the advanced economies had begun to lower their policy rates during the period.

82 Transcripts available between July and December 2024 were collected as of 28 December 2024 for the assessment.

However, we noted that concerns over credit risks have increased. This probably reflects the fact that, despite policy rate cuts, the possible "high-for-longer" interest rate environment may continue to exert pressure on borrowers' debt servicing capacity.

Moreover, the transcripts revealed that political risks appear to be a renewed major concern, probably reflecting the uncertainties surrounding the outcome of the US presidential election in late-2024 and the potential implications for US foreign policy, particularly in relation to trade and geopolitical issues, under the new US administration.

Conclusion

This box presents a feasible framework for monitoring risks in the global banking sector, one that applies GenA.I. tools to extract useful insights from banks' earnings call transcripts. It shows that the framework is capable of identifying the key and emerging risks facing banks. At the current juncture, the framework reveals that geopolitical and credit risks are two important risk factors that have attracted increasing attention in the global banking industry, indicating that closer monitoring of these two risk areas may be warranted.

While the framework is shown to be an effective tool for monitoring systemic risks, it is important to recognise the limitations of GenA.I. tools, including their "black-box" nature.[83] To mitigate potential model risks, such GenA.I. tools should be applied alongside traditional monitoring tools.

83 The underlying probabilistic nature of LLMs in content generation means they can be subject to hallucinations, causing them to generate untruthful or out-of-context content about future events, rather than solely summarising the given inputs.

Glossary of terms

Aggregate Balance

The sum of balances in the clearing accounts and reserve accounts kept with the central bank. In Hong Kong, this refers to the sum of the balances in the clearing accounts kept with the HKMA. The Aggregate Balance is a part of the Monetary Base.

Authorized Institution (AI)

An institution authorized under the Banking Ordinance to carry on the business of taking deposits. Hong Kong maintains a Three-tier Banking System, which comprises licensed banks, restricted licence banks and deposit-taking companies.

Best Lending Rate

A benchmark interest rate that banks use to price loans. In Hong Kong, the Best Lending Rate is used as a base for quoting interest rates on mortgage loans.

Certificates of Indebtedness (CIs)

Certificates issued by the Financial Secretary under the Exchange Fund Ordinance, to be held by note-issuing banks as cover for the banknotes they issue.

Composite Consumer Price Index

The main consumer price index (CPI) for Hong Kong. The Census and Statistics Department compiles three separate CPI series relating to households in different expenditure ranges. The CPI(A) relates to about 50% of households in the relatively low expenditure range; the CPI(B) relates to the next 30% of households in the medium expenditure range; and the CPI(C) relates to the next 10% of households in the relatively high expenditure range. The Composite CPI is compiled based on the aggregate expenditure pattern of all of the above households taken together.

Composite Interest Rate

The composite interest rate is a weighted average interest rate of all Hong Kong dollar interest-rate-sensitive liabilities, which include deposits from customers, amounts due to banks, negotiable certificates of deposit and other debt instruments, and all other liabilities that do not involve any formal payment of interest but the values of which are sensitive to interest rate movements (such as Hong Kong dollar non-interest bearing demand deposits) on the books of banks. Data from retail banks, which account for the majority of the Hong Kong dollar deposits in the banking sector, are used in the calculation. It should be noted that the composite interest rate represents only average interest expenses. There are various other costs involved in the making of a loan, such as operating costs (e.g. staff and rental expenses), credit cost and hedging cost, which are not covered by the composite interest rate.

Convertibility Undertaking (CU)

An undertaking by a central bank or Currency Board to convert domestic currency into foreign currency and vice versa at a fixed exchange rate. In Hong Kong, the HKMA operates Convertibility Undertakings on both the strong side and the weak side of the Linked Rate of 7.80. Under the strong-side Convertibility

Undertaking, the HKMA undertakes to buy US dollars from licensed banks at 7.75. Under the weak-side Convertibility Undertaking, the HKMA undertakes to sell US dollars at 7.85. Within the Convertibility Zone between 7.75 and 7.85, the HKMA may choose to conduct market operations consistent with Currency Board principles with the aim of promoting the smooth functioning of the money and foreign exchange markets.

Convertibility Zone

The Hong Kong dollar-US dollar exchange rate band, defined by the levels of the strong- and weak-side Convertibility Undertakings, within which the HKMA may choose to conduct market operations consistent with Currency Board principles.

Exchange Fund Bills and Notes (EFBNs)

Debt instruments issued by the HKMA for the account of the Exchange Fund. These instruments are fully backed by the foreign reserves. The HKMA has undertaken that new Exchange Fund paper will only be issued when there is an inflow of funds, thus enabling the additional paper to be fully backed by the foreign reserves. Since 1 April 1999, interest payments on Exchange Fund paper have been allowed to expand the Monetary Base. Additional Exchange Fund paper is issued to absorb such interest payments. This is consistent with the Currency Board discipline since interest payments on Exchange Fund paper are backed by interest income on the US dollar assets backing the Monetary Base.

Monetary Base

A part of the monetary liabilities of a central bank. The Monetary Base is defined, at the minimum, as the sum of the currency in circulation (banknotes and coins) and the balance of the banking system held with the central bank (the reserve balance or the clearing balance). In Hong Kong, the Monetary Base comprises Certificates of Indebtedness (for backing the banknotes issued by the note-issuing banks), government-issued currency in circulation, the sum of the balances of the clearing accounts kept with the HKMA (the Aggregate Balance), and Exchange Fund Bills and Notes.

Money supply

The total stock of money available in the economy. Hong Kong has three measures of money supply: Money Supply definition 1 (M1) is defined as the sum of legal tender notes and coins held by the public plus customers' demand deposits placed with licensed banks. Money Supply definition 2 (M2) is defined as M1 plus customers' savings and time deposits with licensed banks plus negotiable certificates of deposit (NCDs) issued by licensed banks held outside the banking sector. Money Supply definition 3 (M3) is defined as M2 plus customers' deposits with restricted licence banks and deposit-taking companies plus NCDs issued by these institutions held outside the banking sector.

Nominal and Real Effective Exchange Rate (NEER and REER)

An indicator of the overall exchange rate value of the Hong Kong dollar against a basket of currencies of Hong Kong's principal trading partners. The nominal effective exchange rate (NEER) is a weighted average of the exchange rates between Hong Kong and its principal trading partners. The real effective exchange rate (REER) is obtained by adjusting the NEER for relative movements in the seasonally adjusted consumer price indices of those selected trading partners.

Abbreviations

1m moving average	One-month moving average
3m moving average	Three-month moving average
3m-on-3m	Three-month-on-three-month
AB	Aggregate Balance
AEs	Advanced economies
A.I.	Artificial intelligence
AIs	Authorized institutions
AMCM	Monetary Authority of Macao
ASEAN	Association of Southeast Asian Nations
AU	Australia
AUM	Assets under Management
AWB	Air Waybill
BI	Bank Indonesia
BAU	Business-as-usual
BoJ	Bank of Japan
bn	Billion
BoK	Bank of Korea
BLR	Best Lending Rate
bps	basis points
CAPEX	Capital expenditure
CAR	Capital Adequacy Ratio
CIES	Capital Investment Entrant Scheme
CCPI	Composite Consumer Price Index
CCDC	China Central Depository & Clearing Co., Ltd.
CCyB	Countercyclical capital buffer
CDs	Certificates of deposits
CET1	Common equity tier-one
CEWC	Central Economic Work Conference
CFETS	China Foreign Exchange Trade System
CFR	Core Funding Ratio
CIBM	China Interbank Bond Market

CIES	Capital Investment Entrant Scheme
CIs	Certificates of Indebtedness
CL	Confidence Level
CLR	Classified Loan Ratio
CMBS	Commercial mortgage-backed securities
CMU	Central Moneymarkets Unit
CN	Mainland China
CNH	Offshore renminbi in Hong Kong
CNY	Onshore renminbi
COVID	Coronavirus Disease
CPI	Consumer Price Index
CRE	Commercial real estate
CRST	Climate Risk Stress Test
C&SD	Census and Statistics Department
CU	Convertibility Undertaking
DaR	Debt-at-risk
DBGS	Digital Bond Grant Scheme
DCSA	Digital Container Shipping Association
DEA	Data Envelopment Analysis
DI	Direct investment
DID	Difference-in-differences
DSR	Debt-servicing ratio
DTD	Distance-to-default
EA	Euro area
EBIT	Earnings before interest and tax
EBITDA	Earnings before interest, taxes, depreciation and amortization
ECB	European Central Bank
EFBNs	Exchange Fund Bills and Notes
EM	Emerging-market
EMEAP	Executive's Meeting of East Asia-Pacific Central Banks

EMEs	Emerging Market Economies
EPS	Earnings per share
ESG	Environmental, Social and Governance
ESLS	Enhanced Supplementary Labour Scheme
ETFs	Exchange traded funds
EU	European Union
EUR	Euro
Fed	Federal Reserve
FI	Financial Institution
FINI	Fast Interface for New Issuance
FOMC	Federal Open Market Committee
FPS	Faster Payment System
FX	Foreign exchange
GBA	Guangdong-Hong Kong-Macao Greater Bay Area (GBA)
GBP	British Pound Sterling
GDP	Gross Domestic Product
GenA.I.	Generative Artificial Intelligence
GEM	Growth Enterprise Market
GFC	Global Financial Crisis
GHG	Greenhouse gases
GICS	Global Industry Classification Standard
GVCs	Global value chains
HIBOR	Hong Kong Interbank Offered Rate
HK	Hong Kong
HKD	Hong Kong dollar
HKEX	The Hong Kong Exchanges and Clearing Limited
HKFRS	Hong Kong Financial Reporting Standard
HKMA	Hong Kong Monetary Authority
HKMC	Hong Kong Mortgage Corporation Limited
HKPC	Hong Kong Productivity Council
HKTDC	Hong Kong Trade and Development Council

HK$M3	Hong Kong dollar broad money supply
HKSAR	Hong Kong Special Administrative Region
HSCEI	Hang Seng China Enterprises Index
HSI	Hang Seng Index
IATA	International Air Transport Association
IBPS	Internet Banking Payment System
ICC	International Chamber of Commerce
ICR	Interest Coverage Ratio
ICSD	International Central Securities Depository
ID	Indonesia
IDR	Indonesian Rupiahs
I/E	Import/Export
IFC	International Finance Corporation
IIF	Institute of International Finance
IMF	International Monetary Fund
IPO	Initial Public Offering
IRC	Initial Reference Calculator
IRRBB	Interest rate risk in the banking book
IT	Information technology
IVS	Individual Visit Scheme
JP	Japan
JPY	Japanese Yen
KR	South Korea
LCR	Liquidity Coverage Ratio
LIBOR	London Interbank Offered Rate
LERS	Linked Exchange Rate System
lhs	Left-hand side
LLM	Large Language model
LMR	Liquidity Maintenance Ratio
LPR	Loan Prime Rate
LR	Leverage Ratio

LTD	Loan-to-deposit
LTV	Loan-to-value
LWB	Labour and Welfare Bureau
mn	Million
MDBs	Multilateral Development Banks
MLETR	Model Law on Electronic Transferrable Records
ML	Machine Learning
MMFs	Money market funds
MVP	Minimum viable product
MIP	Mortgage Insurance Programme
MRF	Mutual Recognition of Funds
MY	Malaysia
MSCI	Morgan Stanley Capital International
NASDAQ	National Association of Securities Dealers Automated Quotations
NBS	National Bureau of Statistics of China
NCD	Negotiable certificate of deposit
NEER	Nominal effective exchange rate
NFCs	Non-financial corporates
NFRA	National Financial Regulatory Administration
NIM	Net interest margin
NGFS	Network of Central Banks and Supervisors for Greening the Financial System
NLP	Natural language processing
NPL	Non-performing loan
NSFR	Net Stable Funding Ratio
NZ	New Zealand
OECD	Organisation for Economic Corporation and Development
OEF	Open-ended-fund
PH	The Philippines
PHP	Philippine Pesos

OIS	Overnight indexed swap
OTC	Over-the-counter
p.a.	Per annum
P2P	Peer-to-peer
PBoC	People's Bank of China
PD	Probability of default
PMI	Purchasing Managers' Index
POEs	Private-owned enterprises
QFI	Qualified Foreign Investor
QMAS	Quality Migrant Admission Scheme
qoq	Quarter-on-quarter
qoqa	Quarter-on-quarter annualised
R&VD	Rating and Valuation Department
REER	Real effective exchange rate
Repo	Repurchase operation
rhs	Right-hand side
RMB	Renminbi
RML	Residential mortgage loan
ROA	Return on assets
ROE	Return on equity
RRR	Required reserve ratio
RTGS	Real Time Gross Settlement
RWA	Risk-weighted assets
SAFE	State Administration of Foreign Exchange
SDR	Special Drawing Rights
SG	Singapore
SHIBOR	Shanghai Interbank Offered Rate
SKEW	Chicago Board Options Exchange Skew Index
SMEs	Small-to-medium-sized enterprises
SOEs	State-owned enterprises
SOFR	Secured Overnight Financing Rate

SPM	Supervisory Policy Manual
STCs	Specialist Technology Companies
S&P 500	Standard & Poor's 500 Index
TFP	Total factor productivity
TH	Thailand
th	Thousands
tn	trillion
TNA	Total net assets
TTPS	Top Talent Pass Scheme
TWI	Trade Weighted Index
UK	United Kingdom
UNCITRAL	United Nations Commission on International Trade Law
UNeDocs	United Nations electronic Trade Documents
US	United States
USD	US dollar
VAR	Vector Autoregression
VaR	Value-at-risk
VHSI	HSI Volatility Index
VIX	Chicago Board Options Exchange Market Volatility Index
VN	Vietnam
wk	Week
WMP	Wealth management product
yoy	Year-on-year

Full text of this Report is available on the HKMA website at **www.hkma.gov.hk**.

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