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

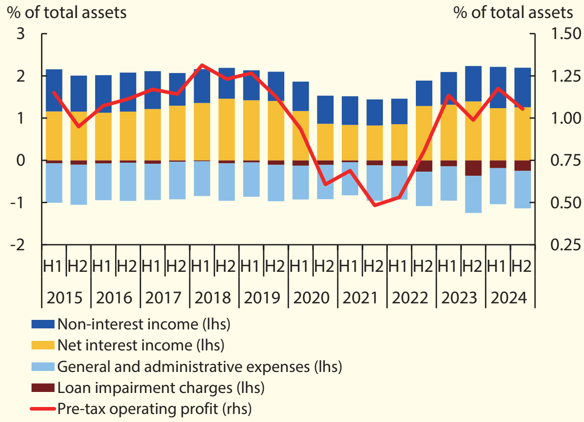
Profitability

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.

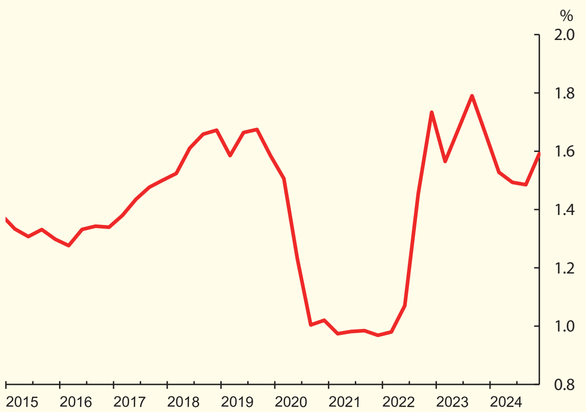
[57] Throughout this chapter, figures for the banking sector relate to Hong Kong offices only, unless otherwise stated.

Chart 5.1
Profitability of retail banks



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

Chart 5.2
Net interest margin of retail banks

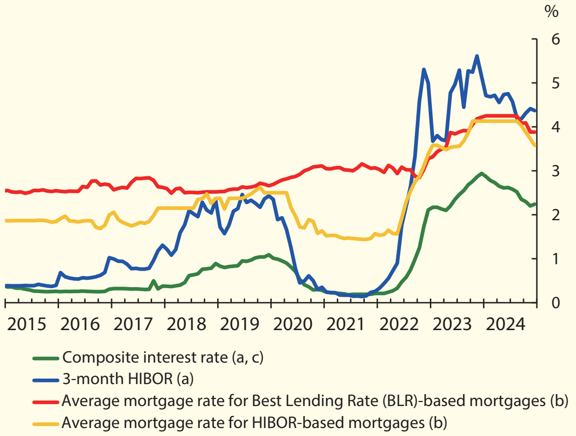


Note: Annualised quarterly figures.
Source: HKMA.

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

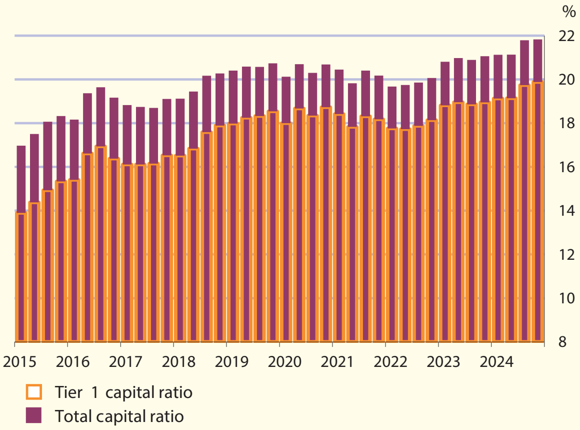


Notes:
(a) End-of-period figures.
(b) Period-average figures for newly approved loans.
(c) Since June 2019, the composite interest rate has been calculated based on the new local "interest rate risk in the banking book" framework. As such, figures from June 2019 onwards are not strictly comparable with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

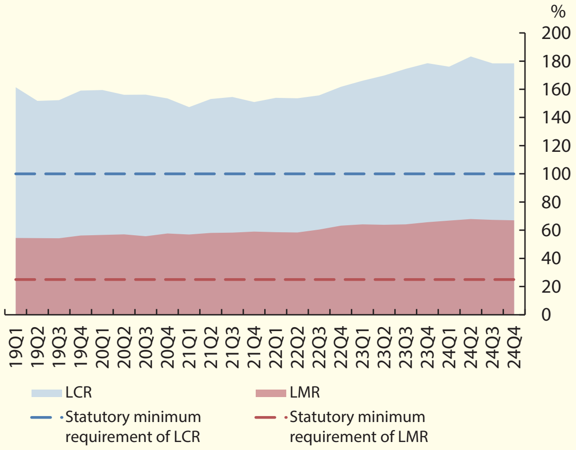
[58] The Basel III non-risk-based leverage ratio requirement acts as a "backstop" to restrict the build-up of excessive leverage in the banking sector. For details, see Banking (Capital) Rules (Cap. 155L).

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%.

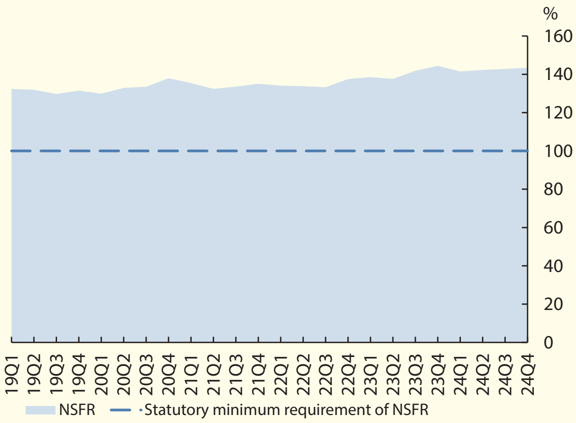
Chart 5.5
Liquidity Coverage Ratio and Liquidity Maintenance Ratio



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

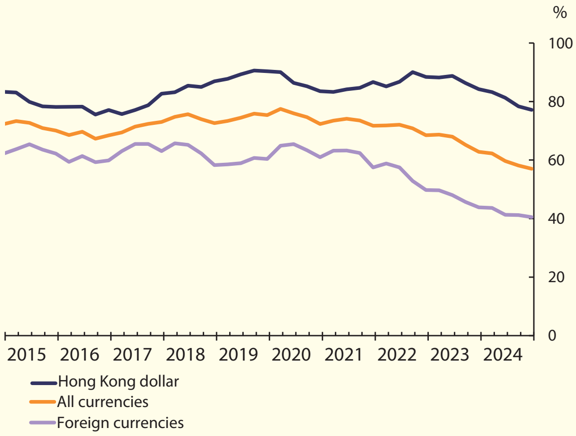


Note: Consolidated basis.
Source: HKMA.

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.

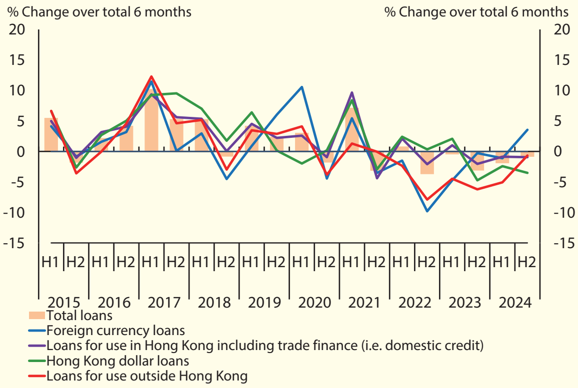
5.3 *Credit risk*

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.

---

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%.

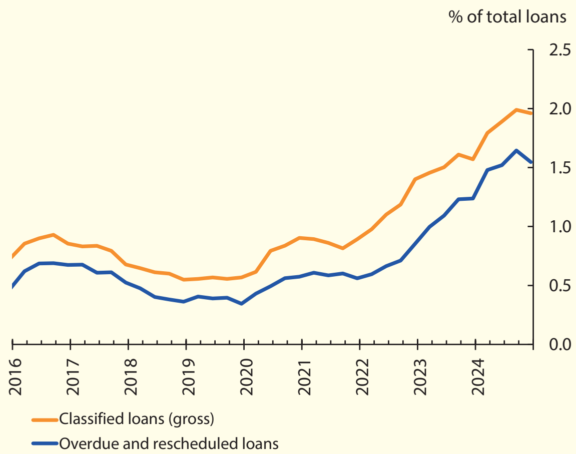
Table 5.A
Expectations of loan demand in the next three months

% 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

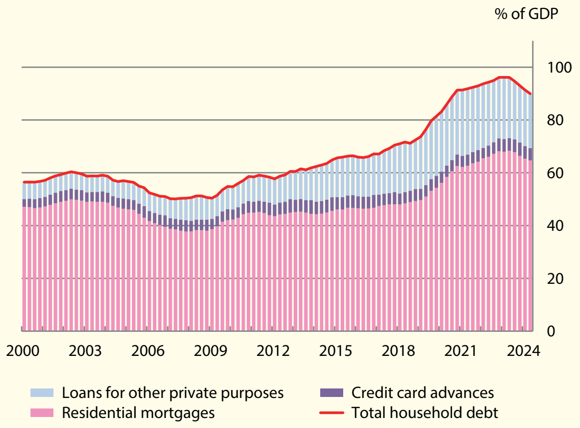
	2021		2022		2023		2024	
(%)	H1	H2	H1	H2	H1	H2	H1	H2
Residential mortgages	4.0	5.7	2.1	1.9	2.6	0.8	0.8	0.6
Personal loans	5.3	1.6	−2.5	−2.2	1.4	−0.3	−1.7	0.5
of which:								
Credit card advances	−0.4	8.1	−5.3	14.4	0.2	10.5	−5.3	6.7
Loans for other private purposes	6.4	0.4	−2.0	−5.1	1.6	−2.6	−0.9	−1.0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

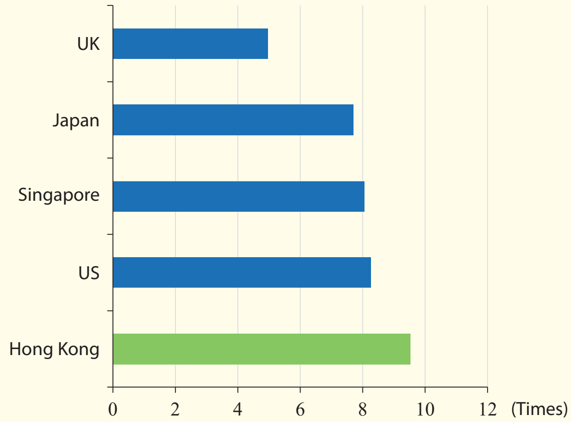
Consequently, a full and objective assessment of the risks associated with household debt requires other factors to be considered, including the actual debt servicing ratio (DSR) and the asset side of the household balance sheet. In fact, the average debt servicing ratio of new mortgages remained at 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.

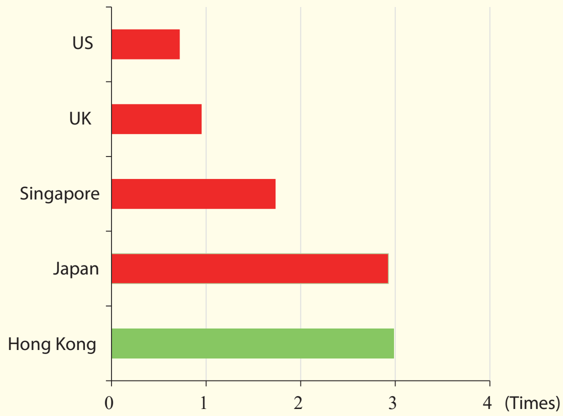
The HKMA also requires banks to adopt prudent underwriting standards for credit card advances and unsecured personal loan business. In reviewing credit applications, banks are required to understand borrowers' credit and financial conditions and carefully assess their repayment ability. As for post-lending, 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

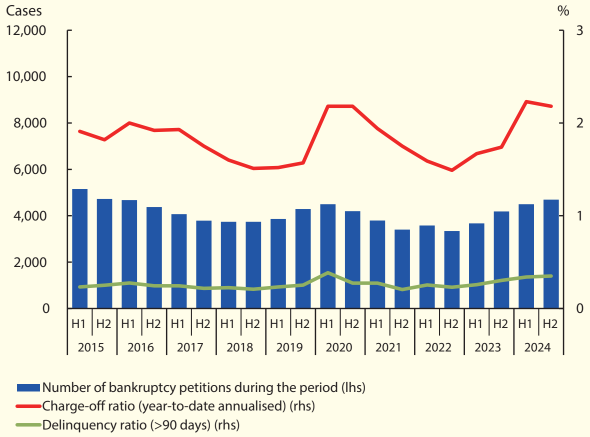


Note: Safe assets comprise deposits, as well as currencies if data is available. In the case of Hong Kong, safe assets refer to deposits only. Figures for Singapore, and the US refer to end-2024, while the figures for other economies (including Hong Kong) refer to end-2023.
Sources: Statistical agencies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

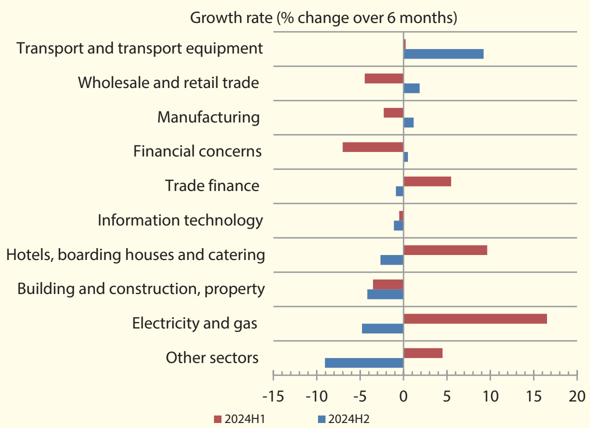


Sources: Official Receiver's Office and HKMA.

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).

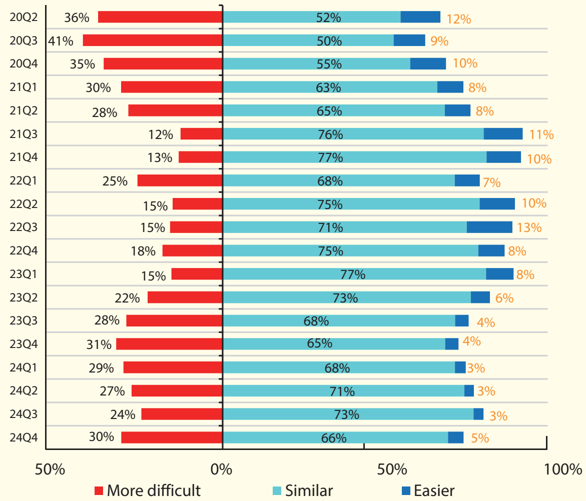
Meanwhile, among respondents with existing credit lines, 0% reported a "tighter" banks' stance in the fourth quarter of 2024, down further from 1% in the previous quarter (Chart 5.16). As a tighter stance on existing credit lines denotes a range of possible measures or arrangements (e.g. reducing unused 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%.

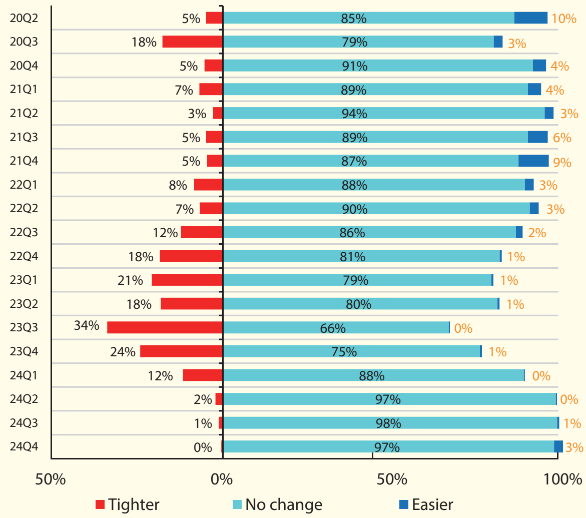
[65] The Taskforce on SME Lending was jointly established by the HKMA and the Hong Kong Association of Banks in August 2024 to further strengthen the related work for supporting SMEs at both the individual case and the industry levels.

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.

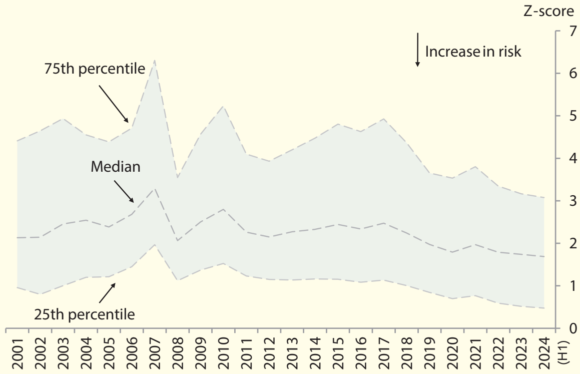
Chart 5.16
SMEs' reported change in banks' stance on existing credit lines



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

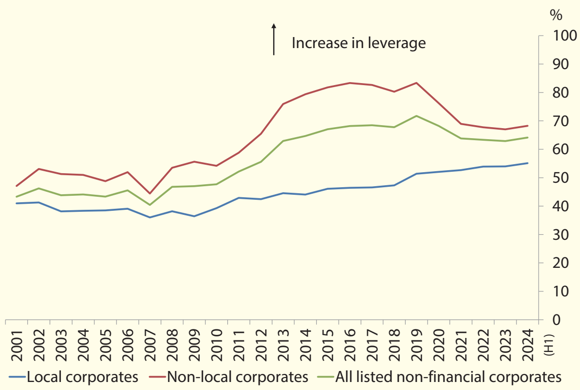


Notes:
1. All non-financial corporates listed on the Hong Kong Stock Exchange have been selected.
2. Figures are calculated based on information up to mid-February 2025.

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).

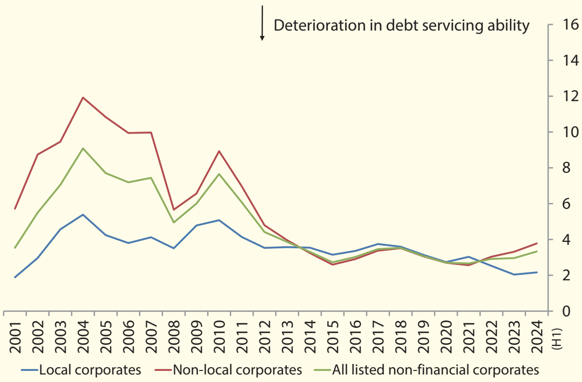
Chart 5.18
Leverage ratio of listed non-financial corporates in Hong Kong



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]

	Estimated credit loss (% of the loan portfolio)	
Scenario	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.

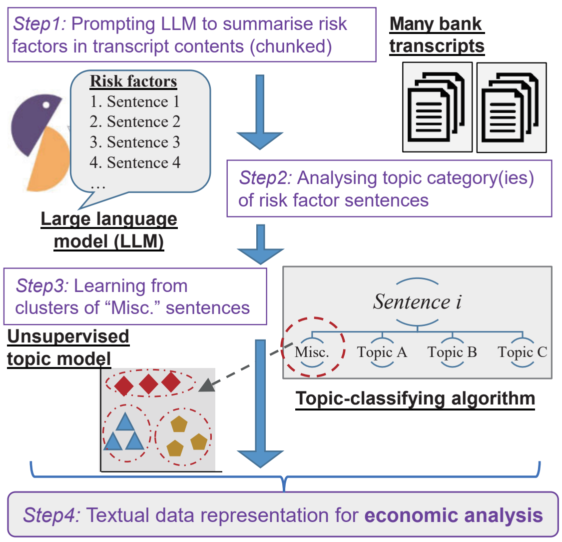
We applied the framework to identify the key risk factors in three recent industry-wide stress episodes occurring between 2020 and 2023. Our findings suggest that the key risk factors identified by the framework are consistent with the actual risk drivers of these episodes. In addition, the findings 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.

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'.

---

[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.

[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.

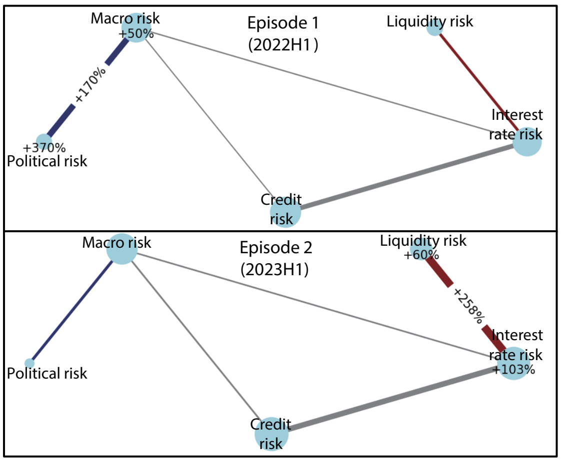
78 For example, the summarised risk sentence "Inflationary pressures remain significant in the near term, amplified by higher energy and food prices, largely due to the Russia-Ukraine war" is linked to political and macro risks.

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.

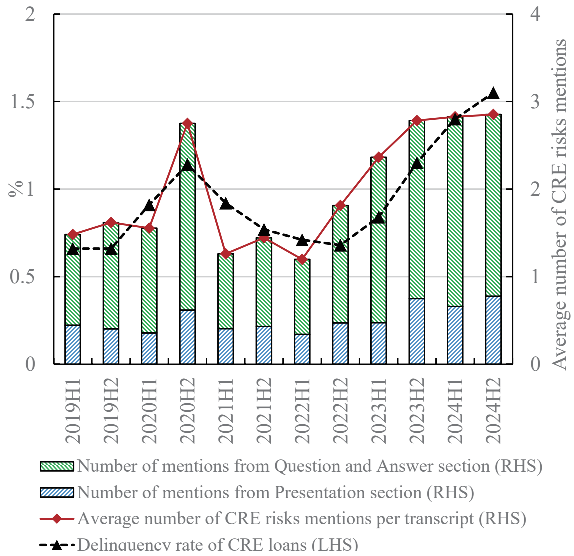
[81] For illustrative purposes, certain standard risk factors that are less relevant for financial stability risk monitoring (such as earnings risk and business growth risk) are excluded from the simplified network chart.

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.

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.

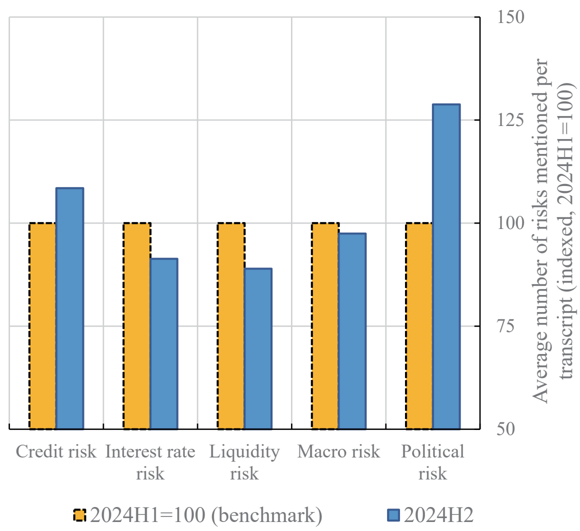
Two key observations are worth noting. First, amid the rapid rise in the US monetary policy interest rate from March 2022, there was a notable rise in the frequency that CRE-related risks were mentioned in the transcripts in the second half of 2022 (red line in Chart B4.3), indicating that such risk 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.